



Upstate New York Multifamily Energy Efficiency and Electrification Program

Program Manual and Technical Guide
August 2026



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1. Introduction

1.1 What is the National Grid Upstate New York Multifamily Energy Efficiency & Electrification Program?

The National Grid Upstate New York Multifamily Energy Efficiency & Electrification Program ("UNY ME3" or "Program") is designed to serve customers who reside in Non-Low-and-Moderate-Income (Non-LMI) multifamily buildings, which are defined as buildings with five or more dwelling units within National Grid's Niagara Mohawk Power Corporation ("NMPC") Gas and Electric service territories. The goal of the program is to improve the building envelopes of customer homes to make them more comfortable year-round, reduce energy costs and usage, and to electrify space and water heating end-uses.

National Grid also aims to support customers residing in Disadvantaged Communities ("DACs") as defined by NY State's Climate Leadership and Community Protection Act ("CLCPA") and NY Public Service Commission ("PSC") regulatory orders and guidance. Aligned with the goals of New York State, National Grid's objective is to allocate a minimum of 40% of the program's annual incentive budgets between 2026-2030 towards projects for Non-LMI customers located in DACs. The UNY ME3 Program Manual ("Program Manual") encompasses information on incentives and the rules of the Program for Non-LMI customers.

Refer to NYSERDA for information on incentives and program rules for Upstate LMI customers. Learn more at <https://www.nyserda.ny.gov/All-Programs/Affordable-Multifamily-Program-Upstate>

2. Program Summary

2.1 Objectives

The UNY ME3 Program, offered by National Grid, is designed to encourage and support NMPC Electric and Gas customers in weatherizing and electrifying Non-LMI multifamily buildings. The Program aligns with New York State climate policies and is meant to achieve energy savings targets established by National Grid in compliance with the NY PSC's 2026-2030 Non-LMI Energy Efficiency and Building Electrification ("Non-LMI EE/BE Order") proceedings under Case 25-M-0248. This Program provides incentives to customers who take steps to improve the energy efficiency of their buildings.

2.2 Incentives Overview

The UNY ME3 Program will provide incentives for Non-LMI multifamily customers to install space and water heating measures, as well as building shell measures, which may include insulation, air sealing, and additional approved weatherization measures. At its sole discretion, National Grid will set final requirements for electrification and weatherization installations in this Program.

3. Implementation Vendor Overview

National Grid has contracted with ICF to be the Program Implementation Vendor (“Implementer”) for the UNY ME3 Program. The Implementer will be responsible for Program reporting and tracking, project and energy savings management and delivery, incentive calculations, processing, and quality assurance. The Implementer will recruit and manage a network of participating installation contractors that will become program-approved Participating Contractors (PCs) by meeting experience and training requirements and signing the program participation agreement.

4. Incentives

4.1. Project Incentives

Under the UNY ME3 Program, National Grid offers financial incentives to support Non-LMI customers pursuing space heating and water heating electrification and weatherization (“Wx”) projects. The maximum incentive is capped at 50% of the total project cost and is limited to the lesser of the dollar amounts in Tables 1 and 2 below. Some incentives are calculated based on the energy savings achieved by each project, as reported by PCs and verified by the Implementer and National Grid. The method and calculations for energy savings may change at any time and at the sole discretion of National Grid. Incentives may vary based on the measures installed for a given project.

National Grid reserves the right to modify incentive levels and incentive caps at any time. This means that National Grid has the authority and flexibility to adjust the amount of incentive provided for individual projects. This flexibility ensures that the UNY ME3 Program remains effective and responsive to customers' needs and the overall goals of energy efficiency and sustainability within authorized Program budgets.

Incentives are available on a first-come, first-served basis. National Grid may reject or modify an incentive application for any reason.

4.2. Coordination with other Programs

Utility and NYSERDA incentives cannot be combined towards the cost of the same installed measure. For example, customers cannot receive incentives towards a heat pump installation from both the National Grid program and the NYSERDA programs.

Incentives may not be combined across multiple utilities as well. However, in limited circumstances projects are eligible for both utility program incentives as well as complementary NYSERDA program funding sources, such as those that support project design and technical assistance including NYSERDA's FlexTech program.

Additional specific program eligibility requirements may apply to a specific NYSERDA program and shall be made clear in the respective program solicitation, manual, etc.

National Grid reserves the right to limit total combined funding for any project at any time.

4.3. National Grid Non-LMI Multifamily Incentive Rates

Electrification Incentive Rates

Electrification incentives are available for projects in buildings with five or more dwelling units. Incentives will be capped at \$500,000 per project or 50% of the total project cost, whichever is lower. Table 1 shows incentive rates for heat pumps. Existing buildings are eligible for incentives for air-source heat pump (ASHP), ground-source heat pump (GSHP), and heat pump water heater (HPWH) projects.

- ***New construction projects are only eligible for incentives for GSHP and HPWH projects.***
- ***New construction projects are NOT eligible for ASHP space heating incentives.***

Table 1: The following table outlines the incentives available for heat pump projects

Heat Pump Type	Application Type	Description	Project Type	Incentive
Space Heating				
<i>5-100 Dwelling Units</i>				
ASHP	Prescriptive	Multifamily Full Load Space Heating Air-Source	Existing	\$3,000/Dwelling Unit
GSHP	Prescriptive	Multifamily Full Load Space Heating Ground-Source		\$3,600/Dwelling Unit
GSHP	Prescriptive	Multifamily Full Load Space Heating Ground-Source	New Construction	\$1,600/Dwelling Unit
<i>101+ Dwelling Units or Custom Applications such as Gut Renovations</i>				
ASHP and GSHP	Custom	Custom Space Heating Applications	Existing and New Construction (GSHP only)	\$90/AMMBTU
Water Heating				
<i>5-100 Dwelling Units</i>				
HPWH	Custom	Custom Heat Pump Water Heating Applications	Existing and New Construction	\$600/Dwelling Unit
HPWH-UEF-EX	Prescriptive	Prescriptive Heat Pump Water Heating Applications		\$1,000/Equipment Unit

101+ Dwelling Units				
HPWH	Custom	Custom Heat Pump Water Heating Applications	Existing and New Construction	\$90/AMMBTU
HPWH-UEF-EX	Prescriptive	Prescriptive Heat Pump Water Heating Applications	Existing and New Construction	\$1,000/Equipment Unit

Projects under 100 dwelling units may receive custom incentives at National Grid's discretion.

Weatherization Incentive Rates

Weatherization and building envelope incentives will be capped at \$500,000 per project up to \$2,000 per dwelling unit or 50% of the total project cost, whichever is lower. Table 2 shows incentive rates for weatherization projects. Existing buildings are eligible for weatherization incentives. New construction projects are not eligible for incentives for weatherization. Air sealing is required to be completed with all insulation and window replacement measures.

Projects with electrification and weatherization measures are subject to the same total incentive caps of \$500,000 per project up to \$2,000 per dwelling unit for weatherization, or 50% of the total project cost, whichever is lower.

Table 2: The following table outlines the incentives available for weatherization projects

Weatherization Measures	Incentive
Above Deck Roof Insulation	\$8.00/Square Foot
Attic Cavity Insulation	\$4.00/Square Foot
Wall Insulation	\$150/Annual MMBTU
Window Replacement	\$150/Annual MMBTU

Retrofit change of use weatherization projects will receive a \$150/AMMBTU custom rate for all measures.

5. Customer and Project Eligibility

5.1. Multifamily Criteria

The UNY ME3 Program provides incentives and program support for National Grid Gas and Electric customers in buildings with five or more dwelling units. Units within the building can be either owned or rented. If rented, the building owner must sign off on any installation projects. Project eligibility depends on the participants' electric and gas utility provider.

The project must be a multifamily building(s) with five (5) or more residential dwelling units in each building. Commercial facilities, such as motels/hotels, group homes, dormitories, shelters, monasteries, nunneries, assisted living facilities, and nursing homes are generally not eligible for participation and should reach out National Grid's Small Business and Large Commercial & Industrial Programs.

Supportive housing, single room occupancy (SRO) facilities, senior living residences that do not include nursing or hospitalization amenities may be eligible for the Program. To determine eligibility, the project application must include a signed memorandum on the customer's letterhead for National Grid approval that describes the facility type, building address, total number of dwelling units in the building, and percentage reserved for long-term occupancy. Once a signed letterhead is provided, National Grid will determine eligibility. National Grid may recommend an alternative path to incentives, including but not limited to National Grid's Small Business and Large Commercial & Industrial Programs.

5.2. Customer Eligibility

Non-LMI Customers

Non-LMI customers, also known as standard rate or market rate customers, can participate in the UNY ME3 Program. National Grid bills for Non-LMI customers are calculated using the standard rates established by National Grid and approved by the NY PSC. Non-LMI customers are typically responsible for covering the entire cost of their energy usage without receiving financial assistance or subsidies. Customers must also have an active natural gas heating and/or electric account with National Grid to be eligible. Incentives are not available to entities who do not contribute to the System Benefits Charge ("SBC").¹

Table 3: The following table outlines the gas and electric utility criteria that must be met for a customer to be eligible for participation in this program

Customer Electric Utility	Customer Gas Heating Utility	Eligible Offerings
National Grid		<ul style="list-style-type: none"> • Electrification • Weatherization
National Grid	Other	<ul style="list-style-type: none"> • Electrification • Weatherization only if building is heated with delivered fuels or heating system is or will be electrified as part of the project's scope
Other	National Grid	<ul style="list-style-type: none"> • Weatherization

¹ Case 25-M-0248, In the Matter of the 2026-2030 Non-Low- to Moderate-Income Energy Efficiency and Building Electrification Portfolios (issued and effective May 15, 2025).

LMI Customers

If a customer's income level meets the LMI criteria, they may qualify for programs and incentives designed specifically for LMI customers. NYSERDA administers LMI programs for multifamily customers in Upstate New York. More information and eligibility criteria for these programs can be found on NYSERDA's website: <https://www.nyseda.ny.gov/All-Programs/Affordable-Multifamily-Program-Upstate>.

5.3. Project Eligibility

Projects must be completed by a Participating Contractor who meets the requirements below. Projects installed by customers or contractors who are not PCs are not eligible for the UNY ME3 Program **except** for residential-rated (UEF) heat pump water heaters. Projects that involve converting unconditioned spaces into conditioned spaces, such as converting an unfinished basement into a living area, are **not** eligible to receive incentives from the Program.

New construction, including building additions as defined in the Energy Conservation Construction Code of New York State ("ECCCNYS"), is not eligible to participate in energy efficiency programs unless explicitly permitted for specific measures (e.g., heat pump water heaters or ground source heat pumps).

For the purposes of Program eligibility, Gut Rehab projects are defined as meeting one of the following conditions:

1. Change of Occupancy with Full Reconstruction:
Projects involving a change in occupancy accompanied by the reconstruction of an existing building or interior space, including the removal of all materials, systems, and equipment down to the structural load-bearing elements.
2. Reconstruction of a Vacant Structure or Space:
Projects that involve the reconstruction of a vacant building or interior space, including removal of all materials, systems, and equipment down to the structural load-bearing elements

The Program will only provide incentives for Gut Rehab projects that exceed applicable energy code requirements.

For qualifying Gut Rehab projects, the current ECCCNYS and/or applicable local energy code shall serve as the baseline for determining eligible energy savings.

Phased Electrification Applications

Electrification projects must meet the full load of the scope of the project to be fully electrified. Exceptions to this are projects considered "phased". As defined in the Non-LMI Order (CASE 25-M-0248), phased systems are defined as "projects wherein the building electrification process is carried out over time." Additionally, the Commission provided guidance stating that, "Phased electrification approaches shall be allowed, for other than single family residences, where the space heating needs of the portion of the building (e.g., unit, apartment, or floor of an office building) that is being electrified are fully satisfied by design." Given the language in the Order, the Company has established the following guidelines for the installation of phased systems:

For a phased system, the Company will require all-electric heat pumps to meet 100% of a zone/area heating load requirement. This definition includes:

- Phased projects that electrify a specific area (e.g. building floor, wing)
- Phased projects that electrify a specific system (e.g. space heating, domestic hot water, or space heating/cooling ventilation only)
- Space heat recovery systems

Phased Project Example: The heat pump system is an independent heating system that satisfies 100% of the heating load of at least five dwelling units. The remaining units or floors of the building will continue to be heated using the existing fossil fuel heating system. Since the heat pumps satisfy at least 100% of the heating load for the areas they serve, they qualify as phased systems.

In pursuing a phased electrification approach, National Grid must ensure that the installation of phased or zoned electrification projects does not impact the operational and safety needs of the customers. To this end, National Grid requires that all Phased Electrification Projects include a Minimum Requirements Document (“MRD”) to help ensure that all installed equipment is properly configured to prevent environmental, safety, or operational hazards because of its interaction with, or connection to, legacy fossil fuel system(s).

Refer to the Technical Guide for additional project eligibility requirements.

5.4. Participating Contractor Participation Requirements

5.4.1. Qualification Criteria

To be eligible for incentives, projects must be installed by a National Grid UNY ME3 PC unless otherwise approved by National Grid. The lead or prime contractor who submits the application to the UNY ME3 Program must be a PC in the UNY ME3 Program. Subcontractors who work for the lead or prime contractors on the UNY ME3 projects may also be UNY ME3 PCs, but subcontractors are not required to be PCs. Lead or prime contractors are responsible for ensuring that work done by subcontractors meets industry standards and all requirements of the UNY ME3 Program.

The table below outlines the general functions and responsibilities of each of the primary categories of PCs that can enroll with the program:

Table 4: Participating Contractor Roles and Responsibilities

Contractor Category	General Definition of Role
Weatherization Contractor	<ul style="list-style-type: none"> • Contractors who are responsible for scoping and installation of building envelope measures (e.g., air sealing, insulation, etc.). • Able to submit rebate applications for their completed projects • Responsible for meeting all program eligibility and QA/QC guidelines, and for submitting requested documentation directly to the program • Responsible for adhering to all applicable laws, regulations, codes, licensing, certification, and permit requirements pertaining to the scope of work

HVAC Installer	<ul style="list-style-type: none"> • Contractors who are responsible for installation of heat pump equipment • Technicians who maintain, service, repair, or dispose of equipment that may contain refrigerant • Able to submit rebate applications for their completed projects • Responsible for meeting all program eligibility and QA/QC guidelines, and for submitting requested documentation directly to the program • Responsible for adhering to all applicable laws, regulations, codes, licensing, certification, and permit requirements pertaining to the scope of work
HVAC Designer	<ul style="list-style-type: none"> • Contractors who are part of a job team, assisting with design and product selection, but are not installing the chosen equipment • Heat pump installation must be completed by a Participating Installer of the respective technology type to receive incentive funds, unless otherwise approved by the National Grid • Able to submit rebate applications on behalf of their customers • Responsible for ensuring all program eligibility and QA/QC guidelines are met by the installation team and collecting requested documentation/action from the installation contractor for submission directly to the program • Responsible for adhering to all applicable laws, regulations, codes, licensing, certification, and permit requirements pertaining to the scope of work • Particularly useful if only submitting custom heat pump rebates
GSHP Driller	<ul style="list-style-type: none"> • Contractors who drill wells for GSHP projects • Not able to submit rebate applications on behalf of customers – must work with a participating Installer or Designer on the job as responsible party for application submission • Must supply necessary drilling/well design documentation to participating Installer or Designer for rebate application • Responsible for adhering to all applicable laws, regulations, codes, licensing, certification, and permit requirements pertaining to the scope of work

Project Expediter	<ul style="list-style-type: none"> • Able to submit rebate applications for installation contractors • Responsible for ensuring that projects meeting all program eligibility and QA/QC guidelines, and for submitting requested documentation directly to the Program • Responsible for ensuring that installing contractors adhere to all applicable laws, regulations, codes, licensing, certification, and permit requirements pertaining to the scope of work
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Contractors must submit the following completed documents to ICF to participate in the Program.

- Participating Contractor Agreement
- National Grid UNY ME3 Participating Contractor Application
- IRS Form W-9
- Contractor License
- A certificate of insurance satisfying the requirements outlined in the Contractor Participation Agreement
- Sector-specific documentation as shown in Table 18

PC must adhere to all applicable laws, regulations, codes, licensing, certification, and permit requirements pertaining to the scope of work. For example, where EPA Section 608 Technician Certification² is required, the technician handling the refrigerant must adhere to the certification requirement that is appropriate for the size of the system being installed.

Table 5: Required Contractor Documentation by Contractor Type

Contractor Type	Required Documentation
Weatherization Contractor	<ul style="list-style-type: none"> • Building Performance Institute (BPI) certification • If a contractor does not hold BPI certification, an alternative requirement is for them to have at least three years of field experience, accompanied by references. This criterion ensures that the contractor has significant practical knowledge and expertise in their field of work. By requesting references, National Grid can verify the contractor's track record and gather feedback from previous clients, further ensuring their suitability for the program.
ASHP Installer	<ul style="list-style-type: none"> • ASHP Manufacturer-sponsored Installation Training Certificate (or comparable) • ASHP Manufacturer-sponsored Cold Climate Air Source Heat Pump Sizing and Design Training Certificate or comparable proof of training completion documentation³

² Available at: <https://www.epa.gov/section608/section-608-technician-certification-0>

³ A calendar of training options may be found at: <https://cleanheatconnect.ny.gov/calendar/>

	<ul style="list-style-type: none"> Where applicable, Participating Contractors are required to review and use the <i>NEEP Guide to Sizing and Selecting Air-Source Heat Pumps in Cold Climates</i>⁴
ASHP Designer	<ul style="list-style-type: none"> An active NYS Professional Engineering license OR active NYS Registered Architect license ASHP Manufacturer-sponsored Cold Climate Air Source Heat Pump Sizing and Design Training Certificate or comparable proof of training completion documentation Participating Contractors are required to review and use the <i>NEEP Guide to Sizing and Selecting Air-Source Heat Pumps in Cold Climates</i>
AWHP Installer	<ul style="list-style-type: none"> AWHP Manufacturer-sponsored Installation Training Certificate (or comparable, including Heatspring's <i>Application of Air-to-Water Heat Pumps for Hydronic Heating and Cooling</i> course⁵ or Heatspring's <i>Heat Pump System Design & Installation</i> course⁶) Attestation that the installer holds, or will hold, all necessary plumbing licenses for their installation locations
GSHP Contractor	<ul style="list-style-type: none"> A copy of a current (and in good standing) International Ground-Source Heat Pump Association ("IGSHPA") accredited installer certificate
GSHP Designer	<ul style="list-style-type: none"> A current (and in good standing) IGSHPA accredited installer certificate OR an active Certified GeoExchange Designer ("CGD") certificate from the Association of Energy Engineers ("AEE")/IGSHPA
GSHP Driller (Vertical Loop Field)	<ul style="list-style-type: none"> Active registration (in good standing) and certification for open-loop geothermal well drilling by the NYS Department of Environmental Conservation OR National Ground Water Association Certified Vertical Closed-Loop Driller (CVCLD) certificate
GSHP Driller (Direct Exchange "DX")	<ul style="list-style-type: none"> Training certificate from a DX Ground Source Heat Pump manufacturer

Additional Participation Qualifications:

Additional consideration will be given to applicants who also submit additional documentation verifying completion of training programs, including the following:

- Ground-loop designer
 - CGD
 - Geology or engineering degree (BS or higher)
 - Heat pump manufacturer/distributor training
- HVAC system designer
 - HVAC excellence residential heat load analyst
 - NYS licensed PE with a focus in mechanical engineering
 - Heat pump manufacturer/distributor training

⁴ Available at: <https://neep.org/sites/default/files/Sizing%20%26%20Selecting%20ASHPs%20In%20Cold%20Climates.pdf>

⁵ Available at: <https://www.heatspring.com/courses/application-of-air-to-water-heat-pumps-for-hydronic-heating-cooling>

⁶ Available at: <https://www.heatspring.com/courses/heat-pump-system-design-installation#instructors>

- Heat pump/mechanical installer
 - North American Technician Excellence (“NATE”) ground source heat pump loop installer
 - NYS licensed PE with a focus in mechanical engineering
 - Heat pump manufacturer/distributor training
- Distributions system installer
 - HVAC excellence duct and envelope testing
 - Plumbing license (hot water pipes)

National Grid will review all applications, agreements, and supporting documentation and determine whether the contractor is accepted into the UNY ME3 Participating Contractor Network. Upon acceptance into the network, the Participating Contractor will receive approval notification emails and be eligible to apply for incentives in the Program (except for Participating Drillers). Incentive applications can be found on National Grid's website. ngrid.com/unymultifamily

Heat Pump Water Heater Contractors

Installing: Residential Rated HPWH

Contractors installing Residential rated (UEF) HPWHs are not required to complete a Contractor Participation Agreement to be eligible to receive incentives under this program. Contractors installing HPWH are required to be a NYS Licensed Contractor.

Site owners may install their own HPWH and apply for an incentive independently. All applicable codes and standards must be followed.

5.5. Participating Contractor Agreement

- Participating Contractor Agreement
 - Contractors must sign the Participating Contractor Agreement to participate in the UNY ME3 Program.
 - NYS Clean Heat Participating Contractors are eligible to participate in the UNY ME3 Program.
- Training

Contractors must successfully complete all trainings required for their Contractor Category described above.

5.6. Application Information

Projects submitted to the National Grid UNY ME3 Program must follow the general process outlined below.

The Participating Contractor, its employees, and subcontractors shall treat customers fairly and in good faith, and shall deliver promised services in a timely, responsible, professional, and competent manner. The Participating Contractor shall fairly represent the UNY MF Program and the relationship of the Participating Contractor with National Grid to customers and the public. If it is determined that the Participating Contractor is not fairly or accurately representing the UNY MF Program and/or its relationship with National Grid, the Participating Contractor will be subject to administrative review and its status within the UNY MF Program may be affected.

Applications for measures that are eligible for incentives in Table 1 and Table 2 above **must be submitted prior to installing the proposed measures** with all required documentation in section 5.7. In cases where the scope consists of heat pumps being installed across multiple buildings owned by the same entity, a single application shall be submitted. In the case of applications involving GSHP systems, incentive applications will not be accepted if construction of the loop field for such projects has begun before National Grid sends the Participating Contractor and/or customer an approval notice. Projects where equipment is connected to an existing bore field may be exempt from this requirement.

5.7. Required Documents

General Documentation Requirements

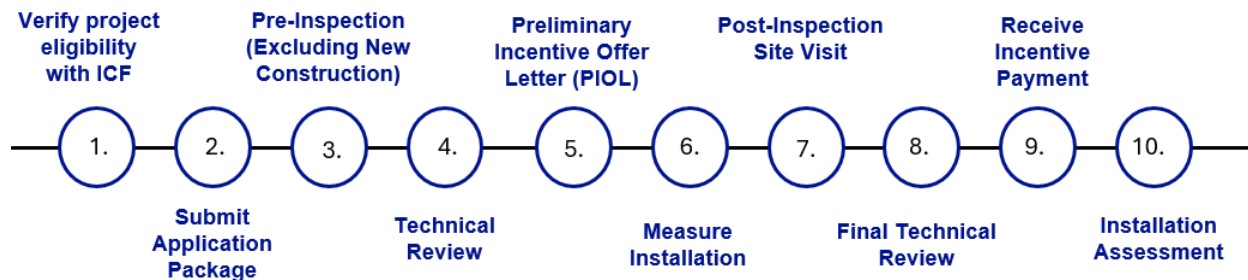
All projects are required to submit the following documents **at minimum** as part of the application package:

- **Completed UNY ME3 Program Application** – PDF application forms will be available on National Grid's website and from ICF.
- **Customer W-9 and Incentive Recipient W-9 (if applicable)**
- **Scope of Work or Proposal** – Description of project and inventory of equipment to be installed, such as a proposal, statement of work, or mechanical schedule. Please describe what will happen to the existing heating system and any backup or supplemental heating system(s) that will be serving the same area as the heat pump system.
- **Cost estimate for proposed work** – Including an itemization of labor and material costs.
- **Cutsheets for proposed equipment** – This should include specific model(s), AHRI certificate(s), and NEEP certificates(s), if applicable. If AHRI and/or NEEP certificate is not available, reviewer may request manufacturer performance calculations and/or documentation of capacities at design temperatures.
- **For Space Heating projects:**
 - **Load calculations** – Model output showing Building Heating and Cooling Loads and source documentation. Calculations must be performed in accordance with ACCA Manual J, ANSI/ASHRAE/ACCA Standard 183-2007 (RA2017), or other code-approved equivalent computational procedure depending on building type (for details see Section 3.3).
 1. Block loads must be provided. Room-by-room models may be requested.
 2. Provide both inputs to energy model and model output.
- **For Ground Source Heat Pumps** – Ground loop design report with average, min, max entering water temperatures. This requirement applies both to projects with new borefields and projects connecting to existing borefields.
- **For ERVs** – Determine whether or not the ERV/HRV is required by code. If not, provide a summary referencing section C403.7.4 of 2025 Energy Conservation Construction Code of New York State.
- **For Domestic Hot Water** – Location to be installed and number of occupants.
- **For Phased applications and/or applications with backup or supplemental heating systems**

- Description of any existing or new heating system remaining in the building and which spaces they service.
- Documentation showing whether a supplemental heating system is required to accommodate the design heating load.
- Why additional electrification above and beyond the proposed design is not feasible (if applicable).
- **Savings analysis:** The Statewide Building Electrification Program Space Heating and Cooling Calculator should be used as the default method to calculate energy savings for the custom heat pump incentives (those not calculable by size, technology or installation using the TRM algorithm).
- If necessary, applicants may opt to calculate savings using a custom bin analysis or energy modeling approach. All calculations must be clearly documented and unlocked, utilizing standard engineering methodologies, including a listing of source values.
- **For Heat Pump with Envelope improvements:**
 - Building Heating and Cooling Loads representing baseline condition.
 - Documentation of proposed envelope measures, including architectural drawings and/or product submittals.
 - For gut rehabs and new construction, documentation that envelope meets applicable code i.e., Tabular Analysis, envelope RES/COMcheck, or Performance Path.
 - Blower door test data, if available, to support envelope improvement infiltration guidance.
- **For Building Envelope/Weatherization Only Projects:**
 - Savings Calculator
 - Specification sheets
 - Scope of work (existing conditions vs. proposed)
 - Detailed and paid-in-full invoice
 - Utility usage data for 12 months
- **Additional information** – Reviewer may request (if not provided via application or other documents) the following information:
 - Description of existing heating and cooling systems, heating fuel, building vintage, and building envelope.
 - Building information including building square footage.
 - Whether any other measures are being installed to contribute to additional heating or cooling relief, such as building envelope upgrades.
 - Documentation of incentives received from NYSERDA (see Section 2.3 for additional information about coordination with NYSERDA programs on available incentives).

National Grid and/or ICF may request other information that is not listed in this Program Manual if it is necessary to evaluate specific project applications. National Grid may reject any application if the information required by National Grid and/or ICF is not provided by the PC or customer.

5.8. Application Process



Step 1. Verify Project Eligibility

Prior to submission of an incentive application, the PC or applicant shall confirm that the customer, site, proposed measures, and contractors qualify for the UNY ME3 Program per the requirements in this Program Manual.

Step 2. Submit Application Package

To apply for an incentive, the applicant (PC and/or customer) must submit the incentive application and required documents listed above to ICF based on directions on the application document.

Step 3. Pre-Inspection

The existing conditions of the site must be confirmed via pre-inspection. To be eligible for incentives, work may not begin until this pre-inspection has been completed, and a Pre-Approval has been issued by ICF via email.

Exemptions for Late Project Submittals

National Grid understands that sometimes project contractors and owners are not aware of the custom process flow and may submit projects too late to receive an Initial Technical Review and/or Pre-Inspection. National Grid may consider granting an exemption in such cases, if it determines that the Participating Contractor and customer are acting in good faith, were not aware of the process requirements and provides project documentation for validation.

Step 4. Technical Review

This step applies to projects whose measures fall under custom incentive categories.

ICF will review the application's technical documentation for completeness to verify equipment technical eligibility, project incentive category, baseline, and assumptions used in the energy analysis to determine preliminary savings and incentives for the project.

ICF will not approve incentive applications with missing or inaccurate information. ICF will contact the applicant (Participating Contractor and/or customer) and request the missing and/or correct information.

Step 5. Receive Preliminary Incentive Offer Letter

Once a project application has been reviewed and pre-inspection has been performed, National Grid will issue a Preliminary Incentive Offer Letter ("PIOL") to the PC via email that provides incentive details, including the incentive amount, if National Grid determines that the project is eligible for a specific incentive amount per the Initial Technical Review and Pre-Inspection, or per information received in response to a one-time exemption.

The PIOL serves as an indication that installation of project measures may begin. The PIOL is also conditional on there being no material changes to the project. If there are any changes to the project scope of work (such as in the installed equipment) or the project technical analysis, the initial approval will be voided and the project will be re-evaluated for eligibility and incentive amount based on the new information received, the current calculation methodologies, and current incentive structures.

The PIOL is valid for 12 months from the date of the customer signs acknowledgement signature. An applicant may request approval for an extension, and adjustments may be made on a case-by-case basis with written approval from National Grid.

Step 6. Install Equipment

The PC must install qualifying equipment that adheres to the eligibility requirements in. If the PC is unsure if the equipment selected is qualified for the Program, they should contact their ICF account manager for guidance.

In the event of unusual delays, the PC may request an extension of time to complete the project by submitting an email to their ICF account manager explaining the reason for the delay.

Extensions may be granted or denied at ICF and/or National Grid's discretion. The project is considered complete when all incentivized measures are installed. At this time, the PC, in cooperation with the system owner and/or site owner, will submit necessary completion paperwork.

- **Final itemized invoices and receipts** documenting actual material and labor costs for the measure installation. Costs shall be limited to the equipment cost and labor cost. Other costs such as taxes, internal labor costs, shipping, administrative costs, or similar costs will not be included with total project cost when calculating incentive caps.
- **Revised calculations if required**, e.g. if/when revisions were made to the original load calculations or post-inspection indicates variance from the submitted model inputs (e.g., building size, insulation).

Step 7. Post-Inspection

ICF and National Grid reserve the right to inspect the new condition of any site to confirm that all work was installed in accordance with the scope of work provided with the initial project application.

Step 8. Final Technical Review

ICF will review completion paperwork and findings from the post-inspection, revising the energy savings calculations as necessary to reflect as-built conditions and as-installed costs, to determine the final project savings and incentive.

Once the project completion documents are submitted, if the paperwork meets all program requirements and funding remains available, the incentive application will be approved, and full payment will be sent to the applicant (PC and/or customer).

Rejection or modification of an incentive application is at ICF and National Grid's sole discretion for either of the following reasons:

- The PC's past performance on National Grid supported projects did not meet program requirements.
- The quality of the incentive application or responsiveness of the PC is insufficient as determined by ICF and/or National Grid.

Step 9. Receive Incentive Payment

ICF will pay incentives to the applicant or to a third-party, as designated in the application.

Applicants may apply to receive incentive payments via ACH, so that PCs can receive incentive payments directly into their bank accounts without the need for paper checks. The minimum threshold to be eligible for ACH are deposits totaling \$100,000 annually.

Step 10. Installation Assessment

PCs will be required to comply with a QA/QC process for the purpose of ensuring quality installations. Additionally, PCs may be subject to project-specific reviews and/or assessments for the purposes of verifying program measure implementation and acquisition.

5.9. Incomplete Applications and Delays

ICF will not issue a PIOL or final payment for any project they determine to have missing or inaccurate information. ICF will consider the application incomplete and contact the PC and/or customer to request the missing and/or corrected information.

PCs will be given 30 days from the date that ICF issues the request for the missing and/or corrected information to complete their application. If the missing and/or corrected information is not provided within the 30 days, the incomplete application will be moved to Inactive status. PCs may still reopen an inactive application after 30 days by submitting the missing and/or corrected information without needing to resubmit the application entirely.

6. Logo Use Disclaimer

Participating Contractors are not permitted to use, reproduce, or otherwise publish any of National Grid's logos on marketing materials or for any other purpose.

Technical Guide for Electrification and Weatherization Measures

7. Electrification Eligibility

This section describes eligibility requirements for electrification projects.

7.1. Electrification Sizing

All installed heat pumps and any connected ductwork must be properly sized for the application to meet the building heat load requirements, ensure occupant comfort and satisfaction, and optimize system performance and energy savings.

Program Requirements for System Sizing

To be eligible for incentives, all heat pump systems must be sized in compliance with applicable state and municipal code.

Heating and cooling equipment and water heating appliances for buildings under four stories shall be sized in accordance with ACCA Manual S or other approved sizing methodologies based on building loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies.⁷ Applicable exceptions shall apply.⁸

Participating Contractors are also encouraged to use additional design manuals as applicable to the system, including ACCA⁹ Manual D: Duct Design,¹⁰ ACCA Manual T: Air Distribution,¹¹ and ACCA Manual B: Test, Adjust and Balance.¹²

Equipment installed in multifamily buildings must be sized in accordance with heating and cooling loads in accordance with applicable federal, state, local and municipal codes and standards. The output capacity of heating and cooling equipment shall not be greater than that of the smallest available equipment size that exceeds the calculated loads.

Full Load Requirement and Examples

All heat pump systems shall be designed and sized for full load heating, unless otherwise noted.

Under the UNY ME3 Program, a full load heat pump system is defined as a system installed as a multifamily dwelling unit or building's primary heating source, with a total system heating capacity that satisfies at least 100% of the building heating load ("BHL") at design conditions, in accordance with applicable code, and can distribute heat adequately across all occupied spaces in the project scope. Projects in all categories must be sized to meet at least 100% of the load over the project scope at design conditions. If the building has a higher BCL than BHL, the system must be sized to satisfy full building cooling load ("BCL"), as required by relevant municipal or state code.

The following are examples of heat pump systems qualifying for full load heating:

- *Full Load Heating Example 1:* The heat pump system provides 110% of the heating load for an entire multifamily building. Since the system provides more than 100% of the heating load for the building, it qualifies as a full load heating system.
- *Full Load Heating with Phased Electrification Example 2:* The heat pump system is an

⁷ 2025 Residential Code of NYS, Chapter 14, Section M1401.3 Equipment and appliance sizing

⁸ 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/>.

⁹ Air Conditioning Contractors of America

¹⁰ ACCA Manual D: Duct Design: Method used to determine the overall duct layout including the individual duct sizes.

¹¹ ACCA Manual T: Air Distribution: Method used to determine how to distribute airflow.

¹² ACCA Manual B: Test, Adjust and Balance: Method designed to test and balance HVAC equipment in an order that speeds up and improves the balancing process.

independent heating system that satisfies 100% of the heating load serving three floors of a seven-floor multifamily building. The remaining four floors will be heated using the existing boilers. In this case, the program will consider the three floors to be within the scope of the project. Since the heat pumps satisfy at least 100% of the heating load for the areas they serve, they qualify as full load heating systems. The Participating Contractor must provide justification for completing three of seven floors.

- *Full Load Heating Example 3:* The heat pump system is a GSHP that serves 100% of the load in 90% of a multifamily building with the remaining 10% fulfilled by ASHP. The project will be eligible for incentives. If the building is new construction, total incentive will be prorated based on GSHP share of load.
- *Full Load Heating Example 4:* An HP-DOAS is installed to serve a ventilation load, previously served by a fossil fuel DOAS unit. Contractor provides documentation that 100% of the ventilation load is met by the HP-DOAS.

Documentation of Sizing

Documentation must be provided with all applications to show equipment sizing is in accordance with Program rules, described in this section.

Oversized Systems

National Grid reserves the right to request additional justification or documentation regarding heat pump system sizing, including systems that have sizing ratios substantially greater than 120% BHL and 115% BCL.

Design Temperatures

Calculation of the BHL shall be at the 99% dry bulb heating design temperature for the most relevant ASHRAE (2021) location. Calculation of the BCL shall be at the 1% dry bulb cooling design temperature for the same ASHRAE location. Design temperature requirements in this Program Manual may be superseded by the local Authority Having Jurisdiction (AHJ). In such cases, Contractors must provide documentation citing the applicable local requirement. Refer to Table 5 below for examples of ASHRAE (2021) dry bulb heating and cooling design temperatures for various locations across New York State. The applicable location may be found in the Program's Design Temperature Lookup Tool¹³ by entering the project zip code.

7.2. Eligible Electrification Technologies

Eligible technologies are grouped into several major categories:

- (1) Air Source Heat Pumps for space heating applications, including:
 - a. Cold Climate Air-to-Air Mini-Split Heat Pumps
 - b. Cold Climate Air-to-Air Single Packaged Heat Pumps
 - c. Air-to-Air Large Commercial Unitary Heat Pumps (single packaged or split system)
 - d. Air Source Variable Refrigerant Flow Heat Pumps
 - e. Packaged Terminal Heat Pumps
 - f. Single Package Vertical Heat Pumps
 - g. Air-to-Water Heat Pumps

¹³ As available for download on the Resources for Applications webpage, under the Prescriptive (Small Projects) and Custom (Large Projects) sections. <https://cleanheat.ny.gov/resources-for-applications/>.

- (2) Ground Source Heat Pumps for space and water heating applications
- (3) Heat Pump Water Heaters for domestic and service water heating applications, including:
 - a. Air-to-Water HPWHs
 - b. Ground Source Heat Pump Desuperheaters
 - c. Dedicated Water-to-Water Heat Pump added to Ground Loop
- (4) Energy Recovery Ventilators (ERVs) and Heat Recovery Ventilators (HRVs) paired with eligible heat pumps
- (5) Heat Recovery Chillers and Heat Pump Chillers
- (6) Heat Pump Dedicated Outdoor Air Systems (HP-DOAS)

Heat pump systems used for space heating must be designed for either heating-only operations or both heating and cooling operations; cooling-only systems are not eligible for incentives.

The installation of used or refurbished equipment and components is **not** permitted under the Program. For projects installed at new construction sites, all components installed as part of an approved GSHP system must be new. For projects installed at existing sites, the heat pumps must be new, and any system subcomponent or subassembly such as controls or ductwork that is replaced should be replaced by a new subcomponent or subassembly.

Heat pump projects are eligible for incentives when they replace other technologies and fuels (e.g., fuel oil, natural gas, propane, biomass, or electric resistance) in existing buildings. Projects which replace non-ccASHP units or non-Full Load ccASHP systems are ineligible for UNY ME3 incentives. Additionally, Projects that seek to replace a full-load ccASHP are not eligible for this Program. All heat pumps must be installed *after* January 1, 2026.

Refer to the Application Process section of this Program Manual for project application submission requirements including when to submit during a project's life cycle and required timeframes for heat pump installation.

7.3. Heat Pump Equipment Installation

To be eligible for Program incentives, Participating Contractors and their agents must install systems and system components in accordance with manufacturer specifications and installation requirements, and in compliance with all applicable laws, regulations, codes, licensing, and permit requirements, including but not limited to the United States Environmental Protection Agency (EPA), New York State Environmental Quality Review Act, the Statewide Uniform Fire Prevention and Building Code and State Energy Conservation Construction Code, the National Electric Code, Fire Codes and all applicable state, city, town, or local ordinances and/or permit requirements. Contractors and their agents must also follow best practices for all aspects of installation, including the appearance of the property upon project completion.

Outdoor units should be installed above the local snow line.¹⁴

¹⁴ As referenced in https://neep.org/sites/default/files/resources/InstallingASHPinCold_edits.pdf

Table 6: Dry Bulb Design Temperatures

City Name	<u>2025 ASHRAE</u>	
	99% Heating Dry Bulb (deg F)	1% Cooling Dry Bulb (deg F)
Albany	5.4	86.6
Binghamton	4.6	82.5
Buffalo	8.7	78.9
Central Long Island	16.9	86.7
Elmira	4.6	87.0
Fort Drum	-3.6	84.1
Glens Falls	-1.2	84.9
Islip	16.1	86
Jamestown	5.9	81
Massena	-7.0	84.6
Monticello	5.6	83.8
Niagara Falls	7.2	85.6
Poughkeepsie	9.1	88.6
Rochester	7.2	86.3
Saranac Lake	-12.1	81.1
Syracuse	5.0	86.9
Utica	1.1	84.4
Watertown	-5.1	83.5
Westhampton	12.4	84.2
White Plains	13.9	86.7

Load calculations performed may use dry bulb temperatures that differ from those in Table 6, but in those cases, must be within five degrees (+/-) of the applicable values in Table 6.

Central Cold Climate ASHPs

Central Air Source Heat Pumps listed by NEEP as ccASHPs have cooling capacities less than 65,000 Btu/h and are not contained within the same heating system as a furnace with rated capacity greater than 225,000 Btu/h.¹⁵ These units are typically sized to provide heating and cooling to the whole building through a central duct distribution system. They are generally a retrofit solution for existing buildings that are replacing central air conditioners, which were installed in conjunction with a separate heating system (typically a fossil fuel or electric furnace) that shares the same duct distribution system.

The Participating Contractor shall verify and document the system's operation with the equipment manufacturer's specifications.

Cold Climate Mini-Split Heat Pumps

Cold climate MSHPs are ccASHPs that can circulate refrigerant between an outdoor unit containing a variable capacity compressor and one or more indoor air handlers ("indoor units"). Cold climate MSHPs are often referred to as "ductless mini-splits" because they are typically ductless but can also be installed with short duct runs that enable single air handlers to serve more than one room at a time. For existing homes and businesses that have no central ductwork, cold climate MSHPs are a viable and energy efficient solution.

Commercial Unitary Systems/Large Commercial ASHPs

Large commercial ASHPs are a retrofit solution for multifamily buildings that currently have rooftop or central air conditioners, which are often installed in conjunction with a separate heating system. Eligible Commercial Unitary Systems must have the following characteristics:

- Systems other than single phase with rated cooling capacity <65,000 Btu/h must consist of multi-stage (including dual-stage) or variable speed compressors
- Systems must meet the criteria in the applicable table below

Single phase, variable speed units with rated cooling capacity <65,000 Btu/h must be listed in the NEEP cold-climate heat pump directory (the NEEP specification requirements of which are shown in Table 7); and they must be variable speed, or have three or more stages. Units of this size are rated in accordance with 10 CFR 430.23(m).

Table 7: Commercial Unitary Systems Criteria - Single Phase Variable Speed Units with Rated Cooling Capacity <65,000 Btu/h

Rated cooling capacity (Btu/h) <65,000	SEER2	HSPF2	COP@5°F
Single phase, variable speed	≥14.3	≥7.7	≥1.75

Three phase (either multi-stage or variable-speed) equipment with rated cooling capacity <65,000 Btu/h must meet the specifications described in Table 7. For three phase equipment, SEER and HSPF may be used for compliance instead of SEER2 and HSPF2 only for models that have not been rated with SEER2 and HSPF2. These requirements only need to exceed the stated values for

¹⁵ Code of Federal Regulations ("CFR") 10 CFR part 430, Subpart A, § 430.2 Definitions: definition of central air conditioner or central air conditioning heat pump: https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=29d99fa0a367f0166b9cc8528ad29023&mc=true&n=pt10.3.430&r=PART&ty=HTML#se10.3.430_12.

ONE parameter in the applicable row; the others can be equal to or greater than the values shown. Commercial units of this size are rated in accordance with 10 CFR 431.96.

Table 8: Commercial Unitary Systems Criteria - Three Phase Multi-Stage or Variable Speed Equipment with Rated Cooling Capacity < 65,000 Btu/h

Rated cooling capacity (Btu/h) <65,000	SEER	HSPF	SEER2	HSPF2
Single-package	>14	>8.0	>13.4	>6.7
Split	>14	>8.2	>14.3	>7.5

Systems with rated cooling capacity (Btu/h) $\geq 65,000$ must be variable speed or have two or more stages. Additional requirements are shown in. Systems with rated cooling capacity (Btu/h) $\geq 65,000$ and $< 240,000$ must meet or exceed both of the values in the applicable row. Systems $\geq 240,000$ Btu/h must exceed one of the values in the applicable row and must meet or exceed the other value. Units of this size are rated using AHRI 340/360 (2023).

Table 9: Commercial Unitary Systems Criteria - Multi-Stage or Variable Speed Equipment with Rated Cooling Capacity $\geq 65,000$ Btu/h

Rated cooling capacity (Btu/h) ¹	Supplemental heat type	IEER	COP @ 47 °F
$\geq 65,000$ and $< 135,000$	Electric resistance or none	≥ 14.1	$\geq 3.5^*$
$\geq 135,000$ and $< 240,000$		≥ 13.5	$\geq 3.4^*$
$\geq 240,000$		> 12.5	> 3.2
$\geq 65,000$ and $< 135,000$	All other types of heating	≥ 13.9	$\geq 3.5^*$
$\geq 135,000$ and $< 240,000$		≥ 13.3	$\geq 3.4^*$
$\geq 240,000$		> 12.3	> 3.2

* Energy Star requirement for COP at 47F. All other values are federal minimum requirements.

Air Source Variable Refrigerant Flow Heat Pump Systems

Air Source Variable Refrigerant Flow (ASVRF) systems are engineered direct expansion (DX) multi-split systems that circulate refrigerant between a variable capacity compressor and multiple indoor air handlers, each capable of individual zone temperature control. They provide some major advantages, including the ability for heat recovery that allows them to heat and cool different zones simultaneously, optimized performance across a range of zonal comfort levels and partial load conditions, and the avoidance of ductwork or the need for secondary circulation fluids such as chilled or heated water. Because they circulate refrigerant and allow for a separate outside air ventilation system, they require less ceiling space than conventional systems.

- ASVRF systems must be rated under AHRI Standard 1230 to be considered for eligibility. ASVRF systems between 65,000 and 240,000 Btu/h cooling capacity must meet or exceed current requirements under ENERGY STAR Criteria for Certified Cold Climate Light Commercial Heat Pumps.¹⁶

¹⁶ Like central ASHP, VRF systems are also covered under the ENERGY STAR Light Commercial HVAC specification: https://www.energystar.gov/products/heating_cooling/light_commercial_heating_cooling/light_commercial_hvac_key_product_criteria

- For systems with capacities greater than those covered by ENERGY STAR, heat pump efficiencies must exceed local energy code.

The Contractor must provide documentation showing capacities at heating and cooling design conditions for the system as designed (not AHRI ratings), using the same outdoor design temperatures that were used for calculating the building design loads.

ASVRF systems must comply with ASHRAE Standard 15-2019 Safety Standard for Refrigeration Systems and Designation and Classification of Refrigerants, which addresses refrigerant capacities and possible leakage, especially if the system serves small rooms, which could cause oxygen depletion. In addition, the ASVRF systems must comply with ASHRAE Standard 34-2019 Addendum L, which establishes the maximum refrigerant concentration limit ("RCL") of 26 lbs./1,000 ft³ of room volume for occupied spaces.

Cold Climate Packaged Terminal Heat Pumps (ccPTHP)

A cold climate packaged terminal heat pump ("ccPTHP") is a wall sleeve and a separate un-encased combination of heating and cooling assemblies specified by the builder, intended for a single zone and intended for mounting through the wall. It includes a prime source of refrigeration, separable outdoor louvers, forced ventilation, and heating availability by builder's choice of hot water, steam, or electricity. A PTHP utilizes reverse cycle refrigeration as its primary heat source and is equipped with supplementary heating via hot water, steam, or electric resistance heat.

Packaged terminal heat pumps are tested under AHRI standard 310/380. To be eligible for the Program, each unit in the system must be on the NEEP Product List, *i.e.*, be a ccPTHP.¹⁷

Ground Source Heat Pumps

Ground source heat pumps (GSHPs), also known as geothermal heat pumps, achieve high efficiency by exchanging thermal energy with the ground or with groundwater instead of outside air. GSHP systems work well in cold climates because of their ability to maintain capacity at low ambient air temperature.

GSHP systems may also take advantage of the heat generated by the indoor compressor, particularly in cooling mode, by providing a desuperheater loop that pre-heats domestic hot water. GSHPs distribute heating and cooling in the building through a ducted air system, a water loop, refrigerant lines, or a combination of these. System performance depends on an effective ground heat exchanger design and proper installation. The ground heat exchanger design can be highly site-specific, given the variability of site conditions that affect ground conductivity or loop designs.

There are several categories of GSHPs eligible for incentives, including:

- (1) Open-Loop GSHPs
- (2) Closed-Loop GSHPs
- (3) Direct exchange (DX) GSHPs
- (4) Console type GSHP systems
- (5) Non-Console GSHPs less than 24,000 Btu/h (2 tons)
- (6) Ground-Source Variable Refrigerant Flow Systems (GSVRFs)

¹⁷

See also NEEP Cold Climate PTHP Specification: https://neep.org/sites/default/files/media-files/ccpthp_spvhp_specification_v1.pdf

For projects where more than one building shares a common bore field, consult your utility program representative to determine eligibility. Customers or projects participating in Utility Thermal Energy Network (“UTEN”) projects are not eligible for incentives in the UNY ME3 Program.¹⁸

Eligibility for systems with total heating capacity <300,000 Btu/h:

- Must meet or exceed Geothermal ENERGY STAR specifications, which covers equipment powered by single-phase electricity¹⁹
- Must be sized to meet at least 100% of the load of the project scope at design conditions and serve at least 80% of the building’s total square footage
- Must have a closed loop ground heat exchanger circulating a water/antifreeze solution, an open loop heat exchanger, or a direct expansion (DX) ground heat exchanger
- Must have a total system heating capacity <300,000 Btu/h and consist only of individual appliance cooling capacity for open and closed-loop GSHP installs <135,000 Btu/h and/or individual appliance cooling capacity for direct exchange GSHP installs ≤180,000 Btu/h
- Projects may include electric resistance heating not to exceed 10% of BHL

ENERGY STAR eligibility is based on the following test procedures to determine GSHP appliance Energy Efficiency Ratio (“EER”) and Coefficient of Performance (“COP”):

- Closed Loop Systems:
 - ISO 13256-1-1998 “Water-source heat pumps – Testing and rating for performance – Part 1: Water-to-air and brine-to-air heat pumps” for water to air models; OR
 - ISO 13256-2-1998 “Water-source heat pumps – Testing and rating for performance – Part 2: Water-to-water and brine-to-water heat pumps” for water-to-water models
- Direct Exchange Systems: AHRI 870 (I-P/2016) and AHRI Standard 871 (SI) – 2016 “Performance Rating of Direct GeoExchange Heat Pumps”

Eligibility for any GSHP less than 135,000 Btu/h of cooling capacity may be obtained from an AHRI rating certificate. For units larger than 135,000 Btu/h cooling capacity, which are not rated by AHRI, manufacturer specification sheets may be used instead, provided the units have been tested in accordance with the applicable test procedure.

For multi-stage systems for which AHRI certificates are not available, the EER and COP must be calculated using the following equations:

- $EER = (full\ load\ EER + part\ load\ EER)/2$
- $COP = (full\ load\ COP + part\ load\ COP)/2$

Calculation of the EER and COP values must be determined using the following AHRI-rated data:

- Ground loop heat pump (GLHP) for closed-loop system
- Direct GeoExchange (in accordance with AHRI 870) for DX GSHP systems

Eligibility for systems with total heating capacity <300,000 Btu/h: GSHP systems may qualify for incentives provided they meet or exceed the ENERGY STAR Geothermal heat pump specification

¹⁸ UTEN projects are defined by the New York Department of Public Service in Case 22-M-0429, filing dated December 1, 2023.

¹⁹ ENERGY STAR references: https://www.energystar.gov/products/heating_cooling/heat_pumps_geothermal/key_product_criteria
https://www.energystar.gov/sites/default/files/specs/private/Geothermal_Heat_Pumps_Program_Requirements%20v3.1.pdf
<https://www.energystar.gov/productfinder/product/certified-geothermal-heat-pumps/results>

for single phase units and NYSECC code minimums for 3-phase units and exhibit one or more of the following characteristics:

- Systems with individual heat pump appliances powered by three-phase electricity
- Systems with a total system heating capacity $\geq 300,000$ Btu/h
- Systems that have individual appliance cooling capacity for closed-loop GSHP installs $\geq 135,000$ Btu/h
- Systems that have an individual appliance cooling capacity for direct exchange GSHP installs $\geq 180,000$ Btu/h

The following are *exceptions* to the above GSHP eligibility criteria:

- Console type GSHP systems, regardless of total heating system size or individual appliance cooling capacity, are eligible if they meet or exceed the minimum efficiencies listed in Table 10 below. These systems do not need to meet or exceed the ENERGY STAR Geothermal heat pump specification efficiency requirements.
- Non-console GSHP systems that have rated cooling capacities less than 24,000 Btu/h, regardless of total heating system size, are eligible if they meet or exceed the minimum efficiencies listed in Table 11 below. These systems do not need to meet or exceed the ENERGY STAR Geothermal heat pump specification efficiency requirements.
- GSVRF Systems are eligible for incentives. These systems do not need to meet or exceed the ENERGY STAR Geothermal heat pump specification efficiency requirements.

Program applications for GSHPs with less than 10 tons of cooling capacity must include an AHRI rating certificate for each heat pump model to be installed. For units larger than 10 tons of cooling capacity, which are not rated by AHRI, manufacturer specification sheets must be submitted instead, provided the units have been tested in accordance with AHRI/ISO 13256-1, 13256-2, 550/590, or 870/871, as applicable.

GSHP console units—which are only eligible for the program if they are required due to sizing and/or space constraints—must have an AHRI-rated EER and an AHRI-rated COP of no less than the following:

Table 8: Efficiency Requirements for Console Units

System Type	EER	COP
<i>Water to Air</i>		
Closed-Loop Water-to-Air	14.0	3.0
Open-Loop Water-to-Air	14.0	3.0
<i>Water-to-Water</i>		
Closed-Loop Water-to-Water	N/A	N/A
Open-Loop Water-to-Water	N/A	N/A
<i>Direct Exchange</i>		
Direct Exchange	N/A	N/A

The EER and COP must be calculated using the following equations:

- $EER = (\text{full load EER} + \text{part load EER})/2$
- $COP = (\text{full load COP} + \text{part load COP})/2$

GSHP systems that are not console units and have AHRI-rated cooling capacities less than 24,000 Btu/h (2 tons) must have AHRI-rated EER and AHRI-rated COP of no less than the following:

Table 9. Efficiency requirements for non-console units with AHRI-rated cooling capacities < 24,000 Btu/h

System Type	EER	COP
<i>Water to Air</i>		
Closed-Loop Water-to-Air	15.0	3.2
Open-Loop Water-to-Air	20.0	4.1
<i>Water-to-Water</i>		
Closed-Loop Water-to-Water	16.6	3.1
Open-Loop Water-to-Water	20.1	3.5
<i>Direct Exchange</i>		
Direct Exchange	N/A	N/A

Table 10. Efficiency requirements applicable to Water Source Variable Refrigerant Flow heat (VRF) pumps tested under AHRI 1230 water source configuration, however intended to be used in a ground source configuration.

Equipment Type	Cooling Capacity (Btu/h)	Min. EER at 86F EWT (without heat recovery)		Min. EER at 86F EWT (with heat recovery)		Min. COP at 68F EWT	Testing Procedure
Water Source VRF Multi= split System	<65,000	12 EER	16 IEER	11.8 EER	15.8 IEER	4.3	AHRI 1230
	> 65,000 < 135,000	12 EER	16 IEER	11.8 EER	15.8 IEER	4.3	AHRI 1230
	≥ 135,000 < 240,000	10 EER	14 IEER	9.8 EER	13.8 IEER	4.0	AHRI 1230
	≥ 240,000	10 EER	12 IEER	9.8 EER	11.8 IEER	3.9	AHRI 1230

EER and COP calculations for such systems must be calculated using rated EER and COP.

General Well/Borehole/Loop Field Requirements

- All projects must comply with New York State Department of Environmental Conservation (“DEC”) regulations for geothermal well drilling.²⁰

²⁰ NYS DEC guidance for Geothermal Wells Deeper Than 500 Feet, <https://www.dec.ny.gov/energy/1748.html>, and NYS DEC Well Permitting Requirements, <https://www.dec.ny.gov/energy/1783.html>.

- For non-DX GSHP systems, only polyethylene piping is appropriate for underground loop field piping.
- For large scale systems, Participating Contractors must show rated walls and ceilings and specify firestopping of pipe penetrations.
- All well/bore fields must provide adequate well/bore spacing and thermal dispersion to accommodate the thermal load and thermal balance.
- For large GSHP systems, provide emergency eye washes on site during installation, as required by OSHA.
- Piping must be stored on site in a manner that prevents damage and the introduction of foreign matter. Piping shall be kept free from damage, debris, and foreign matter during installation.
- Grout and admixtures must be received and stored in a way that protects them from moisture and contamination.
- Manifolds installed underground or in a buried enclosure must have proper valves, pressure, and temperature ports.
- All equipment and system parts should be labeled per IGSHPA and ASHRAE guidelines.
- Performance tests must be verifiable. Temperatures, pressures, flow rates, control valve operation, controls, balancing reports, sequence of operations, power measurements, software, start-up and commissioning efforts and reports are all subject to review and observation.
- Projects must meet all setback requirements enforced by the local Authority Having Jurisdiction.
- It is also recommended that GSHP systems meet the ANSI/CSA C448 Series-16 standard.

Vertical-Loop Systems: Any vertically bored, closed-loop GSHP system must have a borehole depth that is sufficient to provide a minimum entering water temperature to the heat pump of 30°F in heating mode and a maximum entering water temperature to the heat pump of 90°F in cooling mode. The system must be designed in accordance with manufacturer specifications and installation requirements.

Exception: Vertically bored ground loops designed for a minimum entering water temperature >25°F and <30°F in Department of Energy Climate Zones 5 and 6 shall be considered eligible provided they meet the following additional criteria:

1. Heat pumps shall be designed to provide at least 100% of the building heating load without supplemental heating
2. Requires submission of loop sizing documents signed off by a New York State Professional Engineer or Certified GeoExchange Designer

Closed-Loop Systems: Unless specifically superseded by the requirements detailed in this manual, the design and installation of closed-loop GSHP systems (including ground-loop and interior systems) must comply with the standards and practices outlined in the most recent edition of the Closed-Loop/Geothermal Heat Pump Systems: Design and Installation Standards edited by the IGSHPA Standards Committee and published by the International Ground Source Heat Pump Association. These standards are available online on the IGSHPA website.²¹

²¹ International Ground Source Heat Pump Association, <https://igshpa.org/manuals>

Table 13 presents program requirements for the maximum allowable rated pumping power at design conditions (based on duty point), as well as good-practice guidance based on an ASHRAE GSHP Design Guide²² for large systems and field measurements for small systems.

Table 11: Maximum Allowable and Good Practice Pumping Power for Closed-Loop GSHP Systems in watts (W) per AHRI rated²³ full-load heating or cooling capacity of the installed system

GSHP System Configuration	Maximum Allowable Pumping Power in watts (W) per 10,000 Btu/h of full-load heating capacity OR in watts (W) per ton of full-load cooling capacity	Good Practice Pumping Power in watts (W) per 10,000 Btu/h of full-load heating capacity OR in watts (W) per ton of full-load cooling capacity
GSHP units in residential and small commercial applications where each GSHP unit has its own dedicated loop pump	100	Less than 75
GSHP systems with multiple heat pump units served by centralized ground loop pumping	85	Less than 60

Closed Loop Antifreeze Protection Requirements: Propylene glycol (CAS No. 57-55-6), ethylene glycol (CAS No. 107-21-1), methanol (CAS No. 67-56-1) and ethanol (CAS No. 64-17-5) are the four presumptively acceptable antifreeze additives for use in the loop field. Use of any other antifreezes requires prior approval from National Grid. The acceptable denaturants for ethanol additives are denatonium benzoate (CAS No. 3734-33-6), ethyl acetate (CAS No. 141-78-6), isopropanol (CAS No. 67- 63-0), pine oil (CAS No. 8002-09-3), and tertiary butyl alcohol (CAS No. 75-65-0).

Systems with ethanol and methanol must comply with Section 1207 of the 2020 Mechanical Code of New York State and, therefore, “the flash point of transfer fluid in a hydronic piping system shall be not less than 50oF above the maximum system operating temperature.”

The maximum allowable concentration of methanol is 12.5% by weight. The maximum allowable loop field temperature in small systems using methanol as an antifreeze is 75°F. In addition, the designer and installer should ensure the loop field operating temperature is at least 50°F lower than the flash point of methanol at all times.

²² Kavanaugh and Rafferty (2014). Geothermal Heating and Cooling: Design of Ground-Source Heat Pump Systems. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).

²³ Reference the AHRI Ground-loop Heat Pump Application (GLHP) rating for Full-Load Heating Capacity and for Full-load Cooling Capacity.

The maximum allowable concentration of ethanol is 10% by weight. The maximum allowable loop field temperature in a small system using ethanol as an antifreeze is 70°F. In addition, the designer and installer should ensure that the loop field operating temperature is at least 50°F lower than the flash point of ethanol at all times.

For loop fields with glycol or organic antifreeze, the Participating Contractor must sterilize with a chlorine shocking protocol that is similar to what is required in potable water plumbing systems. If the manufacturer recommends specific disinfection, the Participating Contractor should follow the manufacturer's protocols.

Horizontal-Loop Systems: Horizontal loops must be installed below the frost line and have a surface area that is sufficient to provide a minimum entering water temperature of 30°F to the heat pump in heating mode and a maximum entering water temperature of 90°F to the heat pump in cooling mode.

Systems must be designed in accordance with manufacturer specifications and installation requirements. Incentive applications must include the file from the horizontal-loop design software showing inputs and system design specifications.

Exception: Horizontal ground loops designed for a minimum entering water temperature >25°F and <30°F in Department of Energy Climate Zones 5 and 6 shall be considered eligible, provided that they meet the following additional criteria:

- Heat pumps shall be designed to provide at least 100% of the Building Heating Load without supplemental heating
- Requires submission of loop sizing documents signed off by a New York State Professional Engineer or an IGSHPA- or AEE- Certified GeoExchange Designer

Open-Loop Systems: A standing column well must include a bleed circuit, drywell, or locally approved receptor to maximize thermal efficiency based on available water production.

Incentive applications must quantitatively explain the method for determining pressure and flow rate. All projects must comply with NYS DEC regulations for geothermal well drilling, which can be found on the DEC website.²⁴

All projects must comply with ANSI/CSA/IGSHPA C448.6, *Installation of open-loop systems ground water heat pump systems*. All standing column well projects must comply with ANSI/CSA C448.7, *Installation of standing column well heat pump system*.

Table 14 presents program requirements for the maximum allowable rated pumping power at design conditions (based on duty point), as well as good-practice guidance.

²⁴ NYS DEC guidance for Geothermal Wells Deeper Than 500 Feet, <https://www.dec.ny.gov/energy/1748.html>, and NYS DEC Well Permitting Requirements, <https://www.dec.ny.gov/energy/1783.html>.

Table 12: Maximum Allowable and Good Practice Pumping Power for Open-Loop GSHP Systems in watts (W) per AHRI rated²⁵ full-load heating or cooling capacity of the installed system

GSHP System Configuration	Maximum Allowable Pumping Power in watts (W) per 10,000 Btu/h of full-load heating capacity OR in watts (W) per ton of full-load cooling capacity	Good Practice Pumping Power in watts (W) per 10,000 Btu/h of full-load heating capacity OR in watts (W) per ton of full-load cooling capacity
GSHP units in residential and small commercial applications where each GSHP unit has its own dedicated loop pump	140	Less than 105
GSHP systems with multiple heat pump units served by centralized ground loop pumping	120	Less than 90

DX GSHP System: Direct exchange heat pumps, which circulate a refrigerant typically through a closed-loop copper pipe system (whereas most systems utilize plastic pipes that circulate water or a water-antifreeze mixture), must meet the following additional conditions:

- DX GSHP systems must have a minimum loop field length of 100 feet per 12,000 Btu/h of heating capacity
- DX GSHP wells require cathodic protection ensuring a minimum expected well life of 25 years
- DX GSHP system owners must certify that they will undergo an end-of-life decommissioning that includes full refrigerant recovery
- The entire well depth interval for DX GSHP wells must be grouted with thermally enhanced grout with hydraulic conductivity below 1×10^{-7} centimeters/second
- A permanent placard must be attached to the heat pump unit, detailing the following:
 - loop field refrigerant content, type, and volume
 - loop location description
 - loop piping material
 - required maintenance schedule on loop field, refrigerant, and heat pump
 - planned decommissioning date and process, consistent with loop field useful life
- DX GSHP systems must also comply with ANSI/CSA/IGSHPA C448.8, "Installation of direct expansion heat pump systems"
- DX GSHP systems must use only ACR B280 Copper Piping for Underground Loop Field
- DX GSHP systems must conform to requirements of ASHRAE Standard 15-2019

²⁵ Reference the AHRI Ground-water Heat Pump Application (GWHP) rating for Full-Load Heating Capacity and for Full-load Cooling Capacity

Large GSHP System-Specific Requirements

- For large systems, a loop field design includes:
 - Loop/site plan
 - Loop sizing report (flexible)
 - Loop field pressure drop calculations
 - Antifreeze type and concentration
 - System documentation must include a piping schematic accurately representing below grade and above grade piping strategy
- Large systems with ethanol and methanol must comply with Section 1207 of the 2015 Mechanical Code of New York State and, therefore, “the flash point of transfer fluid in a hydronic piping system shall not be less than 50oF above the maximum system operating temperature”
- Large systems must implement the following:
 - Show rated walls and ceilings and specify firestopping of pipe penetrations
 - Detail cross connection control devices in the design
 - Conform to the requirements and standards of ASHRAE 15

Thermal Conductivity Tests: For any new construction or retrofit for which a new vertically bored, closed-loop ground loop greater than 300,000 Btu/h system heating capacity is being installed, a test borehole is recommended to be drilled prior to system design to more accurately determine the soil’s thermal conductivity and enable accurate system modeling and design optimization. Testing should conform to the requirements detailed in the latest edition of the ASHRAE Applications Handbook and must report undisturbed ground temperature.

Test boreholes are recommended, but not required, for projects with system capacities between 135,000 Btu/h and 300,000 Btu/h.

Heat Pump Water Heaters and Ground Source Water-to-Water Heat Pumps

In addition to space heating, the UNY ME3 Program also promotes the use of heat pump technology for heating domestic hot water, as a replacement or in new construction in lieu of common electric resistance or fossil fuel water heaters. As with space conditioning heat pump technologies, for retrofit applications, the program will require that applicants report the existing water heating fuel that is being replaced; for new construction, the replaced unit will be determined to be electric resistance.

As with space conditioning, heat pump water heaters can be air source or ground source technology.

Ground Source Desuperheaters and DHW Water-to-Water Heat Pumps

Ground source systems can reduce DHW energy consumption by two optional methods: 1) Using a GSHP unit with a desuperheater or 2) adding either a separate water-to-water heat pump (WWHP) to the ground loop that is dedicated to meeting the DHW load, or sizing a WWHP to meet the DHW as well as space heating loads.

Desuperheaters are available on most GSHP models. A desuperheater recovers heat from the GSHP’s compressor during both cooling and part-load heating mode and transfers it to the DHW tank. Thus, they satisfy a portion of the building’s annual DHW load. Therefore, they require some form of complementary water heating.

Full-load DHW WWHPs can either be installed as a priority zone on a GSHP HVAC system, or as a stand-alone system. They are designed to provide all of the building’s DHW needs.

A full-load DHW WWHP must meet or exceed ENERGY STAR Geothermal Heat Pump specification requirements²⁶ or the efficiency requirements listed above for Non-ENERGY STAR Compliant Geothermal Heat Pumps to be eligible for incentives.

WWHPs shall receive incentives based on \$/MMBtu of energy savings.

Systems shall be sized according to the equipment manufacturer's recommendations.

Ground Source HPWH loop requirements shall be the same as those for GSHP, as described above.

Energy Recovery Ventilators (ERVs) and Heat Recovery Ventilators (HRVs)

Energy Recovery Ventilators (ERVs) and Heat Recovery Ventilators (HRVs) reduce heating and cooling loads while maintaining required ventilation rates by facilitating heat transfer between outgoing conditioned air and incoming outdoor air. ERVs and HRVs employ air-to-air heat exchangers to recover energy from exhaust air for the purpose of pre-conditioning outdoor air prior to supplying the conditioned air to the space, either directly or as part of an air-conditioning system. When paired with a heat pump system, the ERV/HRV can significantly reduce the size of the required HVAC system.

For the purposes of this measure, ERVs and HRVs are distinguished as follows:

- ERV: Transfers both sensible (heat content) and latent (moisture content) heat between supply and exhaust airstreams
- HRV: Transfers sensible heat only between supply and exhaust airstreams

Only those ERV/HRVs with efficiencies exceeding federal, state, or municipal codes or standards and that are paired with an eligible heat pump system are custom incentives under this Program. Installation of an ERV/HRV does not impact the incentive category for the heat pump portion of the work. Eligible ERV/HRVs must meet the following criteria:

1. Exceed federal, state, or municipal efficiency codes or standards
2. Must be paired with an eligible heat pump system in one of the following configurations:
 - Independent heat pumps are sized to meet space heating eligibility requirements, including the ventilation air (after accounting for the heat or energy recovery) for the zone(s) served by the ERV/HRV
 - A dedicated heat pump in series with the ERV that is sized to meet space heating eligibility requirements, relative to the ERV/HRV ventilation load after accounting for the heat or energy recovery
 - An ERV with dedicated electric resistance or fossil fuel heating source to provide conditioning of the ventilation air is not eligible

²⁶ ENERGY STAR Program Requirements for Geothermal Heat Pumps:
https://www.energystar.gov/sites/default/files/specs/private/Geothermal_Heat_Pumps_Program_Requirements

Heat Recovery and Heat Pump Chillers

Heat recovery chillers (“HRC”) and heat pump chillers (“HPC”) are systems that provide space and water heating (hot water) to a building by recovering heat from a low temperature source. Low temperature sources may include air, water, or waste heat sources. These systems can also provide chilled water for cooling. Unlike HPCs, HRCs can provide simultaneous heating and cooling but do not have to do so at all times.

HRCs/HPCs eligible to receive incentives in custom space and hot water categories are subject to the same incentive limitations as all other heat pump projects. To be eligible for incentives, HRC/HPCs must be electrically operated and meet or exceed the minimum efficiency requirements at operating conditions set forth in ASHRAE Standard 90.1-2022 under AHRI 550/590. HRCs are exempt from the requirement to displace at least 50% of the existing on-site fossil fuel consumption annually or to provide at least 4,000 MMBtu of annual savings. Equipment must be used to satisfy space heating loads. **Equipment used for process heating is ineligible for Multifamily incentives.**

If AHRI certificates containing heating performance under AHRI standard 550/590 are not available, data must be presented by the manufacturer's representative that satisfy ASHRAE 90.1-2022, Table 6.8.1-16 calculated with parameters consistent with AHRI standard 550/590 under heating and cooling operation appropriate for the project.

Heat Pump Dedicated Outdoor Air Systems (HP-DOAS)

Heat pump dedicated outdoor air units (HP-DOAS) are a type of direct expansion DOAS that provides 100% outdoor air, using a heat pump to dehumidify in the cooling season, heat during heating season, and deliver this conditioned ventilation air to the building interior. HP-DOAS efficiency can be increased by energy recovery wheels or plates, which transfer energy between exhaust and intake air streams. HP-DOAS may have low temperature lockouts and/or electric coil or fossil backup heating systems at low outside temperatures.

HP-DOAS are eligible to receive incentives. HP-DOAS may also be installed as a replacement to a fossil fuel or electric resistance DOAS serving only ventilation loads. To be eligible for incentives, HP-DOAS must meet or exceed the minimum efficiency requirements set forth in Addendum cv to ASHRAE Standard 90.1-2022²⁷ Tables 6.8.1-13 and 6.8.1-14 using AHRI 920-2022.

Water source HP-DOAS coupled with fossil fuel boilers as a heat source are not eligible.

Since AHRI certificates with the above parameters generated under AHRI 920 may not be available, the applicant must provide documentation from the manufacturer's representative demonstrating that the HP-DOAS meets the above criteria.

For HP-DOAS with energy recovery, the applicant must also provide documentation defining whether the energy recovery is required, or not required, by code per NYS ECC 2025 section C403.7.4 as well as summer and winter efficiency parameters for energy recovery.

²⁷https://www.ashrae.org/file%20library/technical%20resources/standards%20and%20guidelines/standards%20addenda/90_1_2022_cv_20230228.pdf

7.4. Warranty Requirements

All ASHPs, including ASVRF

Each qualified ASHP receiving an incentive under this category must include a minimum five (5)-year manufacturer's warranty for parts including compressor.

GSHP Systems

For large GSHP systems, the minimum manufacturer's warranty must be at least one-year parts and labor, as required by law. Participating Contractors must present to the customer any optional extended warranty up to the maximum supported by the manufacturer.

HPWH Systems

Residential Rated HPWH

Each residential rated HPWH system receiving an incentive under this Program must include a minimum 10-year manufacturer's warranty for parts and tank.

HPWH other than Residential-Rated HPWH

Each HPWH system receiving an incentive under this Program must include a manufacturer's warranty for parts and tank.

7.5. Operation and Maintenance Requirements

Electrified heating systems are often a new type of appliance for the site's owner, so it is important that owners understand how to effectively operate and maintain their new systems. Participating Contractors must inform site owners about system operation and maintenance, including the use of these systems in both heating and cooling modes. A detailed manufacturer's operation handbook as well as a maintenance manual containing information on the major components, and a schedule of required system maintenance must be provided by the Participating Contractor.

The manual must include maintenance and testing requirements of antifreeze solutions used on the project. It must include any startup/commissioning documentation for the system(s). For large systems, the O&M manual must include as-built drawings.

Participating Contractors should strongly encourage system owners to purchase a maintenance agreement.

7.6. Savings Methodology for Prescriptive Multifamily Buildings

National Grid shall rely on *The New York Standard Approach for Estimating Energy Savings from Energy Efficiency Programs - Residential, Multi-Family, and Commercial/Industrial*, known as the Technical Resource Manual ("TRM") and best practices to estimate energy savings for heat pump installations.²⁸

For multiple-unit configurations not covered by the TRM, or for larger or custom systems, the Participating Contractor will perform custom analyses to determine savings, consistent with the approaches outlined for custom measures in the TRM. Refer to Engineering Savings Analysis Requirements for Custom Applications for more details concerning the requirements for the custom category engineering savings analysis.

Exception: Multifamily retrofits for buildings over four stories or for system sizes exceeding 300,000 BTU/hr may be required to use the Statewide Building Electrification Program Space Heating and Cooling Calculator, depending on the number of units applying for incentives. See Table 1 for eligibility requirements.

7.6.1. Engineering Savings Analysis Requirements for Custom Applications

Applications for custom categories may include a detailed engineering analysis showing energy savings in net annual MMBtu related to the project measures. Savings may be calculated through the following methods:

Statewide Building Electrification Program Space Heating and Cooling Calculator

The Statewide Building Electrification Program Space Heating and Cooling Calculator is an Excel-based tool that has been developed to assist Participating Contractors applying to non-residential heat pump programs across the state with calculating energy savings and incentives for various types of heat pump technologies.

The Statewide Building Electrification Program Space Heating and Cooling Calculator should be used as the default method to calculate energy savings for the custom categories if one or more of the following statements is true:

- The project involves installing NEEP-listed cold climate central air source or mini-split units or ENERGY STAR compliant GSHPs at new construction and existing multifamily buildings of greater than three stories.
- The project involves the installation of heat pump equipment other than NEEP-listed cold climate central air source or mini-split units or ENERGY STAR compliant GSHP equipment.
- The project proposes to install a mix of the above heat pump technologies. For example, project scope includes installation of both NEEP-listed mini-splits and ASVRFs.

Under certain circumstances, applicants may bypass using this calculator, opting instead to calculate savings using their own custom bin analysis or energy modeling approach.

²⁸ The New York Standard Approach for Estimating Energy Savings from Energy Efficiency Programs - Residential, Multi-Family, and Commercial/Industrial, known as the Technical Resource Manual (TRM), <https://dps.ny.gov/technical-resource-manual-trm>

Establishing Baselines

Establishing the equipment or system baseline is a necessary step in calculating energy savings for any project. This section defines the types of baselines used by the Program and the general requirements for each baseline type. Baselines will depend on the type and vintage of the facility.

Baseline Equipment Types

Equipment baselines are defined as the type of equipment that would have been installed without the influence of the Program. In other words, the savings baseline should represent customer choice in the absence of the Program, not optimal behavior or policy goals.

Existing Facilities

The default baseline equipment type for the existing facilities is the existing equipment type and efficiency compliant with the minimum code efficiency per ECCNYS.

However, the customer may instead choose to select a baseline in accordance with contemporary construction practice for the area and based on an evaluation of the technology's cost effectiveness. If the applicant selects a baseline that differs from the existing system, the applicant shall provide a separate analysis supporting its selection, showing that the baseline chosen aligns with contemporary construction standards and is cost effective from both an installation and life cycle standpoint.

New Construction and Gut Rehab

For all eligible new construction or gut rehab projects in the Program, the default heating fuel type will be as follows:

Heat Pump Water Heater:

Baseline equipment in new construction shall be a minimally code compliant water heater compliant with the requirements of ECCCNY 2025 R403.5.

Space Heating Heat Pump:

For new construction scenarios, the baseline is assumed to be a minimally code-compliant air-source heat pump of type most likely to be installed at the project site without influence of the Program per 10 CFR 430.32(c)(5).

This default heating baseline may be overridden only with approval from National Grid.

Existing Facilities and Gut Rehab - Heat Pump Projects with Weatherization

The energy savings from the packaged envelope upgrades and heat pump installations are based on the existing baseline. The thermal performance of the building envelope and HVAC system type and efficiency should reflect the current conditions found at the project. The Participating Contractor should provide a separate set of analyses for the envelope upgrades and heat pumps. The documentation should clearly describe the existing building envelope and age, and performance data for the existing HVAC system, such as cutsheets stipulating existing efficiency and boiler combustion tests.

The heat pump analysis should calculate incremental energy savings related to the heat pump equipment based on the upgraded building envelope conditions.

7.7. Additional Requirements for New Construction and Gut Rehab

New Construction and Gut Rehab Eligibility

New construction and gut rehab projects installing heat pump technologies complying with Program requirements are eligible to receive incentives. Incentives will apply to the portions of the scope of work related to heat pump installations. Additional requirements for new construction projects are outlined in this section.

Energy Code Compliance

New construction and gut rehab projects must demonstrate minimum compliance with the most recent applicable local Energy Code, *e.g.*, ECCCNY, or local code in one of the following ways:

- **Prescriptive:** Each discrete component complies with specific requirements.
- **Component Performance Alternative:** Prescriptive approach that allows trade-offs between some components (some can be below code if others are above).
- **Total Building Performance:** Using an energy model, show the entire building's compliance with code. With this method, performance trade-offs are allowed, meaning that some components in the proposed design may be less efficient than the minimally code-compliant like component in the baseline. In these instances, a trade-off must be made to "make up" for a component that does not comply with code. For example, a building owner might choose to install a larger, more energy efficient heat pump system to "make up" for putting in more window area than allowed by the code.

If trade-offs are taken, applicants must provide a side-by-side comparison table between proposed and baseline identifying the areas where trade-offs are made (i.e., building or system elements that do not comply with the prescriptive requirements of the code, elements exceeding requirements, and building elements or systems modeled to provide additional energy savings to offset the non-complying elements). The savings will be calculated based on the proposed heat pump design net of any trade-offs.

Projects that follow the total building performance path and whose design includes trade-offs must set their savings baselines in accordance with minimally code-compliant ECCCNY prescriptive code values. While energy models created per Appendix G or Section 11 of ASHRAE 90.1 may be used for program eligibility, the Appendix G or Section 11 baselines shall not be used to calculate savings.

7.8. Early Replacement Projects

Projects may qualify for early replacement if they meet the criteria summarized below as defined in the TRM.²⁹ For full details, refer to Appendix M in the latest version of the TRM for guidelines for early replacement conditions.

²⁹ New York Standard Approach for Estimated Energy Savings from Energy Efficiency Programs – Residential, Multi-Family, and Commercial/Industrial Measures, ("TRM"). See Appendices M & N.

For existing cooling and/or heating equipment to be eligible for early replacement under the Program:

1. Proposed work must involve a retrofit or substantial improvement to an existing facility and must include the entire portion of the building within project scope.
2. The savings baseline for calculating energy savings must be based on the existing heating and/or cooling equipment type installed at the facility.
3. At the time of application to the Program, the existing equipment cannot exceed its Effective Useful Life (“EUL”) and should have at least one year of its EUL remaining (Refer to Appendix P in the latest version of the TRM for EUL for various heating/cooling equipment).
4. The existing equipment must be fully functioning.

A facility’s existing cooling and heating systems shall be evaluated separately against the criteria noted above to determine whether each individually qualifies for early replacement. One or both systems may be eligible.

Required Project Documentation

In addition to the requirements listed in this Program Manual and any applicable supplementary guidelines issued for the proposed energy conservation measures, early replacement projects must submit the following documentation:

1. Cooling/heating capacity of the existing equipment
 - Supported by manufacturer’s equipment data sheets or industry standard performance testing results for existing equipment
 - Supported by manufacturer’s equipment data sheets or AHRI certificate
2. Age of the existing equipment
 - Supported by original invoice, bill of sale, construction permit, service log, or nameplate date

7.9. Special Circumstance

Special circumstance replacement does not change the incentive category for a project. Qualifying for special circumstance replacement may affect the project baseline, which affects the energy savings calculated for the project. Thus, special circumstance replacements may benefit projects whose incentive rates are calculated on a \$/MMBtu saved basis in accordance with custom categories.

Only projects in existing buildings can be eligible for special circumstance replacement. New Construction projects do not qualify for special circumstance replacement.

There are two criteria for existing cooling and/or heating equipment to be eligible for special circumstance replacement under the Program. Full details on special circumstance replacements are found in Appendix N of the latest version of the TRM.

1. Age Rule
2. Energy Use Rule

Age Rule

1. The savings baseline for calculating energy savings must be based on the existing heating and/or cooling equipment type installed at the facility.
2. At the time of application, existing cooling and/or heating equipment must exceed its EUL by at least 25% (Refer to Appendix P in the latest version of the TRM for EUL for various heating/cooling equipment).
3. If the equipment is determined to be less than 125% of its EUL, it is not eligible for special circumstance extended life treatment regardless of consumption or any other factor.
4. There must be a history of significant repair or replacement with existing equipment.
5. Existing equipment must be fully functioning.

Energy Use Rule

For cases in which the age of the existing equipment cannot be determined relative to 125%, the Energy Use Rule may be considered for eligibility; existing equipment energy consumption must exceed that of the new high efficiency model by at least 35% for chillers, and 20% for all other HVAC types to do the same amount of work.

A facility's existing cooling and heating systems shall be evaluated separately against the criteria noted above to determine whether each individually qualifies for extended life replacement. It is noted that one or both systems may be eligible.

Required Project Documentation

The minimum documentation required for all special circumstance projects is listed below. These requirements are in addition to the requirements listed in the Program Manual and any applicable supplementary guidelines issued for the proposed energy conservation measures.

1. Cooling/heating capacity and performance of the existing equipment:
 - Supported by manufacturer's equipment data sheets or industry standard performance testing results for existing equipment
 - Supported by manufacturer's equipment data sheets or AHRI certificate
2. Age of the existing equipment
 - Supported by original invoice, bill of sale, construction permit, service log, or nameplate date
3. Actual repair cost, including component replacement for at least the past 3 years
 - Supported by invoices or proof of payment
 - Total repair cost must be added and summarized in a document

8. Weatherization Eligibility

This section describes eligibility requirements for weatherization projects including attic cavity insulation, wall insulation, and window replacement.

8.1. General Eligibility

New construction projects are not eligible for weatherization incentives. Prior approval must be obtained before proceeding with any weatherization measures. Additionally, 12 months of fuel usage must be provided with all project applications.

All precautions must be taken by the installer to assess the risk of and mitigate moisture. Where applicable, proper ventilation techniques must be used alongside the installation of insulation.

Finished projects must meet ECCCNY code minimums and must comply with applicable local code requirements regarding insulation and vapor retardants. Insulation projects must meet minimum R-value required by ECCCNY code or applicable to local code requirements, whichever is higher.

8.2. Weatherization Baseline Efficiency for Calculations

For weatherization projects, the baseline efficiency must be equal to minimal code compliant.

8.3. Health and Safety

There must be no history of mold that was not previously remediated or any visible mold contamination. Weatherization contractors should confirm no visible signs of mold and no persistent musty odors are present on site. Any signs of mold must be recorded and rectified prior to installation or fully removed from the program project scope

Confirmation of the disturbance of existing asbestos must be accompanied with proper handling plan.

Contractors must confirm whether proposed scope will disturb lead positive wall paint. If positive or presumed positive, employ elevated containment and cleanup techniques and require an EPA RRP-certified contractor for drilling work. Do not disturb without proper handling plan.

8.4. Attic Insulation

Description

- Installation or upgrading attic insulation to surfaces between the roof and the interior environment.

Existing Conditions

- No existing insulation should be present. However, if existing insulation is found, it must not meet ECCCNY or applicable code requirements.
- If existing insulation is present, photo documentation must be provided clearly showing the type and dimensions of existing insulation. Record R-value of any faced insulation with legible markings.

Installation Requirements

- Air sealing of attic floor and/or sealing must be completed prior to the addition of attic insulation.

- Roofs that cannot support installed insulation with a total roof assembly of R-53 must fill the cavity in its entirety, leaving a 2-inch gap between the insulation and roof deck for air flow and moisture mitigation.
- Roof membrane & parapet walls must be air and vapor sealed before attic cavity insulation is added or at time of insulation.
- The roof must be structurally sound and must not be damaged or leaking.
- No interior space should vent into the attic cavity.
- Ventilation (exhaust and ducts) must be air sealed, boxed, and filled with fire-safe insulation, and have no gaps or areas insulation can fill into.
- The ceiling between the interior space and the attic cavity should not be damaged (e.g., from a previous water leak that was not properly repaired).
- Any plumbing that travels through the attic cavity should be in good repair and free of leaks or visible damage.
- Any electrical wiring, boxes, or fixtures that are not rated for insulation contact must be properly boxed and protected from insulation contact.
- Any exhaust or ventilation ducts should be appropriately air sealed, boxed and filled with fire-safe insulation.
- Insulation installed must not cover/block existing ventilation that exists for moisture, heat and or fire mitigation.
- All cavity insulation must be installed without compression or slumping.

Additional Documentation Requirements

- Methods for addressing air sealing, thermal bypasses, and thermal bridging must be documented with photos, video, or other media to show they were installed before the insulation. This should include plans for and proof of addressing thermal bridging at slab edges, bulkheads, rim joists, and roof-to-wall connections.
- Photo and/or video documentation of any areas to be enclosed should be submitted supplemental to the post-inspection.
- Photos and/or video documentation of roof cavity/activity projects should include probes to document the attic cavity depth, existing cavity insulation, and roof thickness above cavity.
- Photos of the existing conditions and of the completed work clearly show the depth of insulation using a measurement device.
- Photos and/or videos proving the attic floor/top floor ceiling was air sealed before roof/attic insulation was installed.
- Measurements of roof square footage related to dimensions of the roof must be provided. This should be supported by satellite images, floor plans, architectural elevation drawings, pre-inspection findings, etc. Roof areas to be incentivized must exclude parapet walls, vents and penetrations, stairwells, and other areas unable to be insulated.

8.5. Above Deck Roof Insulation

Description

- Above deck roof insulation is the application of insulation on top of the roof deck assembly. Typical insulation material is spray polyurethane foam (SPF) or rigid foam board / vacuum insulation panels (VIP) application. The added insulation reduces thermal conductance and convective losses of the building envelope. Energy and demand savings may be realized through reductions in the building's heating and cooling loads.

Existing Conditions

- No existing roof insulation must be present. However, if existing insulation is found, it must not meet ECCCNYC or applicable code requirements.
- Buildings with accessible attic cavities are not eligible for above deck roof insulation and must install attic cavity insulation to receive incentives.
- The roof must be structurally sound and must not be damaged or leaking.
- Ventilation (exhaust and ducts) must be air sealed, boxed, and filled with fire-safe insulation, and have no gaps or areas insulation can fill into.
- Any plumbing that travels through the attic cavity should be in good repair and free of leaks or visible damage.

Installation Requirements

- Roof areas to be included in incentivized projects must exclude parapet walls, vents and penetrations, stairwells, and other areas unable to be insulated.
- Projects must comply with applicable local code requirements.
- Installed insulation must be Energy Star certified and meet the minimum roof assembly R value of R33ci (high rise buildings) or R 30ci (low rise buildings) required by ECCCNYC code C402.1.3 for high rise, R402.1.3 for low rise or applicable local code requirements regarding insulation and vapor retardants.
- All precautions must be taken by the installer to assess the risk of and mitigate moisture. Where applicable, a code compliant vapor and air barrier must be used alongside insulation installation.
- Roof must be designed to comply with NYS Building code section 1507.10.1 or local relevant code for sloping.
- Any exhaust or ventilation ducts should be appropriately air sealed with fire-safe insulation.
- Any electrical wiring, boxes, or fixtures that are not rated for insulation contact must be properly boxed and protected from insulation contact.
- Installation must not negatively impact the code compliance of adjacent roofing elements.

Additional Documentation Requirements

Existing Conditions

- A pre-inspection is required before area enclosure if the insulated area will be inaccessible after installation.
- Documentation of any or lack of existing insulation in any part of the project area.

- Must submit photos/videos of the existing condition of the material make-up of the roof top and membrane.
- Measurements related to the dimensions of the roof must be provided. This should be supported by floor plans, architectural elevation drawings, pre-inspection, etc.
- Design drawings or cutsheets must include applicable R-value of the existing envelope.
- Photos of the existing conditions and of the completed work that clearly shows the depth of insulation using a measurement device.
- Photos proving the attic floor/top floor ceiling were air sealed prior to above deck insulation installation.
- Submit videos for pitching of roof for adequate sloping, using a laser level and assessing the whole roof and especially around edges. If pitching is inadequate and may cause ponding, this must be rectified in the final roof installation. Submit videos of laser level assessment on site.
- Document any parapet wall heights and clearance of the bulkhead entrance.
- For concrete decking, a drilled section of the roof totaling 6 inches in depth must be performed and documented to determine interior conditions. If infeasible, building drawings should be submitted as supporting documentation. Otherwise, if unknown, default to TRM baseline values to calculate savings.
- R-value of the roof/ceiling insulation R-value may be determined from the NYS TRM Appendix A based on the applicable building type.
- **Heat-Generating Elements:** Confirm with building owner or management regarding potential heat-generating elements (including, but not limited to: recessed lighting elements, wiring, cans, and bulbs) on the rooftop. All such heat-generating elements must be adequately inspected and noted whether they are installed to fire-rated standards. If not, note areas of elements for replacement or proper insulation installation techniques and install appropriate and necessary rated equipment.

New Roof Assembly Documentation

The following information must be provided:

- The existing roof assembly, including insulation type, thickness, and documented R-value.
- The proposed insulation type, thickness, and added R-value.
- The calculated final R-value of the complete roof assembly.
- Product data and ENERGY STAR certification, where applicable.
- Existing-condition photographs, roof drawings, specifications, core samples, or other documentation substantiating the existing assembly.
- A clear assembly calculation demonstrating that the completed roof meets or exceeds the applicable code requirement.

8.6. Wall Insulation

Description

Wall insulation is the application of insulation material to reduce the thermal conductance and convective losses of the building envelope. Energy and demand savings are realized through reductions in the building's heating and cooling loads.

- Only exterior walls are eligible to receive incentives.
- Party/shared walls, rim joists, and basement walls are ineligible for incentives and should be excluded from the scope

Existing Conditions

- No existing insulation must be present to be eligible for this measure.
- Building must have construction in compliance with applicable local codes.
- Walls must be verified as structurally sound to handle additional insulation to wall cavity, avoiding any signs of potential buckling or blowout. Plans must be made to comply with all parts of local and state building codes. Any walls with observed bulging and drywall issues (eg: cracks, bubbling) must be recorded and removed from the project scope.
- Check for any visible air or vapor/moisture leakage points on walls. Any signs of moisture stains must be recorded and removed from project scope.

Installation Requirements

- Must meet ECCCNYC code minimums and must comply with applicable local code requirements regarding insulation and vapor retardants.
- Installed insulation must be Energy Star certified and meet the minimum R required by ECCCNYC code C402.1.3 for high rise, R402.1.3 for low rise or applicable local code requirements regarding insulation, wall construction materials, and vapor retardants.
- Wall cavities that do not have enough depth to meet the code must fill the wall in its entirety and reflect final conditions.
- Drills used to probe and open walls to inject insulation must use dust collection technology (built-in vacuum drill, dust shroud, saw dust bowl).
- Rim joists must be excluded from the scope of work.
- Gaps surrounding uninsulated chimneys directly contacting insulation must be packed with unfaced rock wool, unfaced fiberglass insulation, or fire-rated caulking.
- In-unit windows that are unable to fully close must be repaired, and cracked windowpanes are to be sealed with caulking.
- Photo and/or video documentation of any areas to be enclosed should be submitted supplemental to the post-inspection.

Additional Documentation Requirements

- Photos of the existing conditions and of the completed installation clearly showing the depth of insulation installed with a measurement device.
- Plans for and proof of addressing thermal bypasses and thermal bridging at the following points if insulation is not continuous: slab edges, rim joists, and roof-to-wall connections.

- Measurements related to the dimensions of the walls must be provided. This should be supported by floor plans, architectural elevation drawings, mapping software, pre-inspection etc. Wall areas to be incentivized must exclude doors, windows, fenestration, lobby & common area walls that are not to be insulated such as stairwells.
- Wall cavity probes must be obtained to document existing condition of wall cavity size with ruler measurements.
- Once installation has been completed, contractor must submit photos/videos of the completed work that clearly shows the wall completely insulated at all wall penetrations and sealed for each room insulated.
- R-value of the existing envelope will be determined using the wall insulation R-value from the latest NYSTRM Appendix-A based on the applicable building type.
- Submit photos and record damaged walls (e.g.: inadequate repairs, holes, bulging, bubbling, cracks, prone to buckling) and exclude from insulation scope.

8.7. Window Replacement

Description

- This measure covers the replacement of existing windows with more efficient windows to reduce the rate of heat loss through the window unit.

Existing Conditions

- Existing windows must serve as a barrier between conditioned spaces and outside air. Windows that serve as a barrier between unconditioned spaces and the outside are not eligible.
- Photos and/or video documentation must be provided of the existing conditions of the window.

Installation Requirements

- In all instances, new equipment must perform better than existing equipment and must comply with or exceed ECCCNYC C402.5 U-factor and SHGC requirements.
- For High-Rise buildings (over three floors), windows shall meet the applicable code requirements as shown in the NY TRM:

Climate Zone	Maximum U-Factor		Maximum SHGC	Minimum Visible Transmittance
	Fixed	Operable		
4 & 5	0.31	0.38	0.34	0.41
6	0.26	0.32	0.38	0.44

- At the end of a window project, installers should clean, repair, and square the rough openings of the new window. They should also remove debris, deteriorated materials, and ensure substrate is sound for anchoring.
- Contractors should apply proper cavity air sealing: low-expansion spray foam OR backer rod + sealant. The installer should be able to show insulation continuity around the perimeter of the window with no gaps or voids.

- Air sealing of window cavities must be completed prior to the installation of windows and should be done in conjunction with the window installation process.
- For Low-Rise buildings (three floors or less), windows shall meet the applicable Energy STAR v7 criteria:

Windows

Climate Zone	U-Factor ¹	SHGC ²	
Northern	≤ 0.22	≥ 0.17	Prescriptive
	= 0.23	≥ 0.35	Equivalent Energy Performance
	= 0.24		
	= 0.25	≥ 0.40	
	= 0.26		
North-Central	≤ 0.25	≤ 0.40	

- Contractors must check for any visible leaks or active water intrusion into, inside, or from the window cavity. Any area of water leakage that can permeate into the window cavity, wall cavity or building interior must be recorded and rectified prior to installation.
- Contractors must check surrounding wall/rough opening for rot, structural weakness, or poor substrate adhesion that could compromise installation. They must record and submit any evidence of such areas.

Additional Documentation Requirements

- A National Fenestration Rating Council (NFRC) Number or third (3rd) party tested documentation must be provided for each window.
- Survey of quantities, sizes, and locations of the existing and proposed windows.
- Energy performance specifications (window type, frame type, U-value, gas fill, SHGC, low-e type, and location) for proposed windows.

8.8. Air Sealing

Description

- Air sealing entails the identification and sealing air leaks throughout the building envelope, including gaps around windows and doors, cracks in walls, and other areas where air infiltration or exfiltration occurs. Air leakage sealing products may include, but are not limited to caulking, gasketing, and weather stripping.

Existing Conditions

- Buildings with broken mechanical louvers or missing exterior doors and windows are ineligible.
- Building project scopes in which only door issues are present will be ineligible.
- Eligible existing conditions are cracked and missing window/door frame caulk, missing/poor condition weatherstripping, holes in building exterior from electrical/plumbing penetrations, and leakage at roof/wall intersections and roof hatches.

- Air sealing surveys, at a minimum, must inspect the following common area building components.
 - Stairwells
 - Bulkheads
 - Exterior walls
 - Common area windows and skylights
 - Basement locations, including basement ceilings, exterior basement walls, and doors
 - Repeatable penetrations – including but not limited to, ventilation penetrations, intercoms, dryer exhaust penetrations, garbage chutes, and plumbing penetrations of exterior walls
- New construction and gut rehabilitation work is not eligible.

Installation Requirements

- The exterior envelope, as well as interior walls/partitions between conditioned and unconditioned spaces, should be inspected and all gaps sealed when any insulation installation occurs.
- The following items shall be inspected, and sealing measures may be implemented based upon inspection results:
 - Caulk and weather strip doors and windows that leak air.
 - Repair doors leading from conditioned to unconditioned space.
 - Seal air leaks between unconditioned (including unconditioned basement and attics) and conditioned spaces, to include, but not limited to, plumbing, ducting, electrical wiring, wall top plates, chimneys, flues, and dropped soffits. Use foam sealant on larger gaps around windows, baseboards, and other places where air leakage (either infiltration or exfiltration) may occur.
- Confirm that all air sealing materials used are appropriately adhered to the envelope surface, and no visible air gaps remain. Any excess sealing material should be removed and discarded Includes:
 - Partial sealing of fixed louvers with annealed glass in accordance with code requirements.
 - Exterior door weatherstripping, sweep, and threshold, or full replacement as appropriate.
 - Repair and seal any common area inoperable windows.
 - Basement compartmentalization sealing where necessary.
- Larger openings should either be sealed with expandable low VOC spray foam or foam board.

Additional Documentation Requirements

- A building survey with recorded measure specifications of crack/gap type (Door, Window, etc.), quantity, size/length, floor, location.
- Air sealing surveys must document all air leakage opportunities throughout all common areas.
- Photographic evidence showing current condition of non-compliance and compliance conditions for at least top of building, common areas, and basement.
- Scope of work will detail how to remediate non-compliance by using visual inspection and photographic evidence.

9. Savings Methodology for Weatherization Measures

Savings and incentives for weatherization measures will be calculated using a TRM-based weatherization tool. For qualifying weatherization projects, the current ECCCNY and/or applicable local energy code shall serve as the baseline for determining eligible energy savings.

Please reach out to NGridUNYMF@icf.com for more details concerning the requirements for incentive and savings calculations.