C&I Clean Heat Program

Relaunch 2023

Speakers: Alyki Malliaros, PE – Program Manager

Michael Tierney – Deputy Program Manager



Agenda

- 2023 Clean Heat Program Overview and Updates
 - Program Overview and Process
 - Required Documents
 - How to Apply
- Technology Overview
 - Eligible Technologies
 - Updated Eligibility Requirements
 - Savings Methodologies
- 2023 Incentive Rates
- Participating Contractor Requirements
- Resources
- Q&A



Clean Heat Program Overview



NYS Clean Heat Program Overview

Partnership with NYS

To achieve New York State's goals for a low-carbon future, New York State Energy Research & Development Authority (NYSERDA) and New York energy companies have partnered to offer a range of incentives to make heat pumps more affordable and accessible to residents, small businesses, and commercial and multifamily building owners throughout the State.

What are heat pumps?

 Electricity powered heating and cooling solutions that redistribute heat energy from a source (outdoor air, the ground, or a mechanically heated or cooled fluid loop) rather than producing it.

Relaunch Date?

January 17, 2023

C&I Clean Heat Program Eligibility Overview

Eligible Customer Types

- Commercial and Industrial Con Edison electric utility customers with an active electric account
 - Average billed demand of >100 kW on a rolling 12 monthbasis.
 - New construction projects must apply for new Con Edison electric service*

Eligible Construction Types

- New Construction*
- Gut Renovations
- Existing Building Retrofits



^{*} Only ground source heat pumps are eligible for new construction incentives

C&I Clean Heat Program Eligibility Overview

Project Eligibility

- Heat pump technologies must provide space heating and/or hot water heating
 - Full load heating systems*
- Equipment must be installed after customer receives a Notice to Proceed
- 24-month Installation Timeline
- No Heat Pump to Heat Pump Replacements
- No Cooling Only Heat Pumps

Incentives can cover up to:

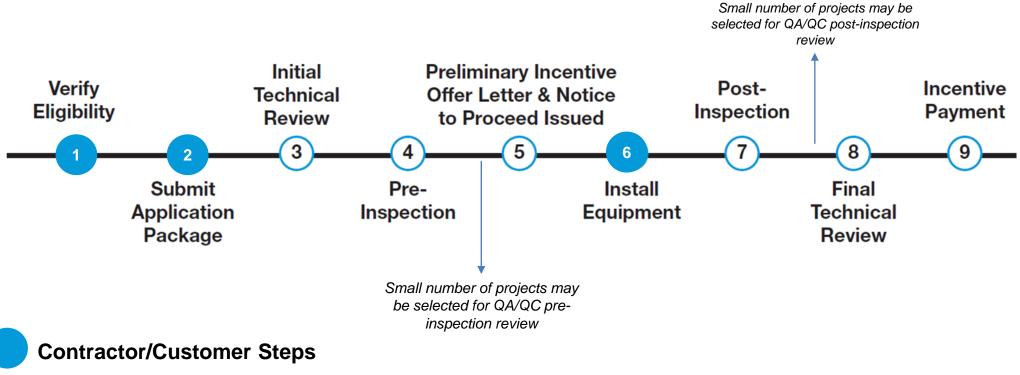
- 100% of individual measure costs
- 50% of total project costs
- Capped at \$1,000,000 for all projects, per account per year.

Eligible technologies include:

- Variable refrigerant flow (VRFs) systems
- Central air source heat pumps
- Ductless mini-splits
- Ground Source Heat Pumps
- Water Heating Solutions
- Packaged Terminal Heat Pumps
- Single Package Vertical Heat Pumps
- Energy Recovery Ventilators / Heat Recovery Ventilators
- Envelope Upgrades
- Advanced Controls for heating electrification
- Other custom heat pump solutions

^{*}Partial load applications may be eligible subject to additional criteria

C&I Clean Heat Process



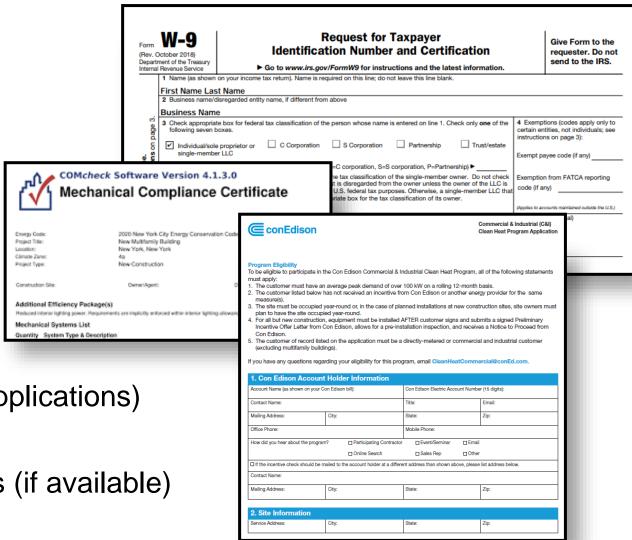
- **Con Edison Steps**



Equipment must be installed after customer receives a Notice to Proceed from Con Edison.

C&I Clean Heat Application Required Documents

- Initial Application Submission
 - Application
 - Project Timeline
 - Building Information
 - W9 Tax Form
 - Statement of Work
 - Cost Estimate for Proposed Work
 - Energy Savings Analysis
 - Load Calculations (space heating applications)
 - Equipment Cut Sheets
 - Permit Documents/Design Drawings (if available)
 - Other Measure-Specific Documents





C&I Clean Heat Application Required Documents

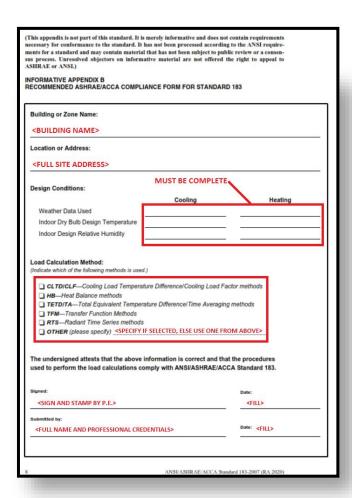
Load Calculations

- ASHRAE 183-2007
- ACCA Manual N 5th Ed
- Other Code Approved Equivalent Computational Procedure

• Examples:

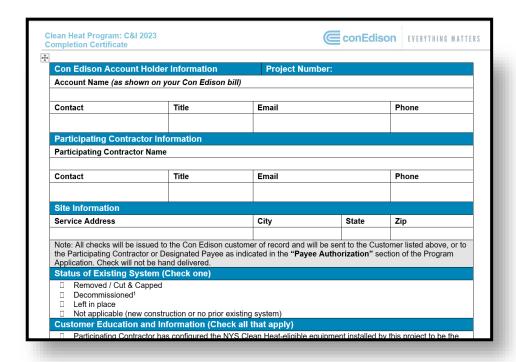
- Wrightsoft
- Trane Trace 3D Plus
- Carrier HAP

	<u>2021 ASHRAE</u>		
City Name	99% Heating Dry Bulb (deg F)	1% Cooling Dry Bulb (deg F)	
New York City - Central Park	17.3	87.9	
New York City - JFK	17.5	86.7	
New York City - LaGuardia	17.9	89.8	
White Plains	12.9	86.4	



C&I Clean Heat Completion Required Documents

- Customer Acknowledgement Form
- Invoices
- Permit Documents / Drawings
- Decommissioning Checklist (if applicable)
- Electric Service Ruling
 - Coordinate with Con Edison Energy Services Required
 - Master Case ID



Energy Services Coordination

- Clean Heat Applicants must open an Energy Services case
- Visit <u>www.coned.com/es</u> to create a new service request
- Con Edison Energy Services will review the application for service adequacy
- Determination of service adequacy will be made, or if equipment upgrades are required to facilitate heat pump installation

- Coordination with Energy Services should happen as early as possible
 - Clean Heat incentive payments will be contingent on receipt of the MCID and a 'service adequate' electric service ruling



Energy Services Coordination is a separate process from submission to the Clean Heat Energy Efficiency Program





How to Apply



- Who can you submit your application documents to?
 - Business Development Managers

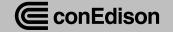
OR

Email: cleanheatcommercial@coned.com



Projects that include ground source heat pumps and air-source heat pumps, will be processed as two separate projects

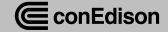
Technology Overview



C&I Clean Heat Program Eligibility Overview

Eligible technologies include:

- Variable refrigerant flow (VRFs) systems
- Central air source heat pumps
- Ductless mini-splits
- Ground Source Heat Pumps
- Water Heating Solutions
- Packaged Terminal Heat Pumps
- Single Package Vertical Heat Pumps
- Energy Recovery Ventilators / Heat Recovery Ventilators
- Envelope Upgrades
- Advanced Controls for heating electrification
- Other custom heat pump solutions



Defining Technology Types

Test Methods:

- AHRI 210/240 Single Package and Mini-Split Heat Pumps (<65kbtu cooling)
- AHRI 340/360 Large Unitary Air-to-Air Heat Pump Equipment (>65kbtu cooling)
- AHRI 1230 Variable Refrigerant Flow Heat Pumps
- AHRI 310/380 Package Terminal Heat Pumps
- Water Source and Geothermal heat pumps are covered under ISO standards

Look up your heat pump make and model on the AHRI directory

3.2.3.2 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 indoor units to serve more than one room at a time. For existing homes and businesses that have no central ductwork, cold dimensional defines.

Program Manual defines

To be eligible for Clean Heat incentives, cold climate MSHPs must be on the NEEP CCASHP Product List and tested under AHRI test standard 210/240.

Defining Technology Types





Air-Source VRF



C&I Clean Heat Pump Sizing

- Design for full-load space heating:
 - Satisfy >90% of building heating load at design conditions, and
 - Existing fossil fuel system is decommissioned, cut and capped, and/or removed.*
- Design for full-load hot water heating
 - Satisfy building's total hot water demand without the need for supplemental heating
 - Existing fossil fuel system is decommissioned, cut and capped, and/or removed.*
 - * Exception for decommissioning for critical facilities

Additional Requirements for Partial-Load Incentives

- Partial load scenarios are defined as:
 - Satisfy ≤90% of building heating load at design conditions (space heating), and/or
 - Requires supplemental heating to meet the hot water demand, and/or
 - Existing fossil fuel system is not decommissioned, cut and capped, and/or removed.
- Partial load scenarios may be eligible if:
 - Energy consumption from the existing heating source (e.g., heating oil, natural gas, steam, etc.)
 must be reduced by the new electric technology or application.
 - Technology must use staged, multi-speed or variable-speed heat pumps
 - Project must displace at least 50% of annual baseline heating consumption or alternative case fossil fuel consumption.
 - Fuel savings cannot include fossil fuel system efficiency savings in savings calculations; the fossil fuel baseline efficiency (including distribution) must equal the existing or upgraded (boiler) system efficiency.

Other Heat Pump Technologies

- Like partial load space heating scenarios, other heat pump technologies may be eligible if:
 - Energy consumption from the existing heating source (e.g., heating oil, natural gas, steam, etc.)
 must be reduced by the new electric technology or application.
 - Technology must use staged, multi-speed or variable-speed heat pumps
 - Project must displace at least 50% of annual baseline heating consumption or alternative case fossil fuel consumption.
 - Fuel savings cannot include fossil fuel system efficiency savings in savings calculations; the fossil fuel baseline efficiency (including distribution) must equal the existing or upgraded (boiler) system efficiency.

Envelope Upgrades

- Exterior: window replacements, window film
- Opaque shell: wall insulation, continuous insulation, window walls, curtain walls, exterior façade
- Air leakage sealing, air barrier continuity
- Roof insulation

Construction type	Eligibility Criteria	Tier 1 Requirement	Tier 2 Requirement	Incentive Baseline
Existing Buildings	Exceed existing condition	> 5%	>30%	Existing condition
Existing Buildings - Gut Rehab*	Applicable code (NYSECC or NYCECC)	> 5%	>10%	Existing condition
New Construction (GSHP only)	Applicable code (NYSECC or NYCECC)	> 5%	>10%	Applicable code (NYSECC or NYCECC)

^{*} If existing equipment has been removed, mechanical systems should default to code baselines



Other Technologies

- Incentives are also installed for the following equipment when installed along side an eligible heat pump:
 - Heating Recovery Ventilators
 - Energy Recovery Ventilators
 - Heat Pump Controls
- Incentive rate will be the same rate given for eligible heat pump

C&I Clean Heat Savings Methodology

Energy Savings Calculations

- Statewide Clean Heat Calculator
- Energy Model
 - Trane Trace 3D Plus
 - eQuest
 - Energy Plus
 - DOE2.1E
 - Trane Trace 700
 - IESVE
 - Open Studio
- Excel Bin Analysis



Statewide Clean Heat Savings Calculator

- Excel based tool to help users determine eligibility and calculate savings and incentives for Category 4, 4A and 10 projects:
 - Cold Climate Air Source Central Heat Pumps
 - Cold Climate Air Source Mini-Split
 - Air-Source VRFs
 - Large Unitary Air Source Heat Pumps
 - Ground Source Heat Pumps
 - Package Terminal Heat Pumps
 - Single Package Vertical Heat Pumps
 - Energy Recovery Ventilators
 - Heat Recovery Ventilators
 - Building Envelope



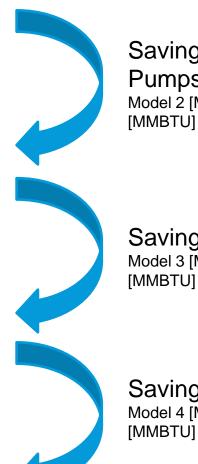
Savings Methodologies: Energy Modeling

- Models to be developed using a "Stacked" approach: savings modeled by starting with the proposed design model, and gradually transforming it into the minimally code compliant baseline design by subtracting the Energy Efficiency Measures (EEMs) one-by-one in the following order:
 - HVAC measure(s)
 - Base load measure(s) such as lighting, process loads, plug loads, etc.
 - Envelope measure(s)
 - Non-interactive measures such as service water heating

Savings Methodologies: Energy Modeling - Stacked Approach

- Model 1: Proposed design
 - Proposed Building envelope including all the envelope improvements
 - Proposed HVAC system type, lighting, ventilation and process loads, etc.
- Model 2: Model 1 with a counterfactual HVAC system
 - Proposed Building envelope including all the envelope improvements
 - Proposed lighting, ventilation and process loads, etc.
 - Counterfactual HVAC system at ECCCNYS code efficiency
- Model 3: Model 2 with a counterfactual Plug Loads
 - Proposed Building envelope including all the envelope improvements
 - Lighting, ventilation and process loads, etc at ECCCNYS code level
 - Counterfactual HVAC system at ECCCNYS code efficiency
- Model 4: Model 3 with an envelope at code level
 - Building envelope at NYSECC code level
 - Lighting, ventilation and process loads, etc. at ECCCNYS code level
 - Counterfactual HVAC system at ECCCNYS code efficiency

.... ETC



Savings from Heat Pumps Model 2 [MMBTU] – Model 1

Savings from Plug Loads
Model 3 [MMBTU] – Model 2
[MMBTU]

Savings from Envelope
Model 4 [MMBTU] - Model 3
[MMBTU]

2023 Incentive Rates



C&I Clean Heat Incentives

Category Number Description	GSHP		ASHP ¹	
	Description	New Construction (\$/MMBtu)	Existing Buildings ² (\$/MMBtu)	Existing Buildings ² (\$/MMBtu)
4	Custom Full Load Space Heating Applications	\$125	\$200	\$120
	Custom Full Load Space Heating Applications + Envelope - Tier 1	\$125	\$200	\$120
4a	Custom Full Load Space Heating Applications + Envelope - Tier 2	\$150	\$225	\$150
6	Custom Hot Water Heating Applications	\$125	\$200	\$200
10	C&I Custom Partial Load Space Heating Applications	N/A	\$100	\$70

¹ ASHP in Table 4 includes all non-GSHP technologies.

Project incentives cannot exceed 50% of the project cost for eligible measure(s) or 100% of each measure cost. Total incentives are capped at \$1,000,000 for all projects, per account per year.

² Existing Buildings include gut renovations.

2023 C&I Heat Pump – Critical Facilities Exceptions

Critical facilities that install an eligible clean heat system serving >90% of the BHL without decommissioning their existing system are still eligible for full load incentives provided the heat pump system is shown to be prioritized.

The following are considered critical facilities:

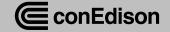
Critical Facilities		
Airports	Fire Facility	Police Facility
Cable Television Facility	Flood Control Structures	Prison/Correctional Facility
College or University	Fuel Transfer/Loading Facility	Radio Broadcasting Facility
Cellular Telephone Facility	Hospital	Schools
Dialysis Facility	Landline Telephone Facility	Television Broadcasting Facility
Electric Utility Facilities	Mass Transit (e.g. tunnels, bridges, ferry terminals, major rail facility)	Wastewater Delivery/Treatment Facility
Emergency Cooling Center	Military Bases	Water Supply System
Emergency Management Office	Natural Gas Utility or Pipeline Facility	
Emergency Medical Facility (Urgent Care)	Nursing Home	
Emergency Shelter	Paramedic and Rescue Facility	



Incentive Payments

- Incentive payments related to a completed project will be issued as follows:
 - The customer will be awarded the full incentive amount OR;
 - The customer may choose to assign the full incentive amount to the Participating Contractor OR;
 - The customer may choose to assign the full incentive amount to a Third Party as designated in the project application and Participation Acknowledgement Form.

Participating Contractor Requirements



Becoming a 2023 Participating Contractor

All contractors (new and existing) must submit an updated Con Edison Participating Contractor Agreement with Attestation Form.

New Participating Contractors must submit the following completed documents via the NYS Clean Heat Participating Contractor Portal:

- Con Edison Participating Contractor Agreement
- NYS Participating Contractor Application
- IRS Form W-9
- Certificate of Insurance Policy (minimum \$1 million)
- Sector-specific documentation (see tables on the following slides)

For additional information on the NYS Clean Heat Program Contractor enrollment, visit <u>Become a Participating Contractor: NYS Clean Heat</u> webpage.

Please note: You must be a registered NYS Clean Heat Participating Contractor to submit projects to the Clean Heat Program.

Participating Contractor Requirements

Sector	Required Documentation	
ASHP installer	US Environmental Protection Agency Section 608 Technician Certification	
	ASHP Manufacturer-sponsored Installation Training Certificate (or comparable)	
	ASHP Manufacturer-sponsored Cold Climate Air Source Heat Pump Sizing and Design Training	
ASHP Designer	An active NYS Professional Engineering license OR active NYS Registered Architect license	

- Effective March 1, 2023, all ASHP Participating Contractors are required to take their preferred manufacturer's version of the ASHP Sizing and Design training and submit documentation of completion. A grace period of three months following the effective date allows additional time for compliance with the existing Participating Contractor training requirement.
- Available trainings are posted on the Clean Heat Connect trainings calendar and updated regularly.
 - Link to the training calendar is <u>here</u>.

Participating Contractor Requirements

Sector	Required Documentation
GSHP Contractor	A copy of a current (and in good standing) International Ground-Source Heat Pump Association ("IGSHPA") accredited installer certificate
GSHP Designer (Category 4)	A current certificate from AEE/IGSHPA OR An active NYS Professional Engineering license OR active NYS Registered Architect license
GSHP Driller (Vertical Loop Field)	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")	Training certificate from a DX Ground Source Heat Pump manufacturer

Resources

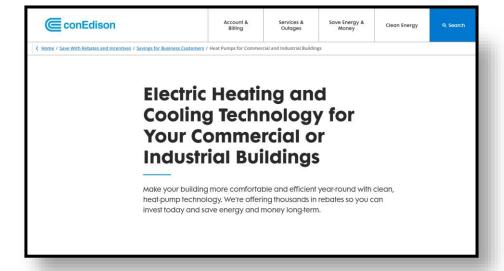


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Con Edison Resources

- New Documentation
 - Con Edison Program Manual
 - Updated Con Edison Participation
 Agreement
 - Updated Statewide Calculator
 - Decommissioning checklist
- Con Edison Clean Heat Website www.coned.com/CleanHeatCommercial
- Learn about all the technologies eligible for the program
- Find Clean Heat Participating Contractors
- Access & Download relevant information





Thank You!



Cleanheatcommercial@coned.com



How long does it usually take following a final inspection by Con Edison for the customer to receive the rebate funds?

There is no specific timeline. Incentive check timeline is determined if the inspection has passed. Please submit accurate close out documentation and make sure that your equipment is installed and operational to ensure the team can process your project as quickly as possible. Any discrepancies in the required project closeout documentation may cause a delay in processing your project and receiving an incentive payment.

Is there any opportunity for receiving progress payments for incentives especially for large geothermal projects?

Progress payments are not available in the C&I Clean Heat Program.

How detailed do the required load calculations need to be? All information might not be available at the time of submission.

Load calculations are a code requirement to ensure proper sizing of the heat pump system. Some assumptions may need to be made to determine building loads. A qualified individual will need to calculate loads. Noting the load calculations are different than energy savings analysis which the program will use to determine savings and incentive.

Can you provide an estimated incentive amount for a 60T system replacing a natural gas boiler?

The incentive amount will be dependent on many different inputs like building type, application, heat pump type, construction type etc. We suggest using the statewide calculator, if applicable, to determine the estimated savings and incentive for your project.

Are Multifamily buildings, including condominiums and cooperatives directed to the C&I program or is there a separate program for those properties?

Multifamily buildings, including condominiums and cooperatives, should be directed to the Multifamily Clean Heat Program to receive incentives. One exception being ground source heat pumps at multifamily buildings, which can be submitted to the C&I Clean Heat Program for processing. It is noted that the multifamily project will be processed in accordance with the multifamily requirements in the 2023 Con Edison Clean Heat Program Manual.

Will receiving tax credits from the Inflation Reduction Act reduce the incentive offered for my project?

No, tax credits from the Inflation reduction act do not correlate with the Con Edison incentive offering.

Are there incentives for gut renovations on ASHP's or is this still considered new construction?

Gut renovations ASHPs do qualify for existing building incentives. For more information, please refer to our website.

Website: www.coned.com/cleanheatcommercial

Is the gas moratorium still in effect in the Westchester Service Area and is the 30% kicker in effect for the clean heat incentives?

This additional 30% incentive is no longer offered in the C&I Clean Heat Program.

For submissions being accepted on first come first serve basis, what is the upper limit monthly allotted? Can you explain more about the acceptance process?

Non-residential heat pumps projects will have an upper limit of approximately \$4M per month. Submissions will be processed on first come first serve basis. If the \$4M per month is reached, your offer letter may be pushed to the next month.

If we have significant simultaneous heating and cooling loads year-round, are heat recovery chillers eligible for incentives?

Yes, heat recovery chillers may be eligible if it meets the other heat pump technology requirements including reduction of fossil fuel consumption by 50% or more.



What is the process for submitting a project for a building that is mixed use? (i.e. Multifamily and Commercial)

If you have a mixed-use building, which ever portion has the dominant building load will be the program you can submit your project to.

If new construction GSHP must apply for new utility accounts, do they need to do the install before they apply for incentives?

To be eligible for C&I Clean heat incentives, you must receive a notice to proceed prior to starting installation of the heat pumps. In the scenario of the installation starting prior to receiving a notice to proceed, the measures would not qualify for an incentive.

When will the 2023 C&I Clean Heat Program application be released?

The application is available on our website. www.coned.com/cleanheatcommercial



What if it is a heat recovery chiller installed on a campus, and would serve one building in a district system (a remote chiller)? Would the 50% fossil reduction requirement be tied just to the building or the campus as whole?

Isolate the areas where the heat pump is serving. If the heat recovery chiller installed on a campus serves one building, the 50% fossil reduction requirement to qualify for partial load would be tied to just that building.

What is the incentive for Partial Load Scenarios?

Ground Source Heat Pumps will receive \$100 per MMBTU.

Air Source Heat Pumps will receive \$70 per MMBTU.

