

HPD AND NYSERDA

ELECTRIFICATION PILOT PROGRAM

Prepared by:



NYSERDA



Agenda

- About the Pilot
- Pilot Process & Steps
- Incentive Eligibility
- The Participation Agreement & Owner Obligations
- The Payment Structure
- Electrification Rider

Scope	Required Scope Items	Targeted Buildings	Cost Covered by Pilot Grant Funding
1: Electrify Hot Water Heating (partial or 100% load)	Heat pumps for DHW Production plus low-flow fixtures, pipe insulation, common area and exterior lighting upgrades, solar where feasible.	Required: Buildings needing DHW system replacement, buildings ≤ 7-stories w/ adequate roof/ outdoor space for equipment Preferred: Substantial Rehabs, buildings that can support solar, buildings containing 10-50 units.	Up to \$2,300/ DU covers incremental costs for electrification of hot water system. See Appendix A for details.
2: Electrify Space Heating and, where feasible, Cooking	Heat pumps for space heating plus building envelope upgrades (roof insulation, high-performance windows, comprehensive air-sealing), lighting upgrades, ventilation upgrades, solar where feasible, and electric stoves where economically feasible.	Required: Substantial Rehabs replacing heating system and pursuing Enterprise Green Communities (EGC or LEED), buildings ≤ 7-stories with adequate roof/ outdoor space for equipment Preferred: Buildings with oil or electric heating, buildings in current/ future flood zone, buildings containing 10-50 units.	Up to \$24,000/ DU covers incremental costs for electrification of space heating, related scope items and electrification of cooking equipment where feasible. See Appendix A for details.

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Design Guidelines

HPD-NYSERDA Retrofit Electrification Pilot

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Building owners receiving HPD financing for rehabilitations of multifamily buildings up to 7 stories that are interested in electrification of Hot Water Heating and/or Space Heating and Cooking may be eligible for funding and technical support through the HPD-NYSERDA Electrification Retrofit Pilot. Projects must meet the criteria listed in the Program Requirements to be considered. Funding will cover incremental costs for electrification and will be granted on a first-come, first-served basis. Funding may be capped on a per-project basis and will be limited to \$1 million per project.



Program Requirements

- [HPD/NYSERDA Retrofit Electrification Pilot: Program Requirements](#)

Program Documents

- [Technical Requirements - Heat Pump for Space Heating](#)
- [Technical Requirements - Heat Pump Water Heater](#)
- [Owner's Participation Agreement](#) (sample)
- [Electrification Rider to Contract](#) (sample)
- [Incentive Award Letter](#) (sample)
- [Incentive Eligibility Letter](#) (sample)

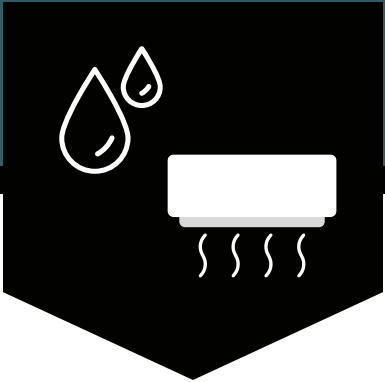
To Apply

Please complete the [Pilot Screening Tool](#) (submission instructions are included on the tool).

Pilot Resources

- [Pilot Process Flow Chart](#)
- [FAQ: Electrification Pilot FAQ Series: What is a Heat Pump](#)
- [FAQ: Electrification Pilot FAQ Series: What is a Heat Pump for Hot Water](#)
- [FAQ: Roof Considerations for Heat Pumps](#)
- [FAQ: Heat Pump System Design](#)
- [Video: Lessons Learned on an HDFC Heat Pump Project](#)

Retrofit Electrification Pilot Structure



HOLISTIC PRE-DEFINED SCOPES

Electrify Hot Water + Solar
and/or
Electrify Space Heating + Efficiency



DIRECT GRANTS TO OWNER

Grants disbursed
alongside
construction
financing money



TECHNICAL SUPPORT

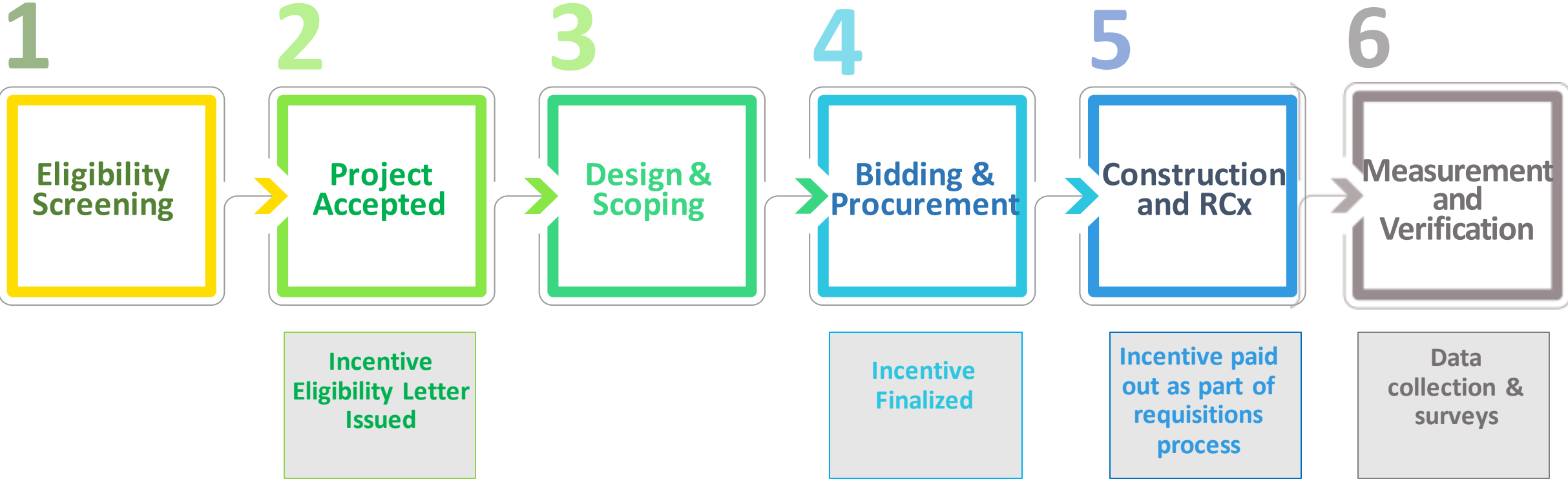
From design
through
construction and
occupancy



CAPACITY BUILDING, EDUCATION

Training design teams,
HPD staff & residents
and publishing best
practices

Pilot Process: Overview



Pilot Process Overview

Electrification Retrofit Pilot: Process Overview			
Step	Step	Documents & Steps	Timing/ Comments
1	Eligibility Screening	Owner submits completed Screening Tool and IPNA to HPD's Technical Assistance Provider (TAP). Instructions available here .	<i>As soon as a project completes an IPNA, they may submit.</i>
2	Project Formally Accepted into Pilot	TAP sends Pre-Incentive Letter and Project Pro-Forma (includes project description, conceptual scope and cost, next steps) to HPD Program for approval and cc's Owner Team. Owner signs Participation Agreement and submits necessary documentation for NYSERDA to encumber funds. Once approved by HPD, TAP sends the Incentive Eligibility Letter to Owner.	<i>Owner will work w/ TAP as needed to develop conceptual electrification design, which will form the basis for HPD's acceptance of project into the Pilot.</i>
3	Design & Scoping	TAP meets with Owner and Design Team 3X or as needed during the design phase to optimize Electrification scope, ensure completeness of bidding and contract documents, and assist Owner and Design Team w/ Con Ed Load Letter and Clean Heat Incentive.	<i>After project is accepted into Pilot, Owner and Design Team will meet w/ TAP at completion of SDs, DD, and prior to bidding.</i>
4	Final Incentive Letter Issued*	Owner sends Approved Bid Documents , completed Electrification Rider (w/ itemized Electrification costs) to TAP for review. Once approved, NYSERDA issues the Incentive Award Letter based on final/ approved scope and incremental cost and encumbers the final award amount.*	<i>2-6 weeks prior to closing - after bids are submitted to HPD or after Cost-Reasonableness Review.</i>
5	Construction & Payment of Incentive	During construction, TAP receives copy of monthly Requisition for review of Electrification scope items. Upon TAP approval, NYSERDA issues funds to owner for completed & approved Electrification work**. Final payment not released until approval of Commissioning Report by the TAP.	<i>In addition to reviewing monthly requisitions, TAP will visit site for a kickoff meeting, a rough-in inspection, and a Substantial Completion inspection.</i>

*NYSERDA reserves right to adjust Incentive if Electrification Scope is modified after the Final Award Letter is issued

**Because incentive covers incremental costs, Electrification Scope items are paid proportionally by NYSERDA & lender

Determining the Incentive

1. **Owner applies** by filling in Screening Tool
2. **Technical Assistance Provider (TAP)** assesses project for electrification and determines which scope(s) the project is eligible for
3. **NYSERDA** calculates:
 1. The Estimated Incentive: based on incremental costs between “business as usual” and the proposed electrification scope
 2. The Maximum Incentive: based on the per/DU incentive or the \$1mm project cap


Incentive is subject to change if the design changes or actual costs are different – up to the allowable per/DU or \$1mm cap.

RETROFIT ELECTRIFICATION PILOT: APPLICATION / SCREENING TOOL		
Project Information		
Project Name	123 Main Street	
HPD Project ID (if known)	12345	
HPD Program		
Architect		
Mechanical Engineer		
Will Project be Sub or Mod F		
Number of buildings in proje		
Estimated Closing Date		
Rental/coop		
Owner willing to pay for hea		
Annual heating/ DHW syste		
Is the project in Con Ed terri		
Building Information		
Property Location		
Street Address		
Borough		
BBL		
Is project in Current/ Future		
Is project in Landmark Zone		
Property Details		
Year Built		
Building GSF		
Is building subject to LL97?		
If yes, are emissions below 2		
# Stories above grade		
Total # Residential Units		
# Studios		
# 1BR apartments		
# 2BR apartments		
# 3BR apartments		
# 4+ BR apartments		
# Commercial Units (if any)		
Description of commercial u		
How is space heated/ who p		
# Community Spaces/ Comm		
Description of community/ c		
How is space heated/ who p		
HPD/NYSERDA Retrofit Electrification Pilot: Eligibility Summary		
PROJECT INFORMATION:		
Date:	1/2/2022	
Project Name:	123 Main Street	
Owner/ Architect/ Engineer:	ABC Architects	
HPD Program	TBD	
Rental or Coop:	Rental	
# Buildings in Project (total)	1	
# Buildings being proposed for Pilot	1	
# Dwelling Units proposed for Pilot	25	
Commercial or Community Space?	0	
Current Heating Fuel Source:	Oil	
Comments or Questions	Use field for anything unusual about project	
SCOPE (Proposed for acceptance into Pilot):		
Pilot Scope being Requested	Scope 1 + 2	
Baseline Scope	Oil to gas/ steam to hot water conversion, decouple DHW, add flue for gas service. New roof, windows, air-sealing	
Proposed Electrification Scope	Mini-split heating, central DHW heat pumps. Induction cooktops. Dunnage, electrical upgrades and patching.	
Proposed Metering for Heating <i>HPD approval req'd for tenant-paid heat</i>	Owner will pay for heating and cooling	
Scope Comments:	M&O will need to be higher to support owner-paid cooling	
HARD COST IMPACTS (Estimated based on proposed BAU and proposed Electrification Scope)		
Estimated Incremental Cost	\$420,000	<i>based on schematic estimate</i>
Estimated Clean Heat Incentive(s)	-\$112,500	<i>estimate only</i>
Estimated Pilot Incentive	-\$307,500	<i>based on current incremental costs</i>
Maximum Available Incentive	-\$657,500	<i>based on per/DU cap</i>
Estimated Net Cost After Incentives:	\$0	<i>based on assumptions above, may change</i>
Estimated Net Cost per DU:	\$0	<i>based on assumptions above, may change</i>
Cost Comments:	Project costs may change as design evolves.	
M&O IMPACTS (Estimated based on proposed BAU and proposed Electrification Scope)		
Current Heating/Hot Water Costs	\$31,034	<i>adjusted to current utility rates</i>
Est. Heating/ Hot Water Costs	\$25,300	<i>based on schematic estimate</i>
Estimated Annual Savings	18%	
Est. Avg. Annual Cooling Costs/ DU	\$170.00	<i>will need to be added to M&O</i>
Est. Maintenance Costs:	TBD	<i>not enough info available</i>
M&O Comments:	These are estimates only. As project evolves, more accurate projections can be determined and used for underwriting.	

Incentive Eligibility Letter


1. **NYSERDA will issue an unsigned Incentive Eligibility Letter (IEL) & Project Proforma**
 - Noting the **estimated incentive amount** based on the preliminary scope.
 - Notes next steps
2. **Once HPD approves project and owner submits required paperwork...**
3. **NYSERDA encumbers funds and issues a signed IEL, indicating formal acceptance into the Pilot.**
 - Funds encumbered for 12 months* or until closing.
4. **Prior to Closing**, and upon receiving all required documentation outlined in the Participation Agreement, NYSERDA will issue a final **Incentive Award Letter** based on final scope and encumber funds for project construction period (i.e., up to 24 months*)
 - Incentive may be adjusted if incremental costs or scope changes – up to the \$maximum per/DU or \$1mm project cap

*Applicant may request extensions as needed.



NEW YORK
STATE OF
OPPORTUNITY.

KATHY HOCHUL
Governor



NYSERDA

RICHARD L. KAUFFMAN
Chair

DOREEN M. HARRIS
President and CEO

Applicant Name
Applicant Title
Company
Street Address
City, State, Zip

Re: NYSERDA Retrofit Electrification Pilot Funding Eligibility Letter
Project Name, Contract #

Dear **Applicant Name**:

Your application to participate in the Retrofit Electrification Pilot (the "Pilot") administered by NYSERDA and the New York City Department of Housing Preservation and Development ("HPD") has been accepted. HPD and NYSERDA have determined that this project may be eligible for an incentive award under the Pilot up to the following amount, dependent upon additional requirements as outlined below, in the [HPD Program Requirements](#), and the NYSERDA Participation Agreement:

Project Main Address	Number of Units	Scope(s) being Implemented	Maximum Incentive
Suttonian	54 Units	Scope 2: Electrification of Space Heating	Up to \$24,000/ DU capped at \$1 million

This incentive amount is based on a preliminary scope that assumes all covered scope items listed in the HPD Program Requirements are included and may be adjusted if scope items therein are not included in the final project scope and/or deemed unnecessary by HPD and NYSERDA. Upon Applicant's submission, and NYSERDA approval, of all requirements set forth in the Participation Agreement, NYSERDA will issue an Incentive Award Letter containing the final incentive amount for this Project. The final incentive amount may be based upon an adjusted demonstration of need as determined by NYSERDA and HPD at the time of HPD project closing, as further described in the Participation Agreement. Together, the Incentive Award Letter and the Participation Agreement will form the final legally binding agreement. NYSERDA has the right to terminate the Agreement if deliverables are not submitted to NYSERDA in accordance with Agreement. NYSERDA will encumber the above incentive funds starting after the signature date of this letter, or until HPD project request an extension to NYSERDA, which NYSERDA will consider eligible for incentives at HPD project closing, the NYSERDA-issuance of funds for the project construction period.

NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY

Signature: _____
Cheryl M. Glanton
Director of Contract Management

New York State Energy Research and Development Authority

Albany
17 Columbia Circle, Albany, NY 12203-6399
(P) 1-866-NYSERDA | (F) 518-862-4091
nyserdanyc.gov | info@nyserdanyc.gov

Buffalo
726 Exchange Street
Suite 821
Buffalo, NY
14210-1484
(P) 716-842-1522
(F) 716-842-0155

HPD/NYSERDA Retrofit Electrification Pilot: Eligibility Summary	
PROJECT INFORMATION:	
Date:	1/22/2022
Project Name:	123 Main Street
Owner/ Architect/ Engineer:	ABC Architects
HPD Program:	TBD
Rental or Occup:	Rental
# Buildings in Project (total)	1
# Buildings being proposed for Pilot	1
# Dwelling Units proposed for Pilot	25
Commercial or Community Space?	0
Current Heating Fuel Source:	Oil
Comments or Questions	Use field for anything unusual about project
SCOPE (Proposed for acceptance into Pilot):	
Pilot Scope being Requested	Scope 1 + 2
Baseline Scope	Oil to gas/ steam to hot water conversion, decouple DHW, add flue for gas service, New roof, windows, air-sealing
Proposed Electrification Scope	Mini-split heating, central DHW heat pumps, Induction cooktops, Dunnage, electrical upgrades and patching.
Proposed Metering for Heating	Owner will pay for heating and cooling
Scope Comments:	M&O will need to be higher to support owner-paid cooling
HARD COST IMPACTS (Estimated based on proposed BAU and proposed Electrification Scope)	
Estimated Incremental Cost	\$120,000 based on schematic estimate
Estimated Clean Heat Incentive(s)	-\$112,500 estimate only
Estimated Pilot Incentive	-\$37,500 based on current incremental costs
Maximum Available Incentive	-\$657,500 based on per/DU cap
Estimated Net Cost After Incentives:	\$0 based on assumptions above, may change
Estimated Net Cost per DU:	\$0 based on assumptions above, may change
Cost Comments:	Project costs may change as design evolves.
M&O IMPACTS (Estimated based on proposed BAU and proposed Electrification Scope)	
Current Heating/Hot Water Costs	\$31,034 adjusted to current utility rates
Est. Heating/Hot Water Costs	\$25,300 based on schematic estimate
Estimated Annual Savings	18%
Est. Avg. Annual Cooling Costs/ DU	\$170.00 will need to be added to M&O
Est. Maintenance Costs:	TBD not enough info available
M&O Comments:	These are estimates only. As project evolves, more accurate projections can be determined and used for underwriting.

Participation Agreement between Owner & NYSERDA

Signed agreement required prior to issuance of signed Incentive Eligibility Letter. Includes:

- **Terms & Conditions**
- **Incentive Amounts:** Preliminary & Final
- **Incentive Payment Structure, noting that:**
 - Funds are encumbered by NYSERDA and are disbursed during construction according to the standard requisitions process
 - TAP must approve Electrification Items on the requisition
- **Documents required to be submitted to NYSERDA prior to disbursement of funds:**
 - Construction Budgets, Electrification Rider, Utility Data Release Forms, Construction Documents, W-9, Clean Heat forms, etc.
- **Owner Commitments:**
 - Clean Heat participation, sharing information & status updates w/ NYSERDA, right to publish project info, access to site
- **Post-Construction Access & Data Sharing**
- **Indemnifications, Liabilities, Warranties**
- **Right to Recapture Funds** if conditions are not met (subject to HPD approval)
- **NYSERDA's Prompt Payment Policy** (30 calendar days from approval of requisition)

This document should be thoroughly reviewed before signing

New York State Energy Research and Development Authority
Building Owner Participation Agreement
Retrofit Electrification Pilot
April 2022

BUILDING OWNER INSTRUCTIONS:

1. **Read the terms and conditions of this Participation Agreement (Agreement).**
2. **Determine your authorized signatory.** Only an authorized signatory for your organization can sign the Agreement. An authorized signatory is an individual who has the ability to contractually bind your organization.
3. **Sign the Participation Agreement.** Once you have identified your organization's authorized signatory, that person must sign the Participation Agreement. Signature on the Agreement creates a legally binding agreement with NYSERDA and the signatory's organization, agreeing to all requirements stated within the Agreement.

Complete the W-9 form.

4. **Send the original copy of the signed and completed Participation Agreement along with the completed W-9 form to NYSERDA attention: James Mannarino** james.mannarino@nyserdanv.gov or such other recipient designated by NYSERDA in writing with a copy to HPD Strategy, 100 Gold Street, New York, NY 10038, recipient designated by NYSERDA.

TERMS AND CONDITIONS

This signed Participation Agreement serves as the binding agreement between the undersigned and the New York State Energy Research and Development Authority (NYSERDA) for participation in the NYSERDA/New York City Department of Housing Preservation and Development (HPD) Retrofit Electrification Pilot (Pilot), in accordance with the terms in the document and the [HPD-NYSERDA Retrofit Electrification Program Requirements \("Program Requirements"\)](#). Under the Pilot, NYSERDA and HPD offer incentives and financing for retrofit designs that will utilize heat pump-based technology for domestic hot water (DHW) heating and/or space heating and cooling, along with complementary energy performance improvements reviewed and approved by NYSERDA's Technical Assistance Provider ("TAP"), HPD and NYSERDA. The TAP will assist HPD and NYSERDA with determination of incentive amounts and review of project submittals and requisitions. The TAP will also assist participants with adapting their scope of work to include electrification scope items and conduct site visits alongside HPD staff for inspections of relevant electrification work. Upon **approval** of the final scope of work by NYSERDA, HPD and TAP, NYSERDA will issue an incentive award letter which will indicate the final incentive amount for the project.

Project Address: _____
Block(s): _____, Lot(s): _____ ("Project")

1. The undersigned certifies that the project identified above is a multifamily, residential building(s) with five (5) or more units that will enter into a regulatory agreement with HPD, and that the project is located within the service territory of one of New York State's investor-owned utility companies and pays into the System Benefits Charge upon receipt of an electric bill.
2. By signing this Agreement, the undersigned ("Owner") certifies that it
 - (a) owns the building(s) comprising the Project which, in whole or in part, will participate in the Pilot pursuant to this Agreement, or
 - (b) is controlled by or under common control with the entity that will acquire the Project and participate in the Pilot, or
 - (c) has entered into a binding agreement to acquire the Project from its current owner and will participate in the Pilot.In the event that with respect to (a) an entity controlled by or under common control with the undersigned, or with respect to (b) the undersigned does not acquire the Project, this Participation Agreement shall be null and void at the option of NYSERDA.
3. **Incentive Amounts:**
 - (a) Estimated Incentive Amount and Incentive Eligibility Letter:

Incentive Payment Structure:

BEFORE CONSTRUCTION: Funds encumbered

- NYSERDA issues a Preliminary Incentive Estimate and encumbers the funds
 - *Incentive can only be used to cover incremental cost of Approved NYSERDA Scope Items*
- During Bidding, the Contractor itemizes all Electrification Scope Items per the Electrification Rider.
 - *This is used to determine NYSERDA's proportionate share of the Electrification Scope (see next slide)*
- Once bids are accepted, NYSERDA issues a final Incentive Award Letter.
 - *The final incentive amount may be revised, if necessary, based on approved bid amount (but may not exceed cap)*

NYSERDA covers a “proportionate” share of the Electrification Scope (because the incentive is based on the incremental cost)

DURING CONSTRUCTION: Funds distributed

- Owner endorses and submits monthly requisitions to the TAP along w/ required AIA forms
- The TAP will review the Electrification Scope items on the requisition, which will be itemized (TAP will also perform 3+ site visits at key construction milestones)
- Once approved, TAP will notify NYSERDA that they can release payment for their proportionate share of the completed work (e.g., 50% of the requisitioned amount of the Approved NYSERDA Scope items)
- NYSERDA will pay owner within 30 days.
- The final incentive payment will be released upon final approval of Commissioning Report.

Participation Agreement should be thoroughly reviewed before signing

Payment Structure & Proportionate Share:

HPD-NYSERDA Retrofit Electrification Pilot: Electrification Scope Breakdown

PROJECT:	123 Main Street	HPD PROGRAM:	HPD PROGRAM
ADDRESS:	123 Main Street	DATE:	3/15/2022
CONTRACTOR:	xyz contracting company	TOTAL ELECTRIFICATION COST:	\$2,000,000.00
HVAC SUBC:	all air and stuff	NYSERDA INCENTIVE:	\$1,000,000.00
		NYSERDA SHARE	50%

Determining
"Proportionate"
share

Splitting out
Proportionate
share on the
requisition

Electrification Scope: Cost Breakdown Worksheet (items in green are used as example)						50%
Item #	Description	Qty	Units	Unit Cost	Sub-Total	% of Scope Covered by Incentive
Heating System:						
	Supply & Install ASHP System	50	each	\$30,000	\$1,500,000	\$750,000
DHW System:						
	Supply & Install DWH System	1	each	\$50,000	\$50,000	\$25,000
Electrical Work (Service & Distribution related to Heating & DHW only)						
	Upgrades to each apartment	50	each	\$8,800	\$440,000	\$220,000
Structural Work (related to Heating & DHW only)						
	Dunnage on Roof	1	allowance	\$10,000	\$10,000	\$5,000
Total Cost:					\$2,000,000	\$1,000,000

The Electrification Scope must be itemized on the Bids & Requisitions

Requisition 1		
% complete	Total Being Requisitioned	NYSERDA's proportionate amount
Heating System:		
25%	\$375,000	\$187,500
DHW System:		
10%	\$5,000	\$2,500
Electrical Work (related to Heating & DHW only)		
50%	\$220,000	\$110,000
Structural Work (related to Heating & DHW only)		
10%	\$1,000	\$500
Sub-total	\$601,000	\$300,500
% Retainage	10%	
\$ Retained	\$60,100	\$30,050
Paid Amount	\$540,900	\$270,450.00

Payment Structure & Proportionate Share – live example:

150-200	VRF SYSTEM	
	VRF EQUIPMENT & MATERIAL	552,000
	REFRIGERANT PIPING & INSULATION	82,000
	CONDENSATE PIPING & INSULATION	32,000
	CONTROLS / WIRING	65,000
	TESTING & COMMISSIONING	25,000
	LABOR	524,000
	TOTAL VRF SYSTEM	1,280,000
160-100	POWER WIRING FOR VRF SYSTEM	100,000
	ELECTRICAL SERVICE UPGRADE	
160-100	ELECTRICAL SERVICE UPGRADE	275,000
060-200	GENERAL CONSTRUCTION	15,000
050-500	DUNNAGE EQUIPMENT SUPPORTS	50,000
160-100	PERMIT FEES	5,000
	TOTAL ELECTRIFICATION COST	1,725,000

The Electrification Scope must be itemized on the Bids & Requisitions

For this project, the proportionate share is 58%

Electrification Rider between Owner & Contractor:

Ensures contractor acknowledges NYSERDA's grant requirements, including:

- **Clean Heat Program Compliance:** Clean Heat Contractor & Seeking Incentive
- **Technical Requirements:** Project must meet all technical requirements
- **Requirements for System Maintenance & Use:**
 - Optional maintenance contract must be offered,
 - Staff & tenant training must be provided
- **System Warranties:** 10-years parts, 1-year labor
- **Required Access, Site Visits & Inspections:**
 - Minimum of 3 TAP site visits - at kickoff, rough-in, completion (others if/ as needed)
- **Incentive Payment Structure:**
 - NYSERDA pays a proportionate share of all Electrification Scope Items
 - Paid through the standard requisition process (see previous slide)
- **Bidding Requirements:**
 - Contractor must itemize all Electrification Scope Items in a format that consistent with the payment structure

This document must be signed by the GC before closing

HPD RETROFIT ELECTRIFICATION PILOT: ELECTRIFICATION RIDER TO CONTRACT between Owner and Contractor

General:

This Rider ("Rider") is annexed to and made a part of the Agreement ("Agreement"), dated _____, between _____ ("Owner") and _____ ("Contractor") for certain work described therein ("Work") at _____ ("Project").

The Agreement, this Rider and the documents listed in the Agreement shall be amended without the prior written consent of the Owner, Preservation and Development.

Contractor acknowledges

Owner has obtained a grant for the Electrification Work (the "Project") and agrees to meet certain requirements.

Con Edison Clean Heat Program

- Subcontractor installing the Clean Heat Program and be a Participant in the Clean Heat Program ("PIOL").
- The TAP can assist the Contractor in obtaining this PIOL.
- The Clean Heat Incentive will be used for this project, resulting in a reimbursement of this PIOL amount.

General System Installation

- Systems and system components shall conform to all applicable specifications and installation regulations, codes, licenses, and State Environmental Conservation Code and State Energy Conservation Code and all applicable State and Federal laws.

Technical Requirements:

- In addition to items listed in the Agreement and the Agreement and by HPD's loan, the Contractor shall provide a proportionate share of the Incentive Amount by itemizing all items in the requisition not covered by NYSEDA.
- IMPORTANT: The NYSEDA

Equipment Maintenance & Use:

Contractor shall provide the following set up and maintenance items:
• Preset all thermostats according to set points and limits outlined in The Requirements.

- Provide an optional minimum standard maintenance contract.
- Participate in all required documentation for equipment (e.g., manuals, diagrams, etc.).
- Participate in all required documentation for equipment (e.g., manuals, diagrams, etc.).
- Provide a detailed maintenance plan including maintenance of any start-up/commissioning systems or systems.

System Warranties:

- Contractor shall provide:
 - o 10-year warranty on equipment
 - o 1-year warranty on labor

Access, Site Visits & Inspections:

- o The TAP will coordinate with the Contractor and the Engineer:
 - Comment on drawings
 - Open Work Orders
 - Final (submit)
- o The TAP shall be present at all site visits.
- o The TAP shall be present at the approved rough-in and completion.

Incentive Payment Structure:

NYSEDA funds shall be used to pay for the Scope Items, as appropriate, and the Electrification Work. Owner acknowledges that the Contractor shall be responsible for the proportionate share of the Incentive Amount by itemizing all items in the requisition not covered by NYSEDA.

Once per calendar month, the Contractor shall submit an application for disbursement of the Incentive Amount for G702 and G703 form.

"Requisition"). The TAP will review and advise HPD and NYSEDA on whether to approve or reject the Approved NYSEDA Scope items on such Requisition and the amount of payment requested in connection therewith. If a Requisition is approved by HPD and NYSEDA, NYSEDA will disburse such amount to Owner. The NYSEDA incentive will be paid in accordance with the Prompt Pay Policy attached as Exhibit B. The NYSEDA incentive may be subject to retainage to the extent disbursements of the HPD loan or a senior loan to the Project are subject to retainage. Owner acknowledges that a Senior Lender may require that the NYSEDA incentive be serviced by Senior Lender or its designee in the same manner as HPD loan funds or Owner's equity investment in the Project, subject to the laws and regulations that govern NYSEDA funds and procedures.

Owner shall comply with the requirements regarding disbursements in the HPD financing documents in order to requisition for HPD loan proceeds for the HPD portion of the Approved NYSEDA Scope.

Owner acknowledges that any changes to the Approved NYSEDA Scope must be reviewed and approved by HPD, NYSEDA and Senior Lender, if any, and if so approved, NYSEDA may revise the Final Incentive Amount if a portion of the Approved NYSEDA Scope is removed or changed.

The final NYSEDA payment will not be approved until the final Commissioning Report has been approved by the TAP.

Bidding Requirements:

The contractor is required to separately itemize all costs specifically related to the project's Approved NYSEDA Scope so that the NYSEDA portion of the Electrification Scope can be identified and appropriate payments can be made, per the Payment Structure above. The following items must be itemized in the contractor's bid and on all subsequent payment requests:

- The total amount of the Approved NYSEDA Scope
 - o This amount will be compared to the total NYSEDA Incentive to establish NYSEDA's proportionate share.
- Itemized costs for the following (must equal the total amount of the Approved NYSEDA Scope):
 - o The anticipated Clean Heat Customer Incentive from the Preliminary Incentive Offer Letter
 - o Supply and Install of all Space Heating systems ("Systems") where applicable including all components, including interconnecting refrigeration piping, pipe insulation, and controls, and testing & commissioning of System, including refrigerant charging and refrigerant leak testing/prevention, and training of the owner in the controls.
 - o Supply and Install of all Hot Water systems ("Systems") where applicable including all components, including interconnecting refrigeration piping, water piping, pipe insulation, and controls, and testing & commissioning of System, including refrigerant charging and refrigerant leak testing/prevention, and training of the owner in the controls.
 - o Electrical and Plumbing work required specifically for the installation of these Systems (e.g., line/ low voltage wiring, condensate lines, etc.). This includes breakers for the heat pumps, power wiring from the panel to the heat pump, the disconnect at the outdoor unit and the convenience receptacle required by code near the outdoor unit.
 - o Electric Service and Distribution Upgrades associated with the Systems. This includes costs for Con Ed to upgrade the service to the building, if any; the cost of new electric panels or subpanels, if required; and the cost of new feeders and conduit to panels, if any. This does not cover breakers for the heat pumps, or power wiring from the panel to the heat pump itself, the disconnect at the outdoor unit, and the convenience receptacle required by code near the outdoor unit (which are to be included in the item above).
 - o Dunnage, supports, or other structural or aesthetic material and labor required specifically for installation of the Systems

Technical Documents & Design & Construction Checklists:

TAP will be inspecting to ensure these requirements are followed during design & construction

Hot Water Heat Pump

REQUIREMENTS

The following practices shall be followed for all projects. These are in addition to all requirements outlined in NYC codes, zoning, NYS/ConEd Clean Heat Program Requirements, and the HPD specifications. In some cases, these requirements are more stringent than required by codes or by the NYS/ConEd Clean Heat requirements and shall be followed.

Hybrid/Packaged Systems (<120 gal)

- Must meet or exceed Energy Factor (EF) or Uniform Minimum 10-year warranty or
- Alternate for units with > 30% COP => 4.2
- Minimum 3-year tank
- Provides visual notification of Design requirements
- Locate the HPWHs in not be an issue
- Consider locating HP other systems (e.g., boiler)
- Size the hybrid HPWH capacity of the electric
- Ensure the air temperature at 40°F or higher all year manufacturer require
- Set water storage tank
- Installation requirements
- Spaces from which H
- Air intakes must be at
- For ducted installation
 - Ducts must not
- Cold air exhaust from areas where the cold
- Get the units to operate
- Refer to the Systems C

Split Systems

- Must meet or exceed Energy
- Performance:
 - Utilize CO₂ (R744) ref

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HPD ELECTRIFICATION PILOT: TECHNICAL REQUIREMENTS

HPD-NYSERDA Retrofit Electrification Pilot: TECHNICAL REQUIREMENTS

Heat Pump Technical Requirements

April 2022

The following practices shall be followed for all projects. These are in addition to all requirements outlined in NYC codes, zoning, NYS/ConEd Clean Heat Program Requirements, and the HPD specifications. In some cases, these requirements are more stringent than required by codes or by the NYS/ConEd Clean Heat requirements and shall be followed.

Split Systems

- Must meet or exceed NYS Clean Heat requirements.
- Minimum 10-year parts warranty, 1-year warranty on compressor
- Design requirements
 - System shall be designed to meet Clean Heat => 90% of building load).
 - Locate outdoor units to minimize length of outdoor piping
 - Electric resistance backup shall not be used
 - Heat pump shall have a variable speed compressor
 - Size the heat pump to the heating load.
 - Electric resistance backup heat is not permitted
 - Consider best practices as outlined in HPD/NYSERDA best practices
 - Roof Considerations for Heat Pumps
 - Electrification Space Strategies

These can be found at the following web site:
<https://www1.nyc.gov/site/hpd/services-and-operations/electrification-pilot.page>

- Comply with all relevant codes and standards provided at the above web site when available
- Consider design to use gravity drainage of condensate if possible, pumps are acceptable if gravity drainage is not possible, ensure that drainage is located such that it does not enter living spaces or other appurtenances below. Condensate shall be through indirect waste connection by means of an air gap.
- Size systems to an indoor design heating temperature of 72 degrees, as allowed by the Energy Code. Note that NYC requires that systems be capable of ensuring that the indoor temperature is at least 68 degrees.
- Size systems to a design outdoor temperature of 13 degrees.

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NEW YORK STATE
NYSERDA

Taitem
Independent Contractor to NYSERDA

HPD Drawing Review Comments		
Technical Requirements	Taitem CD Review DATE	Team Response
	Drawings dated:	Date:
Split Systems: Must meet or exceed NYS		
Minimum 10-year parts warranty, 1-year		

Project Info					
Project Name:					
Building Address:					
Inspection Dates					
Kickoff Meeting					
Construction Inspection					
Final Inspection					
Number	Equipment	HPD Stage	Category	Objective / Task Description	
6.1	Condensate	Construction / Final Inspection	Installation	Observe condensate line where it terminates in either a domestic drain or terminate onto another heat pump. Do not cause slips if condensate freezes. No indication of condensate line leakage. Condensate tubing shall be minimum 1/2" and corrugated tubing shall not be used. Note that code-approved materials for condensate disposal does not include plain steel pipe. Generally not be used for condensate. Fastening of condensate tubing shall	

Further Resources: Pilot Webpage


Design Guidelines

HPD-NYSERDA Retrofit Electrification Pilot

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Building owners receiving HPD financing for rehabilitations of multifamily buildings up to 7 stories that are interested in electrification of Hot Water Heating and/or Space Heating and Cooking may be eligible for funding and technical support through the HPD-NYSERDA Electrification Retrofit Pilot. Projects must meet the criteria listed in the Program Requirements to be considered. Funding will cover incremental costs for electrification and will be granted on a first-come, first-served basis. Funding may be capped on a per-project basis and will be limited to \$1 million per project.



Program Requirements

- [Joint HPD/NYSERDA Retrofit Electrification Pilot: Program Requirements](#)

<https://www1.nyc.gov/site/hpd/services-and-information/hpd-nyserda-retrofit-electrification-pilot.page>

Program Documents

- [Technical Requirements - Heat Pump for Space Heating](#)
- [Technical Requirements - Heat Pump Water Heater](#)
- [Owner's Participation Agreement](#) (sample)
- [Electrification Rider to Contract](#) (sample)
- [Incentive Award Letter](#) (sample)
- [Incentive Eligibility Letter](#) (sample)

To Apply

Please complete the [Pilot Screening Tool](#) (submission instructions are included on the tool).

Pilot Resources

- [Pilot Process Flow Chart](#)
- [FAQ: Electrification Pilot FAQ Series: What is a Heat Pump](#)
- [FAQ: Electrification Pilot FAQ Series: What is a Heat Pump for Hot Water](#)
- [FAQ: Roof Considerations for Heat Pumps](#) (coming soon)
- [FAQ: Heat Pump System Design](#) (coming soon)
- [Video: Lessons Learned on an HDPC Heat Pump Project](#)

Additional Resources

DOB Resources:

- [Design Professional Requirements: Mechanical](#) (information about codes and zoning around mechanical equipment)
- [Registrant Project Requirements: Mechanical Work and Inspections](#)
- [DOB Now: Build Mechanical Systems \(MS\) Resources](#)
- [2020 Energy Conservation Code](#)
- [New York City Construction Codes](#)

Zoning Resources:

- [Zoning Resolution](#)

DEP Resources:

- [Noise Control for Building Exterior Heating, Ventilation, and Air Conditional Guidance Sheet](#)

NYS Clean Heat Program

- [About the NYS Clean Heat Program](#)

Assignment of Incentive

If needed, NYSERDA can coordinate with project lender(s) on an 'Assignment of Incentive' agreement.

- Such an agreement assigns incentives to the lender in the event of owner/developer default, so the electrification scope could still be implemented.
- Owners and/or lenders are encouraged to coordinate as soon as possible with NYSERDA on the Assignment letter, for NYSERDA to review and execute prior to closing.