

Thermal Energy Networks: Advancing Policies and Market Support in New York State

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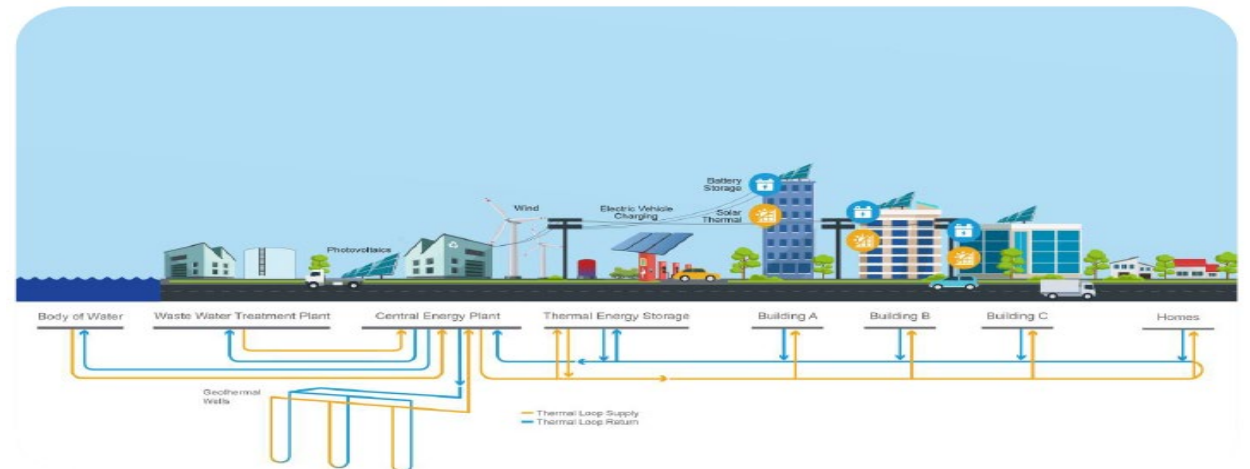
2024 NASEO Conference, October 1, 2024

Key NYS Policy Drivers

CLCPA Scoping Plan: “There are more than 6 million buildings in New York State. More than 200,000 buildings per year would need to be decarbonized for the next 30 years to address the entire building stock by 2050.”

NYSERDA Strategic Outlook 2024: NYSERDA’s strategies are evolving to support market transformation and effective scaling of building retrofits across the state, including exploring solutions that can work block-by-block and community-by-community.

- **2019 Climate Leadership and Protection Act (CLCPA):** Mandates 85% reduction of GHG emissions vs. 1990 levels, which will require upgrading almost every building in NYS (Buildings sector ~30-40% of emissions)
- **Fall 2021: Draft Scoping Plan** to achieve CLCPA released: Recommended a series of building decarbonization strategies, including ways to expand deployment of TENs
- **July 2022 UTENJA Act** passed: Requires NYS utilities to pilot thermal energy networks and NYS to develop a regulatory framework for these systems, with an explicit linkage to the gas transition



UTENJA Requirements Summary

- Required 7 largest utilities to propose between 1-5 UTEN pilot projects within 3 months, with at least one located in a Disadvantaged Community (DAC)
- Required the NYS Public Service Commission to initiate a proceeding and develop rules/regulations within 2 years
- Requires utilities to establish labor agreement to focus on transitioning utility workers for the operation of UTENs
- Amended provisions of the Public Service Law

Key Milestones since 2022

- **July 2022** – Utility Thermal Energy Network and Jobs Act Signed into law
- **January 2023** – Summer 2023: Utility Pilot Project INITIAL Proposal Filings
- **September 2023** – Commission Issues Guidance Order
- **December 2023** – Utility Pilot Project FINAL Proposal Filings
- **April 2024** – Staff Issues letters advancing 9 projects to Stage 2 and requiring 3 to address deficiencies
- **July 2024** – Commission Issues Initial Rules Order
- **Fall 2024** – Report on UTENJA performance metrics
- **2025** – Utility Final UTEN Pilot Project Engineering Design and Customer Protection Plans to be filed

Advancing Policies: Summary of UTEN Pilot Proposals

Utility / Location (+ for DAC)	Description	Current Budget (\$M)
Con Ed – Chelsea+	Dense urban; utilization of waste heat recovery as thermal resource; serving public housing (NYCHA); 2-pipe ambient configuration	89.0
Con Ed - Mt. Vernon+	Geothermal borefield-centric system; LPP retirement; mixed use inc. City-owned fire station & rec center; 2-pipe ambient configuration	82.6
Con Ed – Rockefeller	Dense urban including three existing high rise commercial buildings; waste heat from excess heat from server loads, recovered steam condensate heat, chiller plants and cooling towers; commoditizing waste heat	83.8
CHGE – Poughkeepsie+	Geothermal borefield-centric system; large community support for Y.O.U. (new construction community center as anchor customer); utility lease agreement for borefield site; 1-pipe ambient configuration	24.9
KEDNY – Brooklyn+	Geothermal borefield-centric system to serve public housing (NYCHA) and comm buildings; ww recovery facility and/or subway dewatering possible source/sink for future TEN; 1-pipe ambient configuration	107.7
NiMo – Troy+	Two single-pipe ambient loops supplied from boreholes; located in center of the City (including several older buildings); third party ownership of thermal resource; strong support from City who views TEN as a part of their long-term City planning	52.7
NiMo – Syracuse+	Wastewater treatment outfall as thermal resource, mixed use new construction, UTEN identified as a non-pipe alternative (NPA) due to the avoidance of the new development from connecting to the gas system; 2-pipe ambient configuration	132.9
NFG – Buffalo+	Urban area; two thermal resources: geothermal borefield serving apartments and wastewater heat recovery serving three municipal buildings; distribution system is hybrid, includes a central GSHP system (4-loop) and existing hot water district heating system	43.4
NYSEG – Ithaca+	Suburban area; open-loop ground water system; company ownership of customer equip; three interconnected loops; 1-pipe ambient configuration	42.5
RG&E – Rochester+	Geothermal borefield-centric system; residential and non-residential; 1-pipe ambient loop	39.5
O&R – Haverstraw+	Geothermal borefield-centric system to serve new construction and existing buildings of mixed use; new construction will eliminate new gas; 2 separate ambient loops, each loop is a 1-pipe ambient configuration	46.2

Process Summary and Next Steps

- 7 utilities have proposed 11 pilots
- 9 have advanced to Stage 2 design
- Stage 2 design/engineering submissions expected Q1 2025.
- Stage 3 includes customer enrollment and protection plans, and construction
- Stage 4 focuses on pilot operations
- Estimated 1-2-year timeframes from approval to initiation of construction

Exempting Small-Scale TENs

- Exempt if: 1) not owned by a utility, operates on private property owned by a single entity and does not provide thermal energy to tenants for a fee; or 2) system was in operation prior to the Act (July 5, 2022)
- Leverage learnings from existing district energy systems to inform future deliberations on regulatory model that will support thermal energy networks at scale.
- Encourage rather than stifle innovation; projects can petition to seek exemption if shown that adequate consumer protections are in place and the provision of safe, adequate, and reliable service at just and reasonable rates will be achieved.

Creating Fair Market Access

- Thermal energy resources may be owned and operated by non-utility entities.
- Principles to guide incorporation of 3rd party resources – cost-effective/reliable relative to alternatives; no compensation for injecting beyond system need, creating imbalance, or increasing overall emissions

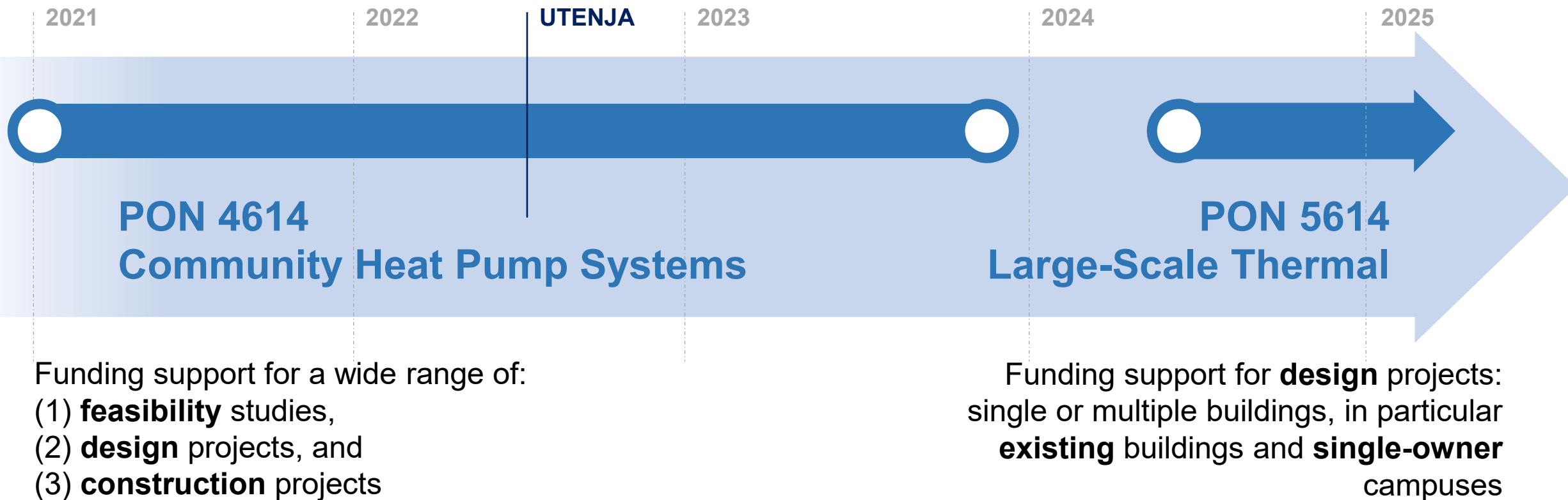
Encourage Third Party Participation & Competition

- Requirements for competitive bidding

Promotion of Training & Transitioning of Utility Workers

- Utilities to indicate status of labor agreements; describe plans to support local workforce development; and work with the relevant unions to develop necessary metrics on jobs that will be created by each project

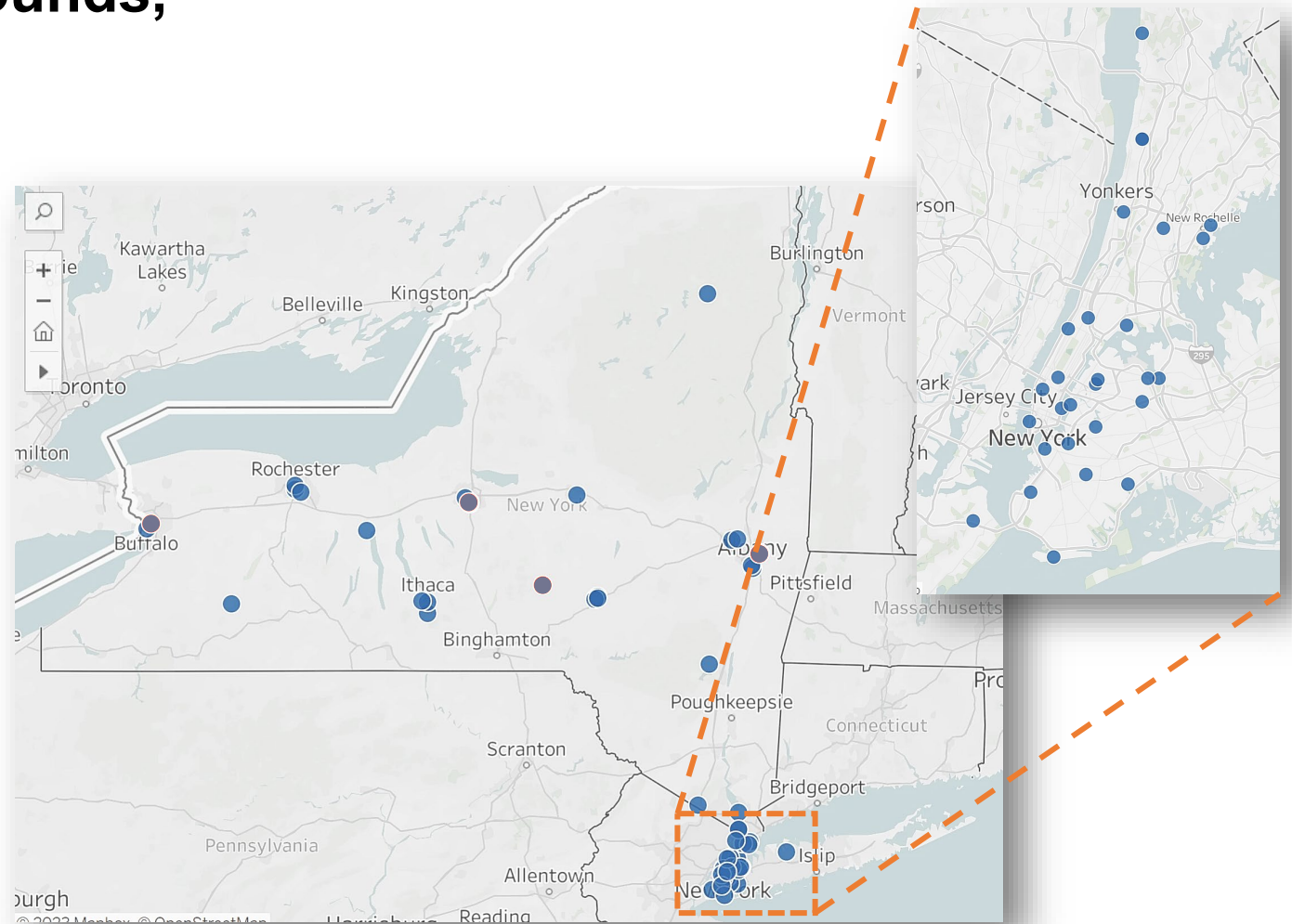
NYSERDA has been supporting the development of thermal energy systems primarily through two programs: PON 4614 and its successor, PON 5614



PON 4614 included **10 funding rounds**, from Q1 2021 to Q4 2023:

Funded 50+ project sites:

- **48** Category A: Feasibility
- **12** Category B: Design
- **6** Category C: Construction

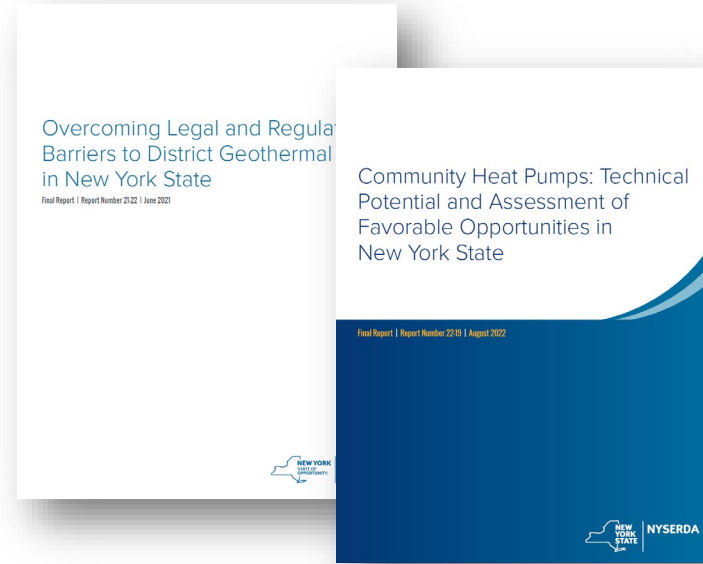


More information available at:
<https://www.nyserra.ny.gov/All-Programs/Large-Scale-Thermal/Winners>

Municipal charettes

With support from NYSERDA, Pace Energy & Climate Center, organized 12 learning events from Q1 2023 through Q4 2024.

The charettes brought together municipal officials, NYSERDA staff, and experts in thermal energy systems to discuss challenges and best practices around TENs development.



Sharing research

NYSERDA has shared research supporting the PON 4614 process, including reports on TENs opportunities in NYS.

Sharing learnings

NYSERDA has shared reports from many of the PON 4614 winners, making the learnings from these feasibility, design, and construction projects available to the broader public.



Advancing low-carbon TENs PON 5614: Large-Scale Thermal



Provides funding for replicable large-scale thermal system **design projects** that significantly reduce GHG from heating, cooling, and DHW primarily in existing buildings in NYS

\$10 million is available in two funding rounds:

Round 1: due Sept. 26, 2024

Round 2: due Jan. 30, 2025

Ongoing Feasibility support also available through FlexTech

Single Building	Multiple Buildings
	
150,000 sq. ft. Minimum conditioned space	250,000 sq. ft. Minimum conditioned space
Maximum NYSERDA funding per award: up to \$500,000 (existing buildings) or \$300,000 (new construction)	
Required proposer cost-share: at least 50% of total project cost	

Priority Sectors



Colleges & Universities



Medical Campuses



Residential Complexes



Large Commercial Buildings



Multi-owner Nodes

(such as downtown corridors)

Thank you!

For more on PON 5614:

<http://www.nyserda.ny.gov/All-Programs/Large-Scale-Thermal>

(or scan QR code)



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