March 9, 2026

Hon. Michelle L. Phillips, Secretary,
New York State Public Service Commission,
Three Empire State Plaza,
Albany, New York, 12223-1350

Dear Secretary Phillips,

Re: Comments regarding final UTEN Pilot Project Engineering Design and Customer Protection Plans in Case 22-M-0429

The Building Decarbonization Coalition (BDC), the Alliance for a Green Economy (AGREE), and the Alliance for Clean Energy New York (ACE NY). respectfully submit this comment in response to the Public Service Commission's notice of proposed rulemaking, considering whether it is in the public interest to authorize the relevant utilities to proceed to Stage 3, Construction, for the Utility Thermal Energy Network (UTEN) pilot projects with completed Stage 2 filings, specifically the Ithaca Pilot Project, filed by New York State Electric & Gas Corporation (NYSEG) on November 7, 2025 and the Troy Pilot Project, filed by Niagara Mohawk Power Corporation d/b/a National Grid (National Grid) on December 18, 2025.

Background

In 2022, the State legislature passed and Governor Hochul signed the Utility Thermal Energy Network and Jobs Act (UTENJA). UTENJA authorizes and mandates each of the seven major investor-owned utilities to pilot thermal energy networks (TENs) in their territories. It also requires the Public Service Commission (PSC) to inform a regulatory process and thermal utility model that aligns with the climate justice and emissions reductions requirements within the Climate Leadership and Community Protection Act (CLCPA). UTENJA's goals include: generating technical, operational, and regulatory lessons necessary to establish a framework for utility-scale thermal energy service; timely construction to rapidly develop a well-trained, highly-skilled workforce; and promoting good jobs for local residents—especially in disadvantaged communities—in the growing building decarbonization sector.

UTENJA took effect in July 2022 and required the PSC, within six months of the effective date, to determine "whether it is in the public interest to approve or modify such pilot thermal energy network projects and shall issue an order directing each gas, electric or combination gas and electric corporation to implement such proposed or modified pilot thermal energy network projects." The law's intent was to move pilots forward quickly, subject to modification from the PSC, to achieve lessons that could inform the long-term development of UTENs in New York. We recognize that the six month timeframe was aggressive and that the PSC and utilities have required extra time to ensure projects are planned properly. However, approval of these projects is now almost three years overdue.

Because of this, we stress the urgency of moving projects forward. BDC urges the PSC to advance both into Stage 3 to ensure the goals of UTENJA are fulfilled. We also recognize that Stage 3 and subsequent stages present further opportunities for increased transparency and cost reductions, including incorporating weatherization and energy efficiency, rightsizing thermal energy resources, equipment, distribution systems, and overall electric capacity to the newly reduced energy loads, as designs are finalized. The New York State Energy Plan highlights resource efficient decarbonization as a means of strategically reducing loads in order to reduce the effort to achieve full building decarbonization.

The pilots, as a whole, should contribute to our shared long-term goal of creating a durable, transparent, and equitable regulatory UTEN framework, ultimately enabling utilities, communities, and private partners to collaboratively build out a low-carbon, networked thermal energy system across New York State.

Discussion

Thermal energy networks represent a critical next step in New York's transition toward an equitable, affordable, low-carbon energy future. TENs enable the capture, recovery, exchange, and storage of thermal energy (heat) by interconnecting buildings and facilities through shared thermal infrastructure. This infrastructure includes proven and mature technologies such as heat pumps, waste-heat recovery systems, and district-scale energy sharing. TENs move heat into buildings when they need heating and out of buildings when they need cooling. Connecting diverse, non-combusting thermal energy resources reduces dependence on fossil fuels.

TENs are highly efficient. They can achieve coefficients of performance (COP) of 4 or more, meaning that for every unit of electricity, they can provide four units of heat. This efficiency can translate directly into relieving electric grid congestion. By shifting energy-intensive heating and cooling loads from the constrained electric system to efficient thermal infrastructure, TENs can defer costly grid reinforcements and enhance reliability in high-demand areas.

As utility-scale solutions, UTENs can deliver family-sustaining union jobs and offer skills transition pathways for workers. Indeed, two key goals of UTENJA were to provide a "just transition" pathway for gas workers and a pathway into unions for members of disadvantaged communities. An important requirement of the law is the use of project labor agreements, apprenticeship and pre-apprenticeship standards for all construction contractors, and protections for the various utilities' workforce. Such agreements can ensure that the goals of UTENJA in relation to workforce development, career pipelines for residents of disadvantaged communities, and safe, high-quality infrastructure are met. The timely advancement of project labor agreements between bona fide trade union organizations and the utilities for their pilot projects will also help ensure that projects can advance construction on a timely schedule with high safety and training standards in Stage 3.

With these inclusions, UTENJA set a national precedent for building a clean energy economy that sustains good union jobs while opening new opportunities for underrepresented workers, and mitigates the risk of incentivizing low-wage, transient jobs. By ensuring utilities continue to comply with these provisions going forward, the PSC can help New York continue to lead the nation in building clean energy infrastructure grounded in safety, timeliness and family-sustaining jobs.

Review of Pilot Projects

NYSEG Ithaca UTEN Pilot Project

The Ithaca thermal energy network pilot represents a strategically important opportunity to demonstrate how UTENs can advance decarbonization in one of New York's most climate-committed municipalities. The City of Ithaca's nationally recognized pledge to decarbonize its entire building stock makes it an ideal location for testing scalable clean heating and cooling infrastructure.

The proposed project would serve a diversity of building types across the city's urban core, including municipal, commercial, and multifamily properties, and is located within a Disadvantaged Community (DAC). The pilot will provide valuable insights into how networked thermal systems can meet mixed loads in compact urban settings.

The cost of this pilot reflects its status as a first-of-its-kind project serving a relatively small load, with capacity to scale in future. The proposal indicates that every customer's electrical panel will be upgraded, while some customers will also receive building envelope upgrades. Pilot costs also include customer protections, training, O&M guarantees, and decommissioning reserves, representing $6.7M alone. Additionally, the underlying infrastructure—production wells, ambient loop mains, and the centralized pump station—is sized to support significantly greater thermal capacity, supporting future scaling. When spreading these fixed costs over a larger customer base, the cost structure behaves like any other utility network infrastructure — economies of scale dominate, and cost per ton collapses.

Dense neighborhoods offer a cost advantage because more customers can share the same core infrastructure. However, realizing those savings depends on whether the system can expand over time. Some parts of the system, such as the main distribution pipes and other shared underground infrastructure are expensive to install but do not need to grow proportionally as new customers connect. In contrast, equipment inside individual buildings, such as heat pumps, generally scales one-for-one with each new connection.

If the system cannot expand beyond the initial pilot area, those shared infrastructure costs would be spread over a smaller number of customers, which could increase overall costs. Physical barriers such as steep terrain or waterways may limit the ability to grow the network beyond the pilot neighborhood. For this reason, it would be prudent to analyze the full area that could realistically be served in the future. Understanding the total potential service area will help determine whether launching a Thermal Energy Network (TEN) in the proposed pilot location is economically viable and capable of scaling over the long term.

Notably, the project is designed around an open-loop hydrothermal geothermal system that extracts the naturally stable thermal energy stored in a local aquifer. Open-loop geothermal is unique among the UTENJA pilot projects proposed to date because it is the only architecture that leverages direct groundwater exchange rather than relying on extensive closed-loop borefields. This distinction matters: open-loop systems deliver exceptionally stable source temperatures and high COP performance, often exceeding the efficiency of closed-loop vertical borefields, while requiring far fewer drilled assets. While it comes with trade-offs—open-loop systems require consistent groundwater quantity and quality, sometimes additional permitting steps, hydrogeologic characterization, and ongoing monitoring—this is a design innovation that could prove both technically feasible and significantly lower in cost than traditional closed-loop borehole systems, creating an important proof of concept for replication throughout Ithaca and elsewhere in New York with similar hydrogeology. This makes the project an appropriate choice for a UTENJA flagship demonstration.

The Commission should continue working with the utility to improve the project as it advances to Stage 3. First, DPS should require NYSEG to submit a detailed readiness and stakeholder engagement plan outlining how the utility will collaborate with municipal, institutional, and private partners throughout the design and implementation phases. Second, the Commission should request greater technical specificity on the feasibility and permitting pathways for the proposed open-loop groundwater heat exchange system, including environmental safeguards, proposed timelines, and cost analyses. Finally, the Commission should ensure that customer protection measures extend beyond financial assurances to include meaningful participation and benefit for the host community.

This pilot's success will depend on earnest engagement, technical rigor, and alignment with the economic and environmental objectives of the Climate Leadership and Community Protection Act (CLCPA).

I. Pilot Design

a. Technical feasibility and compliance with UTENJA

The Ithaca filing demonstrates a technically feasible, innovative, and UTENJA-compliant design for the provision of thermal energy through a UTEN.

The project employs an open-loop, aquifer-sourced geothermal system feeding an ambient-temperature distribution loop, with building-level ground-source heat pumps connected via energy transfer stations (ETS). The engineering design is detailed, site-specific, and supported by hydrogeologic analysis, Manual J load calculations, civil and electrical drawings, and a defined controls strategy. The design aligns with UTENJA's intent to test non-combustion, networked thermal infrastructure as a substitute for traditional gas systems and demonstrates feasibility in a low-density, residential neighborhood context that is underrepresented in other pilots.

Groundwater is pumped from production wells at a relatively constant year-round temperature (approximately 50–55°F), passed through heat exchangers to condition an ambient-temperature district loop, and then returned to the aquifer via reinjection wells. This ambient loop distributes low-temperature thermal energy throughout the neighborhood, where building-level ground-source heat pumps upgrade or reject heat as needed for space heating and cooling. In previous filings, NYSEG recognized that multiple thermal energy resources are accessible in this area—including wastewater heat recovery, shallow-depth geothermal borefields, and surface water heat exchange at a nearby canal—and could deliver a reliable, renewable, and flexible energy service in future projects. An expandable system capable of connecting varied thermal energy resources is an ideal characteristic of a TEN pilot project.

By using a small number of high-capacity production and reinjection wells to condition an ambient-temperature loop, the Ithaca UTEN pilot can provide utility-scale thermal capacity at a fraction of the drilling cost, with faster construction timelines and lower ground disturbance than the dozens or hundreds of boreholes required for closed-loop fields. Open-loop UTENs are inherently scale-efficient: most of the expensive bits (production wells, injection wells, trunk mains, energy center, SCADA, engineering, permitting, customer engagement, etc.) don't scale linearly with each additional building. As you can see from NYSEG's own description in their filing, this configuration "can provide a high thermal exchange capacity and require less production wells than ground-based UTEN systems of a similar size," implying headroom for additional load on the same resource base.

b. Credibility of the business model

The filing presents a credible, though intentionally conservative, business model for operating a UTEN during a pilot phase. NYSEG assumes ownership of both utility-side and customer-side assets, incorporates full customer protections, and includes five years of O&M, monitoring, and reporting within the pilot cost structure. As NYSEG is embedding UTENs in their-long term plan, this pilot is meant to inform their future deployments. They proposed to develop one UTEN project every other year starting in 2035. They cite the pilot's outcome as something that will help shape the strategy towards achieving this goal.

While the initial per-customer cost is high compared to other UTEN pilots, the business model is clearly framed as a demonstration platform rather than a mature commercial deployment. Importantly, the design and cost structure indicate that the system is capable of serving substantially more buildings, suggesting that the underlying business model becomes significantly more cost-effective when scaled. Currently, whether the Ithaca UTEN pilot looks "cost-effective" depends heavily on (1) how you treat decommissioning and other pilot-specific overheads and fixed costs, and (2) what scale you assume it ultimately serves. Under small-scale, pilot-only assumptions, it will always look expensive; under scaled-up, infrastructure-like assumptions, the effective cost per unit of capacity and per unit of decarbonization can drop dramatically.

II. Customer Protection Plan, Including Customer Engagement and the Customer Agreement

a. Effectiveness of the Customer Protection Plan

The Customer Protection Plan is robust and comprehensive. It clearly delineates the rights and responsibilities of participants and the utility during and after the five-year pilot term, including protections related to cost stability, equipment performance, service continuity, and exit provisions. The plan appropriately recognizes the heightened risk exposure for residential customers participating in a first-of-kind utility thermal pilot and mitigates those risks through utility ownership, maintenance responsibility, and bill protections.

b. Best practices

Several elements of the Customer Protection Plan represent best practices that should be replicated in future UTENs, including prohibition on early termination penalties, inclusion of emergency response protocols, and explicit acknowledgement that customers should not bear pilot-specific risks. This pilot is also testing full utility ownership of customer-side equipment, which is a feature that can improve customer affordability. These features materially distinguish UTEN participation from individual electrification pathways.

c. Customer engagement and education

The filing describes a structured and ongoing approach to customer engagement, including pre-construction outreach, individualized building assessments, and continued communication through construction and operations. While the engagement strategy is strong, the Commission may wish to require clearer commitments regarding post-construction education, including how customers will be informed about system performance, maintenance events, and any changes during the pilot period.

III. Rate Structure

a. Assessment of proposed rate structures

The filing outlines a pilot-period rate approach that prioritizes bill stability and customer protection rather than cost reflectivity. This is appropriate for a demonstration project. The post-pilot rate discussion is necessarily conceptual, reflecting the pilot's role in informing future tariff development rather than locking in permanent rate design.

b. Strengths and weaknesses

The principal strength of the proposed rate approach is its emphasis on shielding participants from financial volatility during a first-of-kind pilot. The primary weakness is the lack of detail on how rates would evolve in a scaled deployment or how system benefits (e.g., avoided grid costs) might eventually be reflected.

c. Alternative rate structures

The Commission may wish to explore future rate structures that more explicitly value system-level benefits, such as avoided electric distribution upgrades and avoided gas infrastructure costs, particularly once UTENs move beyond pilot scale.

IV. Cost Recovery Approach

a. Assessment of cost recovery

NYSEG proposes to recover pilot costs outside of customer rates, consistent with UTENJA guidance. The filing transparently includes engineering, construction, O&M, customer protections, and a decommissioning reserve.

b. Preferred approach

This approach is preferable to direct customer cost recovery during the pilot phase, as it avoids discouraging participation and ensures that customers are not asked to underwrite system learning.

c. Alternative approaches

As UTENs mature, cost recovery mechanisms that align thermal networks with non-wires alternative (NWA) and non-pipes alternative (NPA) frameworks should be considered, particularly where UTENs provide measurable grid and infrastructure benefits.

V. Data Collection, Performance Metrics & Reporting

a. Sufficiency of data and metrics

The filing includes an extensive data collection and monitoring framework, including thermal performance, flow, temperature, pump operation, and energy use across the network. This approach is sufficient to support transparency and learning.

b. Balance of information and cost

The approach strikes a reasonable balance between data granularity and administrative burden. While instrumentation costs are non-trivial, the level of detail is appropriate for a pilot intended to inform statewide regulation.

VI. Equitable Electrification

a. Life cycle cost analysis and electrification viability

The filing demonstrates that, while the UTEN has higher upfront costs than individual electrification alternatives, it offers lower lifecycle risk, including lower electricity costs for customers, reduced grid impacts, and superior long-term affordability when scaled. The life cycle framing appropriately situates UTENs as infrastructure investments rather than appliance replacements.

The apparent cost-effectiveness of the Ithaca UTEN pilot shifts dramatically once it is evaluated against the true alternatives—Business-As-Usual (BAU) and stand-alone ASHP deployment—rather than against other UTEN pilots. Under BAU, near-term capital costs appear low, but this perpetuates long-term gas infrastructure liabilities, leak risks, and stranded-asset exposure while delivering no decarbonization benefit. The stand-alone ASHP alternative, meanwhile, also seems cheaper on a per-unit basis, but only when viewed narrowly at the building level; in practice, neighborhood-scale ASHP adoption could create significant winter peak electrical loads, require costly service and panel upgrades, and provide no shared thermal infrastructure or load diversity benefits.

Against these baselines, UTEN's cost-effectiveness cannot be judged solely by the pilot's initial per-building cost. The aquifer-based ambient loop avoids future gas main replacements, delivers higher and more stable heat pump efficiency than ASHPs, and prevents the grid impacts that BAU and ASHP scenarios would shift onto electric ratepayers. When these avoided costs, long-lived infrastructure values, and system-level resiliency benefits are included, UTEN emerges as the prime option capable of reducing long-term ratepayer burden, meeting climate mandates, and providing a scalable non-gas pipe solution—even if its small pilot footprint makes the early cost-per-unit appear high.

b. Additional considerations

The Commission should consider avoided gas system costs, avoided electric distribution upgrades, and reduced exposure to fuel price volatility when assessing equity impacts. These system-level benefits are not fully captured in traditional customer bill comparisons.

NYSEG states in its filing that they intend to incorporate the lessons learned from the pilot to inform future plans, including scaling thermal energy networks within its Gas Long-Term Plan. NYSEG's recognition of the Pilot as an opportunity to advance thermal energy network technology to provide customers with alternatives that align with New York's clean energy and climate goals, which require a significant reduction in methane gas usage, aligns with the intent of UTENJA. It is also very important NYSEG plans for gas phase-out and TEN expansion align directly with the City of Ithaca's decarbonization plans.

VII. Labor and Workforce Development

The filing reflects a meaningful commitment to labor standards and workforce development consistent with UTENJA. The project supports skilled trades in drilling, excavation, HVAC, controls, and utility operations, and provides real-world training in geothermal and thermal network technologies.The timely advancement of project labor agreements between bona fide trade union organizations and the utilities for their pilot projects will also help ensure that projects can advance construction on a timely schedule with high safety and training standards in Stage 3.

VIII. Pilot Project Impacts

a. Relative to other pilots, the Ithaca project offers:

i. Unique learning opportunities, particularly regarding aquifer-based open-loop systems and lower-density residential deployment;
ii. Diversity of technical design, as no other proposed pilot tests an open-loop ambient network at neighborhood scale;
iii. Transferability and scalability, especially in upstate communities with similar hydrogeology and housing stock; and
iv. Substantial GHG reductions, with deep emissions cuts compared to BAU.

IX. Pilot Project Risks and Uncertainties

a. Significance of risks

The primary risks relate to groundwater performance, construction complexity, and customer participation. These are inherent to first-of-kind projects.

b. Risk mitigation

The filing articulates reasonable mitigation strategies, including conservative design, monitoring, customer protections, and contingency planning. The inclusion of a decommissioning reserve further reduces long-term risk exposure**.**

X. Additional Comments on the Stage 2 Filings

NYSEG included scaling thermal energy networks in its Gas Long-Term Plan (“LTP”), proposing to develop one UTEN project every other year starting in 2035. The Company plans to incorporate the lessons learned from the Pilot to inform future UTEN pilots and gas LTPs and will monitor the development prospects and cost of UTENs through the other pilot programs in New York

The Commission should approve the Ithaca UTEN pilot because it provides unique system-level learnings, infrastructure design insights, and utility operational experience that are not obtainable from the other UTENJA pilots—none of which test an aquifer-sourced open-loop ambient network in a low-density residential setting. While the Ithaca project has a higher cost per customer in its initial deployment, its per-unit cost is not the relevant measure for a first-of-kind demonstration project whose primary purpose is to generate statewide learning necessary for UTEN rulemaking, not to deliver commercial-scale economics at pilot scale. The Commission’s Guidance Order explicitly states that pilot projects should be evaluated based on learning value, diversity of design, and insight into future scalability, not on present-day cost effectiveness alone. The infrastructure built in Ithaca will generate critical operational, regulatory, hydrogeologic, and customer-protection learnings that the Commission must have while establishing statewide thermal network rules. Moreover, a substantial portion of pilot costs and infrastructure can be expanded to many more buildings in the subject neighborhood, which can ultimately demonstrate how scale over time benefits project economics. For these reasons, the

Ithaca UTEN pilot offers outsized statewide value and is fully aligned with the Commission's objectives under UTENJA and CLCPA.

National Grid/Niagara Mohawk Troy UTEN Pilot Project

The Troy UTENJA pilot is a strategically important opportunity to demonstrate how UTENs can decarbonize dense, historic, mixed-use downtown districts, a building typology that is common across upstate New York and uniquely hard to electrify building-by-building. The filing emphasizes that the project "will focus entirely on retrofit work on historic buildings," with five connections serving six largely 100+ year-old properties, positioning Troy as a case study for integrating modern clean thermal infrastructure into legacy urban environments undergoing revitalization.

Importantly, the Troy filings acknowledge why pilot-only economics can be misleading: (1) the estimate does not yet reflect grants/incentives/tax credits, which can substantially reduce a system's capital cost, and (2) the system is designed to scale, with a large amount of unconnected building area along the route that could be served later if additional thermal resources are added. The filing further notes that excluding thermal resource costs, future connection costs are expected to be about half of pilot-era connection costs, because the main is already oversized for expansion. This is the key "economies of scale dominate" argument in Troy's context: once the backbone mains, Energy Center, and borefield interface exist, incremental connections become materially cheaper—exactly how gas distribution systems historically achieved affordability.

Relative to alternatives, the Troy filing documents that NMPC considered sewer heat exchange, an all air-to-water thermal network, and a Hudson River heat exchanger—and dismissed them as inferior for Troy's site constraints (combined sewer complexities and floodplain siting; impractical rooftop/space needs for full-load air-source; and onerous multi-agency permitting and endangered species considerations for Hudson River exchange). Those comparisons help show that Troy's closed-loop geothermal borefield is a deliberate response to a constrained downtown environment, limited available real estate, and complex waterfront permitting.

That said, there are several areas where the Commission should require tighter commitments. First, the downtown/parkland siting introduces unique public-interest and governance risk: the borefield is on municipal parkland and the filing describes special "alienation" legislation and lease/sublease structures, with municipal approvals still needed for key lease terms. Second, the project's cost structure includes large uncertainty components (notably P80 risk-based contingency and escalation), which may be directionally appropriate for a first-of-kind urban excavation project but should trigger stronger cost-control and stage-gate discipline. Third, Troy's "learning value" will only be realized if NMPC produces a transparent, transferable playbook for: historic-building conversion strategies, street restoration and utility coordination in congested corridors, floodplain resilience, and how thermal balancing is operationalized over time with hybrid resources.

I. Pilot Design

a. Technical feasibility under UTENJA

The Troy UTENJA pilot demonstrates a technically feasible thermal network design consistent with UTENJA, particularly in its application to dense, historic downtown buildings where individual electrification faces significant structural and space constraints. The use of an ambient-temperature distribution network supplied by a large closed-loop geothermal borefield beneath municipal parkland reflects a utility-scale, infrastructure-first approach that is appropriate for legacy urban cores that may have underground conflicts, land constraints, and yet still have open and undeveloped areas where geothermal can be clustered. The design also incorporates advanced controls, centralized monitoring, and a hybrid thermal balancing strategy that provides meaningful operational learning value for future UTEN deployments.

Technically, the Troy pilot is built around a vertical closed-loop geothermal borefield installed beneath City parkland at Riverfront Park: 200 boreholes drilled to 650 feet, designed for a peak heating load of 6,500 MBH and peak cooling of 550 tons. That borefield conditions a single-pipe “ambient loop” utility distribution system (UDS) that operates roughly 35–40°F in winter and 75–85°F in summer. The filing highlights future scalability: the 16-inch main is intentionally sized to support additional customer connections later because excavation/restoration dominate costs and upsizing pipe diameter is marginal by comparison. This “future-sizing” logic is exactly what the Commission should want from a UTEN pilot, an infrastructure-first approach designed to become a backbone asset, not a one-off project.

A notable design nuance (and a genuine “learning value” differentiator versus other pilots) is how Troy manages *thermal balance* and downtown siting constraints. The connected portfolio is modeled at 7,055 MBH (≈588 tons) of heating load and 410 tons of cooling load, and is heating-dominant on an annual basis. Because an imbalanced borefield would drift colder over time, the project adds two auxiliary air-to-water heat pumps at the Energy Center (each 1,278 MBH at summer conditions) to inject heat during cooling (summer) months and preserve long-term borefield performance. This hybrid “ground + targeted air-source balancing” approach including a borefield located in a flood plain area but served by Energy Center pumps to avoid putting pumping infrastructure near the borefield, creates a valuable operational template for other water body-adjacent downtowns facing flood risk.

However, the Troy pilot’s plan to use centralized air-to-water heat pumps at the Energy Center to “balance” a heating-dominant borefield risks shifting a thermal-balancing problem into a coincident electric peak problem, because those ASHPs will draw their highest kW precisely during cold snaps when the grid is already stressed, potentially increasing winter peak demand even if annual kWh decline. This risk can be mitigated by designing the balancing strategy to be *non-coincident* with system peak (e.g., prioritize shoulder-season and off-peak operation, enforce dispatch constraints tied to utility peak windows, and use controls that curtail ASHP output during peak hours while maintaining loop temperatures within acceptable bounds).

Additional mitigation options include integrating weatherization of participating buildings, thermal storage (buffer tanks or other storage) to “charge” heat off-peak and deliver balancing heat later, using variable-speed/soft-start equipment with demand caps, co-optimizing building-side heat pump controls to reduce simultaneous ramping, and aligning any Energy Center electric service with demand response programs or regulatory mechanisms that make peak avoidance an operational requirement. These measures would yield significantly reduced capital costs if integrated into the design at an early stage and could be a key to reducing long-term customer costs .

b. Credible business model

The Filing presents a credible, utility-operated business model, with National Grid proposing full ownership, operation, and maintenance of the UTEN assets. This structure aligns with UTENJA’s intent to test regulated thermal service provision and simplifies accountability, financing, and customer protection. That said, the long-term viability of the business model will depend on the project’s ability to scale beyond the initial customers and to manage electric demand impacts in a manner consistent with least-cost system planning.

II. Customer Protection Plan, including Customer Engagement and the Customer Agreement

a. Effectiveness of customer protections

The project filings also present serious consideration of customer protections. The filing describes a customer's right to withdraw if the UTEN does not meet specified operating requirements during the 5-year term, with reversion costs borne by NMPC if withdrawal is performance-triggered. It also provides conceptual “budgetary” reversion cost estimates (about $1.143M total across the portfolio) and outlines multiple termination alternatives, including a shift to all-electric ASHP systems or other pathways.

b. Best practices

Best practices include the explicit right to withdraw for performance-related reasons, utility responsibility for reversion costs under defined conditions, and transparency regarding post-pilot outcomes. These provisions should be replicated in future UTENJA pilots.

c. Customer engagement

The Filing outlines a basic engagement framework but would benefit from greater specificity regarding ongoing communication during construction and early operations, particularly given the disruption associated with downtown excavation and parkland use.

III. Rate Structure

a. Assessment of proposed rates

The proposed rate structure during the pilot period is designed to provide bill stability and customer protection while recovering costs through broader utility mechanisms. Participating customers will be charged a flat monthly thermal energy fee during the pilot period, which will allow customers to budget evenly across the year. A customer's monthly thermal fee is calculated such that it does "not exceed what they would have incurred" without participation in the pilot; however, it does not include specific bill caps.

Customers' electric bills will vary seasonally based on their actual heating and cooling usage; colder-than-expected winters or hotter-than-expected summers could translate to higher electric bills as the equipment works more intensively. National Grid's approach to this uncertainty includes safeguards including conservative modeling assumptions when preparing the thermal energy fee; prioritizing a flat and predictable thermal energy fee, in contrast to unpredictable gas bills for heating; and keeping open the possibility of recalculating fees closer to the in-service date. After one year, National Grid has the discretion to adjust rates based on data collected during the pilot, including metered system performance and comparisons of modeled versus actual performance.

Ultimately, National Grid's plan proposes that customers will receive modern and efficient thermal infrastructure, without individual investment in equipment and with lower projected bills based on National Grid's modeling. This approach is appropriate for a first-of-its-kind demonstration.

b. Strengths and weaknesses

A key strength is insulation of customers from early cost volatility. A weakness is the lack of explicit linkage between rates and electric peak performance, particularly given the use of centralized ASHPs.

c. Alternative structures

The Commission should consider requiring peak-aware or performance-adjusted rate mechanisms that reward non-coincident operation and penalize contribution to system peak, particularly for centrally dispatched electric equipment.

IV. Cost Recovery Approach

a. Assessment

The proposed cost recovery approach—largely socialized across ratepayers—is reasonable for a pilot whose primary purpose is system learning rather than immediate cost minimization.

b. Preferred approach

The approach is acceptable provided that future scalability and peak demand impacts are explicitly evaluated before replication.

c. Alternatives

Future pilots should explore cost recovery structures that explicitly account for avoided gas infrastructure costs and avoided electric capacity investments.

V. Data Collection, Performance Metrics & Reporting

a. Sufficiency of data collection

The Filing adequately addresses data collection through SCADA and EM&V systems, including thermal, electric, and customer performance metrics.

b. Balance of cost and value

To maximize learning, DPS should require explicit reporting on coincident electric peak demand impacts, including when centralized ASHPs operate, how often they coincide with system peak hours, and what mitigation measures are deployed.

VI. Equitable Electrification

a. Life-cycle cost analysis

The Filing positions the UTEN as a viable alternative to individual building electrification in a historic downtown context, where building-by-building ASHP deployment would be costly, disruptive, and grid-intensive.

b. Additional considerations

The Commission should consider whether centralized ASHP balancing shifts costs onto non-participating electric customers via increased peak demand, which could undermine equity objectives if not mitigated.

VII. Labor and Workforce Development

a. Assessment

The Filing includes commitments to workforce training and utility skill development, consistent with UTENJA's labor objectives. Greater clarity on local hiring and coordination with municipal workforce programs would strengthen this section.The timely advancement of project labor agreements between bona fide trade union organizations and the utilities for their pilot projects will also help ensure that projects can advance construction on a timely schedule with high safety and training standards in Stage 3.

VIII. Pilot Project Impacts

a. Relative to other pilots

i. **Unique learning opportunities:**
Troy uniquely tests UTEN deployment in a dense, historic downtown with constrained rights-of-way and parkland-sited geothermal resources.

ii. **Diversity of design:**
The combination of a large closed-loop borefield, ambient loop distribution, and centralized thermal balancing expands the diversity of UTEN architectures under consideration.

iii. **Transferability and scalability:**
The project is transferable to other upstate downtowns, but scalability depends on successfully managing electric peak impacts and expanding the customer base to leverage fixed infrastructure.

iv. **GHG reductions:**
The project offers substantial GHG reductions relative to BAU, provided electric peak impacts are controlled to avoid upstream emissions and capacity additions.

IX. Pilot Project Risks and Uncertainties

a. Significance of risks

Key risks include cost escalation, parkland governance complexity, and electric peak demand impacts from centralized ASHP operation.

b. Risk mitigation

While the Filing addresses thermal and construction risks, it does not yet articulate a robust strategy to ensure that centralized ASHPs operate in a non-coincident, peak-avoiding manner. Mitigation measures should include dispatch constraints, thermal storage, demand caps, and explicit alignment with utility peak management and demand response programs.

X. Additional Comments on the Stage 2 Filings

The Troy UTEN pilot tests exactly the difficult issues New York must solve to decarbonize legacy downtowns at scale: historic downtown retrofits in an area with constrained rights-of-way and overlapping governance of parkland and subsurface areas. However, the Commission should encourage enhanced requirements related to electric peak demand management, scalability planning, building envelope improvements (weatherization), and transparent reporting of grid impacts. Doing so will ensure that the pilot advances UTENJA’s goals not only for thermal decarbonization, but also for integrated, least-cost energy system planning.

Key Recommendations for Stage 3

BDC submits the following general recommendations on the two UTENJA pilots outlined above, that can be monitored and implemented by the PSC upon advancement of pilots to Stage 3. These recommendations are intended to guide the development of a long-term, durable regulatory framework and market model for TENs in New York State. As pilots advance through Stages 3, 4, and 5, the PSC can continue to modify projects to ensure that they are transparent, incorporate sustainable financing and cost-effective design principles, advance Integrated Resource Planning (IRP) between agencies and across energy sectors, and advance serious, scalable, and replicable project concepts. Furthermore, the PSC can implement strategies to: ensure cost control and cost accountability and ensure unspent balances are returned to ratepayers; retain the right to approve drawdowns on the contingencies as projects develop further; continue to monitor to ensure that utilities comply with labor standards; and ensure utilities engage earnestly and in good faith in the pilot and regulatory process.

BDC recommends the PSC consider these recommendations across all pilots, and make recommended modifications, as they are authorized under the Utility Thermal Energy Network and Jobs Act to do, and as needed to bolster transparency and cost-effective implementation as pilots move forward in Stage 3.

Transparency

First, projects should demonstrate transparency, particularly in reporting costs and system design decisions that influence those costs. Current utility filings contain extensive redactions and lack granularity in their cost projections, meaning members of the public do not have the same level of information as the utilities and DPS staff. Therefore, ratepayers are relying on DPS staff to ensure project costs are reasonable. We understand that a competitive marketplace sometimes requires certain financial information to be protected. However, because the UTENJA pilots are subject to cost recovery from captive ratepayers, as much transparency as possible is absolutely critical. We urge the PSC and the utilities to limit redactions as much as practicable as part of Stage 3 to support stakeholders in evaluating program performance, costs, prudency of design and investment decisions, ratepayer impacts, expandability and replicability.

Given the uncertainty built into the process, and the increased costs to accommodate risk that are created by that uncertainty, we expect to see the current cost estimates continue to become more accurate and to come down as utilities begin advancing procurement efforts and finalizing design decisions.

As pilots move into the construction phase, utilities should be required to report, and clearly separate network infrastructure costs in the following functional, uniform categories: heat production (boreholes, data center waste heat, heat pumps, etc.); distribution (shared mains, heat exchangers, energy centers, monitoring equipment and all other systems used to deliver heat from the source to the individual customer), and customer (service lines, heat pump installation, individual metering, building retrofits, etc.) This separation into functional cost categories is crucial for accurate cost benchmarking and informed rate design. It is consistent with current utility practice in both the gas and electric industries. Further, and of essential importance, it enables analysis of which categories are most likely to see cost reductions as TENs scale.

Redactions make it impossible for stakeholders to fully and fairly evaluate customer equipment and retrofit cost data ahead of this comment deadline, and we will ask for more transparency on this information during Stage 3. All stakeholders, including intervenors and the public, must have access to detailed costs, key design parameters, and performance information to the extent practicable to enable informed evaluation and oversight. The PSC should require the removal of all redactions, except where disclosure would compromise legitimate customer privacy or confidential information, national security, system security concerns, or would jeopardize competitive bidding processes that benefit customers. The PSC should also require separation of costs into functional, uniform categories. This would uphold the principles of transparency, accountability, and learning that underpin this proceeding. Lastly, the PSC can implement cost control and cost accountability strategies and retain the right to approve drawdowns on the contingencies as projects develop further, and ensure unspent balances are returned to ratepayers.

Lessons for a Future Thermal Utility Model: Retrofit Cost Recovery

The pilots, especially if advanced to construction and operation, should generate important lessons for a future thermal utility model in New York. Valuable lessons will include identifying sustainable sources for building retrofit funding and the ability to apply Integrated Resource Planning (IRP) principles to UTENs.

The installation of a TEN within existing building stock typically necessitates extensive HVAC retrofits and, in some cases, improvements to the building's thermal envelope. These measures, while essential to project success, often represent a significant share of implementation costs. BDC supports the inclusion of building retrofits within pilot project scopes, recognizing that these are crucial learning opportunities for the PSC, the utilities, the customers, and the market at large and reduce long-term costs. Pilots are intended to generate insights into the technical, financial, and logistical challenges associated with integrating new thermal infrastructure into existing buildings. Accordingly, inclusion of these costs at the pilot stage is appropriate so long as they are transparently presented, well-documented, and analyzed in a way that informs future rate design and policy frameworks. As part of Stage 3, utilities should be required to implement cost-control measures—such as competitively bidding retrofit work—and limit customer charges to actual incurred costs.

In the future, as the State transitions from pilot demonstrations to scalable deployment, utilities must take a strategic and integrated approach to funding building retrofits. Ratepayer-backed UTEN cost recovery should not serve as the sole or primary mechanism for financing such upgrades. Instead, utilities and their partners should actively coordinate across all available funding sources—including those authorized under other PSC dockets (e.g., the Energy Efficiency and Building Electrification (EE/BE) portfolio) and funding in the Sustainable Future Fund, as well as federal programs, state incentive funds and grants, and municipal and private capital. This blended funding model can minimize rate impacts while maximizing participation and equitable access to neighborhood-scale decarbonization.

Public-private partnerships, in particular, can play a critical role by aligning private investment with public objectives, leveraging building owner capital, and accelerating retrofit adoption across diverse customer classes. Such an approach ensures that the financial responsibility for these transformative projects is distributed fairly, that the benefits of TENs are broadly shared, and that future rate structures reflect the true, sustainable life-cycle cost of decarbonized thermal infrastructure.

Lessons for a Future Thermal Utility Model: Integrated Resource Planning (IRP) and Strategic Infrastructure Deployment

The PSC should also assess projects' alignment with Integrated Resource Planning (IRP) principles, ensuring that thermal infrastructure is deployed strategically to optimize system-wide benefits that integrate with concurrent decarbonization and grid planning efforts.

UTENJA provides a critical opportunity to advance learnings that move beyond siloed planning toward a truly sector-coupled model of IRP. This model must recognize that decisions about thermal energy infrastructure—including the siting, sizing, and sequencing of networked systems—directly influence electric grid operations, investment needs, and ratepayer costs. As electric loads increase due to building and transportation electrification and industrial loads, strategically-deployed TENs can serve as a moderating force by reducing peak demand, stabilizing local grids, and deferring or eliminating the need for costly distribution and transmission upgrades. Additionally, TENs can act as distributed thermal storage assets, enabling load shifting and reducing electric peaks through intelligent integration with heat pumps, thermal storage, and waste-heat recovery systems. These capabilities effectively create "thermal buffers" within communities, improving resilience during extreme weather events and supporting reliability under increasingly variable renewable generation conditions.

To realize this potential, in the upcoming Stages of the pilots, utilities should be required to demonstrate how each proposed pilot project will impact not only local thermal loads, but also electric dispatch, system flexibility, and regional capacity dynamics. Utilities should also model and report thermal storage and buffer effects as part of their filings, quantifying avoided infrastructure costs, deferred investments, and the capacity value that thermal systems contribute to the grid. This level of integration will also allow the PSC to capture the full value stack of TENs—including avoided transmission and distribution costs, reduced capacity requirements, emissions reductions, and improved local resilience.

Beyond grid-level benefits, strategic deployment of TENs should also be aligned with neighborhood-scale decarbonization, retirement of leak-prone gas pipe, and land-use planning objectives, and coordinate with existing municipal, utility and state infrastructure projects to minimize disruption and reduce installation costs.

Finally, the UTEN pilots also present an opportunity to evaluate different technical designs that can influence IRP processes. The ongoing expansion of ambient-temperature system designs is a positive development: these low-temperature systems are efficient and experience minimal thermal losses. Within the ambient-temperature range, UTEN designs may incorporate one- or two-pipe configurations. Each of these may confer specific advantages or limitations relevant to IRP goals. For example, two-pipe designs can leverage centralized energy sources—such as transit hubs, data center waste heat, or a wastewater treatment plant—and deliver consistent heating and cooling throughout the network. However, they can be complicated and costly to expand beyond a centrally-planned district. Single-pipe designs are generally more adaptable and easier to scale, but require support from distributed thermal resources, such as multiple borefields. At this stage in the proceeding, BDC does not advocate for a single design over the other, but encourages the PSC and utilities to measure, compare, and report transparently on the performance of both types. This can determine which technical configurations are best-suited to different communities and thermal resource opportunities.

Amortization and Rate Recovery

Throughout the proposed pilots, the PSC should assess amortization and depreciation schedules and modify them to align with the useful life of the system and the equipment, rather than abbreviated schedules of 10 to15 years that require recovering higher costs from ratepayers over a shorter schedule. The piping networks, geothermal boreholes and heat transfer systems, and heat pump technologies in TENs are mature technologies and their amortization timelines should align with other types of utility infrastructure. For example, the amortization timeline for HDPE pipe should be the same as the schedules the PSC approves for piping in the gas system, often recovered on a timeline of over 50 years. Similar useful life spans apply for geothermal boreholes. Geothermal heat pumps in buildings have a useful life of 25 to 30 years, and rate recovery timelines for this equipment should reflect that to protect ratepayers from unnecessarily high charges.

BDC notes that cost recovery for these pilot projects remains fully at the discretion of the PSC, and that discretion must be exercised with an eye toward genuine commitment to the CLCPA and the long-term decarbonization of New York's buildings. Without clear accountability, the proceeding risks producing data and outcomes that understate the true potential of TENs and delay the policy and regulatory evolution envisioned by UTENJA.

Accordingly, the PSC should hold utilities to the highest standard of prudency review and disallow cost recovery in cases where aspects of pilot projects are found to have been proposed or executed without a good-faith effort to advance the objectives of the CLCPA and UTENJA. Utilities—particularly those with large gas operations—must demonstrate through their conduct, filings, and project management that they are genuinely planning for a decarbonized future and not obstructing it through inaction, delay, inflated costs, insufficient project design, or impractical restrictions on customers.

Transparent project reporting, measurable decarbonization outcomes, and verifiable cost data must serve as the foundation for any recovery determination. This will ensure that ratepayer dollars are directed toward projects that contribute constructively to New York's clean energy transition and will help establish the institutional trust necessary for broader market transformation in the thermal energy sector.

Conclusion

The PSC's evaluation of the UTEN pilots should fully recognize their short-, medium-, and long-term implications as the foundation of New York's next generation of clean, resilient utility infrastructure. These projects are not transient experiments but anchor investments in the State's emerging low-carbon thermal economy. When strategically located, thoughtfully designed, and transparently managed, TENs can become permanent components of the energy system—supporting deep building decarbonization, grid flexibility, and equitable economic development.

These two pilots exemplify how first generation deployments can function both as near-term learning and workforce and economic development opportunities and as long-lived public assets that guide future regulatory and market design. The PSC's timely advancement of these pilots to implementation and construction, as required under the UTENJA legislation, will set a strong foundation as New York builds its statewide thermal energy marketplace.

As the PSC approves pilots to Stage 3, and makes modifications, there will be continued improvements that can be made in this and subsequent stages to maximize benefits to New Yorkers. Transparency must be prioritized, with utilities required to clearly delineate between network infrastructure and retrofit costs and to share performance data that will inform future replication. Strategic infrastructure deployment should follow the principles of Integrated Resource Planning (IRP), targeting areas where thermal networks can deliver system-wide value by relieving electric grid congestion, safely retiring leak-prone gas pipe, supporting housing and industrial redevelopment, and improving local resilience. The PSC should continue to uphold strong labor standards, community engagement, and equitable access, ensuring that projects align with the intent of UTENJA and the CLCPA. Just as importantly, utilities must demonstrate good-faith participation and readiness, working collaboratively with host communities, municipal partners, and workforce organizations to ensure that pilot projects generate enduring technical, social, and economic value.

To maximize the benefits of these pilots, BDC urges the PSC to require utilities to increase transparency around costs and program design, to enable revisions that improve feasibility and ratepayer outcomes in service of advancing projects to construction in a timely manner. The PSC should use its authority to make modifications to adjust project scope, reduce scale where necessary, or phase implementation to align with funding availability, technical readiness, and community capacity. This approach will allow New York to begin gathering vital lessons on construction, operation, and cost performance while maintaining fiscal prudence and public trust.

By enabling these pilots to advance decisively and thoughtfully, the PSC can ensure that today's early projects mature into permanent, expandable systems of shared clean infrastructure, anchoring New York's path toward a resilient, equitable, and low-carbon future.

Sincerely,

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