

September 10, 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), Alliance for Clean Energy New York (ACE NY), Alliance for a Green Economy (AGREE), PUSH Buffalo, Sierra Club, and WE ACT for Environmental Justice respectfully submits 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 Buffalo pilot, filed by National Fuel Gas.

BDC strongly supports the development of utility thermal energy networks as a critical pathway for long term affordability, equitable building decarbonization, local workforce development, and gas-system transition planning. National Fuel's Buffalo pilot is an important project in the UTEN portfolio because it would test a gas utility's transition into thermal energy service in a disadvantaged community, use wastewater heat recovery from a 96-inch storm/sanitary main, integrate with an existing district heating system, and serve low-income multifamily housing. Decarbonizing a legacy district system in a disadvantaged community will provide real benefit to residents by significantly reducing greenhouse gas emissions and criteria pollutants. The project therefore offers meaningful value.

However, the publicly available record is incomplete in important respects. National Fuel's February 23, 2026 Stage 2 filing provides meaningful public information regarding the system architecture, building-conversion approach, cost-recovery proposal, performance metrics, workforce strategy, customer engagement, and customer agreement. But Appendices A and B to the Stage 2 filing, containing the detailed residential Manual J calculations and loads summary, were filed confidentially. National Fuel's May 18, 2026 supplemental filing also states that Appendices F, G, and H —the residential drawings and specifications, the utility distributions system (UDS) and Energy Center drawings and specifications, and the cost estimate and lifecycle cost analysis (LCCA) — were filed confidentially. On August 14th, National Fuel filed a version of the LCCA that had been partially redacted. BDC understands that the Commission and Department of Public Service Staff have access to the unredacted materials. National Fuel's current submission is insufficient for public reviewers to make an independent assessment of the LCCA due to redactions beyond those seen in other UTEN pilots. Staff should require disclosure of critical documents for public review. In the interim, the Commission and Staff should use the unredacted record to perform the technical, cost, customer-protection, and lifecycle-cost review that public stakeholders cannot independently

perform, and any Stage 3 authorization should include enforceable public-accountability conditions that preserve transparency and regulatory learning.

As with all UTENJA pilot proposals, the Commission should authorize the Buffalo pilot to proceed to Stage 3 if it finds, based on Staff review of the unredacted record, that the project is technically feasible, cost-reasonable relative to its learning value, protective of participating customers and tenants, and capable of producing transferable lessons for future UTEN regulation. If the Commission authorizes the Buffalo pilot to proceed to Stage 3, it should do so subject to the following conditions:

- **Require a transparent public lifecycle-cost-analysis (LCCA) summary** sufficient to understand the business as usual (BAU), air source heat pump (ASHP), and UTEN scenarios, including costs, key assumptions, results, sensitivities, and tax-credit treatment. The LCCAs should include modeled avoided costs of infrastructure investment.
- **Require a public, non-confidential design summary** identifying building loads, diversified peak assumptions, thermal-resource capacities, Energy Center capacity, backup or emergency resources, UDS sizing basis, major equipment categories, supply-temperature assumptions, and commissioning tests, without disclosing customer-sensitive or security-sensitive information.
- **Require Staff confirmation that the design is sufficiently mature before authorizing major construction spending**, based on the unredacted drawings, specifications, controls, metering, and schedule. For the Buffalo pilot, require completion and Staff review of the test borings, thermal-conductivity testing, geotechnical information, wastewater/wet well validation and thermal resource assessment, and National Grid interconnection design and cost before major procurement or construction commitments.
- **Require a category-level cost reconciliation** showing the evolution of the project budget, including the Energy Center, UDS, building conversions, wastewater interconnection, electric interconnection, borefield, controls, soft costs, utility labor, contingency, O&M, tax-credit treatment, and customer-side costs.
- **Place a limit on overall project costs**, a material-change reporting threshold, and a process for review of material scope or cost increases. The overall project cost limit should be subject to downward-only reconciliation.
- **Finalize customer protections** including customer agreements, tenant protections, bill protections, service standards, complaint procedures, and exit provisions before enrollment.
- **Finalize key protocols** including O&M, emergency-response, operator-qualification, and commissioning protocols before in-service operation.
- **Require quarterly public reporting** on cost, schedule, construction impacts, customer and tenant experience, system performance, backup operation, greenhouse gas emission (GHG) reductions, outage events, and lessons learned.

Importantly, the pilots were included in the Utility Thermal Energy Network and Jobs Act to encourage learning and information sharing so that thermal energy networks could be used statewide. This level of redaction and confidentiality is not within the spirit of the law and we urge the Commission to require public disclosure.

I. Pilot Design

a. Technical Feasibility Under UTENJA

National Fuel's public Stage 2 filing demonstrates a technically promising concept. The pilot remains a centralized thermal energy system serving a defined group of residential and municipal buildings in Downtown Buffalo. The public filing describes a central Energy Center, a closed-loop four-pipe UDS, Energy Transfer Stations in participating buildings, integration with the existing Buffalo District System at 39 7th Street, and thermal energy recovery from a 96-inch storm/sanitary sewer main. The filing further states that wastewater will serve as the primary thermal energy source for both the residential buildings and the municipal load, that high-efficiency electric heat pumps in a cascade arrangement will provide temperature lift and chilled water, that gas boilers will be retained for backup and emergency operation only, that residential buildings will no longer use on-site combustion for space heating or domestic hot water, and that the UDS will use ductile iron piping.

This system architecture is valuable because it is not merely a building-by-building electrification project. It tests a central plant, wastewater heat recovery, an existing district heating system, low-income multifamily conversions, and a gas utility operating a new thermal service.

The project also appears to have improved during Stage 2. National Fuel states that updated analysis indicates participating buildings can operate at approximately 160 degrees F heating supply temperature, which would allow the heat pump system to meet anticipated loads without routine gas operation. The filing clarifies that the borefield would provide supplemental heat rejection and seasonal thermal balancing rather than serve as the primary winter heat source.

The public record also contains meaningful residential-design information. Shoreline Apartments consists of 87 low-income apartment units with one- to five-bedroom apartments, and both heat and electricity are included in tenant rent. National Fuel's public residential summary identifies approximately 1,765 MBH of residential heating load, 414 MBH of domestic hot water load, and approximately 70 tons of cooling load. The proposed conversion would replace existing boiler-fed two-pipe fan coil systems with four-pipe fan coil systems supplied by centrally generated hot and chilled water. Four pipes (cold and hot water supply and return) would enter each building and connect to heat exchangers that isolate utility fluid from customer fluid.

The design also raises issues that Staff should closely review in the unredacted record. National Fuel acknowledges that final borefield configuration depends on test bore installation and thermal conductivity testing. The February filing also states that the central plant four-pipe system requires an approximately 2.7 MW electric interconnection and that the design team was awaiting feedback from National Grid on interconnection design and cost. These are not peripheral issues; they go to source capacity, winter peak interaction, cost, schedule, and constructability. The Commission should therefore find that the public filing supports continued development and possible conditional advancement. Commission and Staff access to the unredacted record should yield an affirmative finding that the confidential design materials

validate the public design narrative. It is impossible to meaningfully comment on their consistency without having access to the design materials.

b. Credible Business Model

National Fuel's business model is distinct from other pilots because National Fuel is a gas-only utility seeking to operate thermal infrastructure and recover residual costs from gas customers through an existing Long Term Plan Statement surcharge mechanism. That feature gives the pilot important and valuable policy and regulatory insights. If successful, the project could help demonstrate how gas-only utilities can retain and retrain skilled workers, use existing utility capabilities to build and operate thermal infrastructure, and begin transitioning away from reliance on fossil-fuel throughput in particular locations.

The project also tests a multi-party model involving National Fuel, Beacon Communities, the City of Buffalo, the Buffalo Sewer Authority, National Grid, and municipal buildings. This is realistic for neighborhood-scale thermal networks, but it also requires careful governance. The public filing indicates that the Energy Center would be located on parkland near Buffalo City Hall, that a borefield would be installed on property managed by an affiliate of Beacon Communities, and that wastewater heat recovery would use the existing 96-inch sewer owned and managed by the Sewer Authority. These arrangements require clear property rights, access rights, thermal energy resource rights, construction coordination, O&M responsibilities, and long-term obligations.

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

a. Effectiveness of customer protections

National Fuel's customer protection materials are directionally positive, but should be strengthened before enrollment. The public filing identifies the two primary customers as the City of Buffalo and Beacon Communities and states that the Customer Agreement addresses customer protections consistent with those that apply to National Fuel gas customers, participation and withdrawal options, post-pilot continuation of service, pricing, installation and maintenance responsibilities, and information sharing.

The public record is strongest with respect to participating customer engagement, but less complete with respect to tenant-level protections. Shoreline Apartments are low-income apartment buildings where heat and electricity are included in tenant rent. As a result, the Commission should not treat the building owner alone as the relevant customer for consumer protection purposes. Tenants will experience construction disruption, in-unit or building-level system changes, comfort outcomes, cooling benefits, noise or access issues, and possible downstream rent or utility-cost implications. The Customer Agreement and outreach plan should therefore include enforceable tenant-facing protections, not merely owner-facing rights and responsibilities. The Commission might consult with the New York State Department of Homes and Community Renewal (HCR) to confirm the project is following all protections dictated by the Department.

Before Stage 3 enrollment, National Fuel should provide a plain-language customer and tenant protection summary covering construction access, temporary service, restoration, equipment ownership, post-pilot service, exit rights, complaint escalation, compensation or remediation for service failures, and protections if the system does not meet heating, cooling, DHW, noise, or reliability standards.

b. Best Practices

The Buffalo pilot should incorporate the following best practices as conditions of approval and as templates for future UTEN pilots:

- A plain-language customer agreement and tenant-facing summary distributed before enrollment and before construction access.
- Objective service standards for heating, cooling, domestic hot water, reliability, response time, noise, and restoration after construction.
- A clear no-fault exit or transition pathway after an initial stabilization period, with additional protections if the system underperforms.
- A dedicated complaint and escalation channel with tracking, response-time requirements, and reporting to Staff.
- Disclosure of ownership and maintenance responsibilities for utility-side assets, ETS equipment, customer-side equipment, terminal units, controls, and DHW equipment.
- Construction-impact protections for tenants, including notice, access scheduling, temporary service, safety protocols, and restoration standards.
- Post-pilot continuity provisions that identify who owns, operates, maintains, replaces, or removes equipment if the pilot ends or is transferred.

c. Customer Engagement

National Fuel's engagement record appears substantive. The filing states that National Fuel has engaged Beacon Communities and the City of Buffalo through frequent communication, negotiated site access, arranged site visits, conducted 3D scans of two apartment buildings, evaluated ductwork, discussed use of Beacon property for a test bore and borefield, engaged multiple City departments and two mayoral administrations, negotiated a Memorandum of Understanding, and discussed Energy Center siting, parkland alienation, and documentation.

Those efforts are important and should be credited. But the outreach plan should be made operationally enforceable before Stage 3. The public outreach materials refer to a dedicated multilingual project microsite, direct mail, door hangers, office hours, a dedicated phone line, online contact forms, milestone announcements, and communications for residents within and near the pilot area. Those tools should be required, tracked, and reported. The Commission should require National Fuel to report tenant awareness, complaint volume, first-contact resolution, unresolved issues, construction disruptions, and customer satisfaction using the metrics identified in the filing.

III. Rate Structure

a. Assessment of proposed rates

National Fuel proposes a flat monthly Thermal Energy Fee for pilot participants based on each individual customer's three-year historical average gas bill, discounted for the assumed increase in electric usage once the pilot is in service. The fee would increase annually by an inflation rate during the five-year pilot. The filing further states that customer bills should be in line with what customers' natural gas and electric utility costs associated with operating space-heating equipment would have been. National Fuel also proposes shadow billing to reflect thermal rates that a customer might pay in a theoretical, fully scaled utility thermal energy network. For a pilot, this structure is reasonable as a customer-protection mechanism.

b. Strengths and weaknesses

The primary strength of the proposed rate structure is customer protection. A historical bill-based fee can make participation more understandable and reduce the risk that customers could see unexpected costs from a first-of-kind project. This is especially important at Shoreline Apartments, where heat and electricity are included in rent and tenants may not directly control the customer agreement.

The weaknesses are transparency and transferability. The shadow-billing proposal is therefore essential and should be required as a formal pilot output, with results reported publicly in non-confidential form.

c. Alternative structures

The Commission should require National Fuel to further develop its proposed Thermal Energy Resource Fee. The filing states that the Company is establishing a methodology for a fee that may be paid to customer thermal energy producers for access to thermal energy generated by their systems or property, and that this fee would be recovered as O&M through the UTEN surcharge. This is an important issue for future open thermal networks and third-party thermal energy resources, but the methodology, eligibility, valuation basis, and cost allocation treatment are not yet clear.

IV. Cost Recovery Approach

a. Assessment

The proposed recovery periods are very short and misaligned with asset useful life. National Fuel proposes to recover pilot costs through a surcharge included in the Long Term Plan Statement established in its most recent gas base rate proceeding. The surcharge would recover pilot-related O&M expenses and the revenue requirement associated with capital expenditures, offset by Thermal Energy Fee revenues. The proposed recovery periods are extremely short in duration and inconsistent in the filings. The table on page 66 of the National Fuel Stage 2 Filing (Pilot Project Engineering Design and Customer Protection Plan from February 3, 2026) refers to a one-year return on capital expenditures. The same document then includes a proposal for three years for recovery for deferred O&M from Stages 1 through 3, one year for post-in-service O&M, ten years for return of utility-side capital expenditures, and five

years for return of customer-side capital expenditures. Regardless of whether the proposal is one, five, or ten years, return on capital expenditures should instead be tied to useful life, which is significantly longer. In the LCCA that NFG submitted, asset end of life values for various components of the UTEN range from 20 - 50 years.

The publicly available record does not yet allow stakeholders to evaluate whether estimated bill impact is based on a complete and current cost estimate. The Commission should require National Fuel to reconcile all project-cost figures in a public, category-level format that excludes confidential vendor details but provides meaningful regulatory transparency. The supplemental filing shows a gross cost of \$56,636,030, an assumed investment tax credit of \$21,023,088, and a net cost of \$35,612,943. But the detailed cost estimate is confidential, and earlier public materials and progress reports have used different project-budget figures.

b. Preferred approach

The Commission should require a uniform system of accounts for all UTEN pilots before additional major costs are incurred. At minimum, National Fuel should separately track utility-side UDS costs, Energy Center costs, wastewater interconnection costs, borefield costs, National Grid interconnection costs, customer-side conversion costs, building-envelope or ductwork costs, controls and metering, land and land rights, permitting, internal utility labor, external contractor costs, contingency, ITC treatment, property taxes, O&M, and customer/tenant engagement costs.

Cost recovery should be conditioned on Staff verification that costs are prudent, reasonably necessary for pilot learning, and not the result of avoidable design choices or unresolved scope. The Commission should also establish a cost cap and material-change threshold. If material increases occur, National Fuel should file a public explanation and seek Commission or Staff approval before incurring incremental costs above the threshold.

The Commission should also scrutinize the proposed ten-year recovery of utility-side capital and five-year recovery of customer-side capital. Thermal distribution assets, Energy Center assets, wastewater interconnection infrastructure, and borefield assets are longer-lived infrastructure. The Commission should avoid creating annual revenue requirements that make UTENs appear less economic simply because pilot assets are recovered over artificially short lives.

V. Data Collection, Performance Metrics & Reporting

a. Sufficiency of data collection

National Fuel's proposed performance metrics appear generally responsive to the Staff metrics framework. The filing states that no performance metrics identified through the technical conference process were determined to be unnecessary or not applicable, and that National Fuel proposes additional project-specific metrics focused on flow rates through heat exchangers at thermal energy resource interfaces and customer ETSSs. National Fuel anticipates using onsite pressure and temperature sensors, meters, equipment data outputs, customer electric and gas bills, weather data, customer and end-user surveys, call-center data, and incident reports.

That scope is directionally strong. The Commission should nevertheless require a clear reporting plan that translates raw data into regulatory findings. The key questions are whether the pilot can provide safe, reliable, affordable thermal service; how wastewater, borefield, Energy Center, UDS, and building-side systems perform under peak and shoulder-season conditions; how often backup gas boilers operate; what the system coefficient of performance (COP) and pumping energy are; whether customers and tenants are comfortable and satisfied; and whether the pilot provides replicable information for future UTEN regulation.

b. Balance of cost and value

The Commission should require disciplined, decision-useful monitoring. National Fuel should collect sufficient data to evaluate resource performance, system efficiency, customer outcomes, emissions reductions, and cost. But the monitoring system should not become an unnecessarily costly or non-replicable layer of instrumentation. Where detailed data are expensive, a Staff-approved sampling plan may be appropriate, provided the pilot still produces reliable information on customer comfort, system performance, and peak impacts.

Quarterly public reporting should include at least the following: Energy Center electricity consumption; UDS pumping energy; heat-pump electricity consumption and output; wastewater heat extracted; borefield heat rejected or extracted; gas use for backup or emergency operation; loop and supply/return temperatures; ETS performance; customer and tenant feedback on experience in pilot from origination through the end of the pilot period and beyond, as well as any complaints; service interruptions; construction disruptions; costs incurred; and lessons learned. Annual reports should include at least the following: GHG reductions, criteria pollutant impacts, customer cost outcomes, shadow-billing results, workforce outcomes, and recommendations for future UTEN regulation.

VI. Equitable Electrification

a. Life-cycle cost analysis

The Buffalo pilot appears to address equitable electrification in a meaningful context, including the inclusion of low-income multifamily housing in a disadvantaged community, a legacy district heating system, and NFG being a gas utility seeking to provide non-combustion thermal energy service. It could produce benefits that individual building electrification may not deliver as effectively, including centralized infrastructure, reduced on-site combustion and associated criteria pollutants, cooling access for residential buildings, and union jobs.

However, the LCCA cannot be adequately evaluated based on the publicly available information in the record. Despite the additional submission, a substantial part of the LCCA is still redacted. This is not an acceptable practice when public ratepayer funds are supporting the work. Because of this, there are still several outstanding questions and concerns about the filed version of the LCCA.

- The LCCA excel workbook appears to contain internal assumptions that should be reconciled with the supplemental filing and any Staff guidance. The Prescriptive Inputs tab identifies a 25-year project period, 2.2 percent annual inflation rate, and 7.55 percent real discount rate, while the LCCA tab shows a 24-year LCCA timeframe, 4 percent

financial discount rate, 0 percent inflation rate, 0 percent annual energy increase, and 0 percent annual O&M cost increase. The supplemental filing describes a 25-year analysis using a 4 percent discount rate. These differences may be explainable, but they are material and should be addressed in a public LCCA summary.

- The BAU case appears to exclude electric usage and demand, and the Reporting tab expressly notes that “BAU does not include cooling.” That treatment may understate the real-world value of the UTEN and ASHP cases if those alternatives provide cooling service that is not reflected in BAU. If the UTEN and ASHP cases include cooling benefits and cooling-related electric consumption, the BAU case should include existing or counterfactual cooling-related electric usage and demand, or the analysis should clearly state that cooling benefits are being excluded from the comparison. The Commission should also require National Fuel to report summer peak impacts and explain whether the modeled UTEN electric-demand benefits are driven primarily by winter heating or by the exclusion of comparable cooling assumptions in BAU.
- The model should disclose and support the performance assumptions that drive the results. Based on visible energy input and output values, the implied heating performance appears to be approximately 0.8 for BAU, 1.6 for ASHP, and 2.7 for UTEN. Those assumptions are highly consequential. The Commission should require National Fuel to provide non-confidential support for the assumed seasonal COPs or equivalent performance values for BAU, ASHP, and UTEN, including separate heating, cooling, domestic hot water, pumping, and backup-operation assumptions. Cold-climate heat pumps and ground-source heat pumps have documented performance well exceeding the assumed COPs in the LCCA; 2.39 seasonal COP (sCOP) for cold climate air-source heat pumps (ccASHPs), 3.8 for ground-source heat pumps (GSHPs) in Long Island ([NYSERDA](#)), and 3.6 for GSHPs on average across 49 sites in upstate New York ([NYSERDA](#)). TENs offer the opportunity to design high performing systems with high COPs during design conditions in ways that are not achievable with non-networked solutions. The Company should disclose what design decisions were made that yield relatively low COP during design conditions.
(Appendix H, Reporting tab rows 174–189.)
- The treatment of contingency, property taxes, utility-side costs, and customer-side retrofit costs should be clarified. The visible workbook appears to include BAU replacement/overhaul costs of approximately \$2.97 million and BAU contingency of approximately \$0.89 million, and it includes substantial ASHP customer-side electric infrastructure costs and ASHP contingency. However, the visible capital section does not show a clearly comparable UTEN capital contingency, even though this is a first-of-kind pilot involving an Energy Center, wastewater heat recovery, utility distribution infrastructure, building conversions in occupied affordable housing, and National Grid interconnection. The workbook also shows an annual UTEN property-tax line of approximately \$146,162, with a note that property taxes or site-access fees remain to be determined. National Fuel should explain whether existing BAU assets currently incur property taxes, whether comparable tax or access-fee treatment is applied across scenarios, and why any property-tax assumptions cannot be disclosed in non-confidential form.
(Appendix H, Reporting tab rows 66–107 and 143–172.)
- The workbook should clarify the treatment of individual GSHP. The supplemental filing states that the individual GSHP case was excluded from the LCCA because the

wastewater interconnection and central plant cannot practically be decentralized and because the dense urban environment lacks sufficient ground area for individual borefields. Yet the Appendix H workbook still contains GSHP columns, including some visible KPI outputs. If GSHP is excluded, the public workbook should clearly label the GSHP case as not modeled and non-comparable, and should avoid presenting partial or misleading GSHP outputs.

In sum, the Commission should not reject the Buffalo pilot solely because the LCCA appears to show higher lifecycle cost than the BAU or ASHP alternatives. The project may provide broader equitable-electrification, grid, public-health, workforce, thermal-resource, and gas-transition benefits that are not fully captured in a narrow LCCA. But the Commission also should not approve Stage 3 based on an LCCA that public stakeholders cannot meaningfully audit. Before or as a condition of Stage 3 authorization, the Commission should require National Fuel to file a public LCCA summary that discloses the BAU replacement cycles, ASHP performance and cost assumptions, UTEN costs, UTEN heat-pump performance assumptions, backup-fuel assumptions, DHW treatment, electric interconnection costs, customer-side retrofit scope, ductwork and condensation-control costs, incentives and tax credits, useful lives, residual values, energy-price escalation assumptions, property-tax treatment, contingency treatment, and sensitivity results.

b. Additional considerations

When determining whether this pilot is in the public interest, the Commission should also take into account customer and tenant risk allocation, improved cooling access, reduction of on-site combustion in low-income housing, local public-health benefits, resilience, storage capability and value, service quality, and protection from fuel-price volatility. The proposed design could provide real equity benefits if the system performs as intended and if tenants are protected from construction burdens, comfort problems, and cost pass-throughs.

The Commission should also examine whether the pilot's use of retained gas boilers as backup and emergency resources is consistent with equitable electrification. National Fuel states that the existing gas boilers are no longer intended for peaking in the current design and that heat pumps will meet the entirety of the building load while boilers are used solely for backup. That finding is important and should become an enforceable performance metric, with public reporting of all gas use by purpose.

VII. Labor and Workforce Development

VIII. Pilot Project Impacts

a. Relative to other pilots

The Buffalo project would test a distinct technical configuration and a distinct utility business model, and it may produce lessons that are not available from smaller or more conventional ground-source projects. In particular, the project may yield a vision of how legacy systems can decarbonize and can integrate with other systems.

i. Unique learning opportunities:

The pilot offers unique learning opportunities in wastewater heat recovery, existing district heating optimization, low-income multifamily conversions, centralized heating and cooling, on-site combustion elimination for residential space heat and DHW, integration with a municipal customer, and gas utility workforce transition. The existing district plant deficiencies described in the filing (manual bypasses, lack of pump turndown, poor flow control, improper valve operation, and an incorrectly sized heat exchanger) also make this project a useful test of how UTEN development can improve legacy district energy operations rather than simply install new equipment.

ii. Diversity of design:

The project adds design diversity as compared to other pilots because it is a centralized four-pipe system with wastewater as the primary thermal energy resource, a borefield for supplemental heat rejection and seasonal balance, a central Energy Center, and ETSSs at buildings. This differs from ambient-loop or building-by-building designs and should help the Commission compare system configurations across the pilot portfolio.

iii. Transferability and scalability:

The transferability of the Buffalo pilot is meaningful, even though several enabling conditions are site-specific. Wastewater thermal energy access, parkland proximity, equipment and infrastructure siting opportunities, municipal coordination, affordable housing participation, existing district heating infrastructure, and the nearby 96-inch sewer main will not be present in every future project. But the broader model is more important than the exact site conditions. The pilot demonstrates an important interim step in the evolution from legacy district energy systems to clean thermal energy networks: using an existing district heating context as a platform for modernization, lowering operating temperatures, improving controls, integrating electric heat pumps, recovering wastewater heat, adding borefield-based thermal balancing, and creating a utility-operated thermal service model capable of incorporating additional resources over time.

In that sense, the Buffalo pilot may help define a practical transition pathway for urban districts that already contain pieces of future thermal networks: legacy steam or hot-water systems, anchor loads, affordable housing campuses, public facilities, wastewater infrastructure, geothermal potential, waste heat sources, thermal storage opportunities, and constrained electric systems. Rather than replacing these assets all at once, the project can show how they may be sequenced into a flexible network that begins with anchor customers and resources and later integrates additional thermal energy technologies. The Commission should require a final report that distinguishes site-specific conditions from scalable development principles, including how similar projects can bridge legacy district energy systems and more advanced, multi-resource thermal energy networks.

iv. GHG reductions:

The project is expected to reduce fossil fuel use by displacing residential gas combustion and reducing reliance on district plant boilers, while adding electric load for heat pumps and

pumping. The Commission should require measured emissions reporting that separately identifies pre- and post-UTEN gas use, electric consumption, backup gas operation, thermal energy resource output, UDS pumping energy, and marginal winter peak implications. Projected GHG reductions should be evaluated alongside cost, customer outcomes, and transferability.

IX. Pilot Project Risks and Uncertainties

a. Significance of risks

The Buffalo pilot has significant risks, but they appear manageable if the Commission imposes appropriate conditions. The most important technical risks are thermal-resource validation, borefield sizing, wastewater/wet well integration, the 2.7 MW National Grid interconnection, Energy Center siting on parkland, construction in occupied low-income housing, controls integration, retained boiler backup operation, and long-term O&M capability.

The residential conversion approach presents specific building risks. National Fuel's filing states that the existing ductwork was installed for heating only and is not insulated, and that insulation will likely be required to prevent condensation, water damage within duct chases, and potential mold growth in the event the ductwork was ever used for cooling as well. This issue should be explicitly included in the scope, cost estimate, construction plan, and tenant-protection plan.

The schedule also carries risk. The supplemental filing anticipates Stage 3 approval in Q4 2026, major construction beginning in Q2 2027, and closeout in Q1 2029, with overlapping Energy Center, UDS, sewer interconnection, wet well, National Grid interconnection, and fan coil installation workstreams. National Fuel states that the schedule will continue to be refined as contractor input, long-lead equipment, construction phasing, customer access, seasonal requirements, and operational constraints are coordinated.

b. Risk mitigation

The Commission should require a pre-construction compliance filing that resolves or updates the following issues before major construction spending:

- Completed test bore and thermal-conductivity results, with confirmation of borefield size and long-term thermal energy balancing.
- Geotechnical and civil engineering design validation for the Energy Center, wet well, and UDS.
- National Grid interconnection scope, cost, schedule, and winter peak analysis.
- Final wastewater interconnection, wet well and screening protocols, and Buffalo Sewer Authority approvals.
- Final parkland, easement, access, and property-rights documentation.
- Final controls narrative, backup-boiler dispatch limits, and emergency operation protocols.
- Final customer and tenant construction access, temporary service, notice, restoration, and complaint procedures.
- Final O&M, operator training, emergency-response, and commissioning protocols.
- Updated cost estimate, cost cap, and reconciliation against earlier estimates.