



NEW YORK GEOTHERMAL ENERGY ORGANIZATION

March 27, 2024

Case 23-G-0437 – In the Matter of a Review of the Long-Term Gas System Plans of the Long-Term Gas System Plan of New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation

The New York Geothermal Energy Organization (NY-GEO) submits the following comments regarding the current/revised version of the NYSEG/RGE Long Term Gas System Plan. NY-GEO represents the perspective of ground source heat pump (GHP) system designers, installers, manufacturers, laborers, borehole drillers and other related professions involved. NY-GEO is appreciative of DPS, NYSEG/RGE, CRAI efforts to inform and accept input from stakeholders.

Ground Source Heat Pumps (GHP) need to be part of the LTP; Not just ASHP's. The footnote on pg. 64 indicating that GHP's will be added to the final LTP is very important to meet NYSEG/RGE stated LTP objectives and whether NY-GEO is to support the final plan. The current LTP has no mention of using ground source heat pumps, relying only on a combination of conventional cold climate air source heat pumps as part of a hybrid heating system. Use of ground source heat pumps, the most energy efficient space heating source, makes sense, particularly in NYSEG/RGE territory, given the colder temperatures mentioned in Chapter II of this LTP. The Climate Action's Council's Final Scoping Plan projects that 20 – 23% of heat pumps to be installed statewide will be ground source (Integration Analysis Appendix G. Page 133, table 19). The Integration Analysis recognizes the importance of reliability, safety and affordability as well as the thermal storage capacity of ground loops in dampening peak electric demand. As these benefits become more widely recognized and current federal and state incentives begin to impact the market, NY-GEO believes the percentage of GHP's in New York's heat pump mix will need to be greater than 23%. Therefore, we strongly request a scenario be developed that steadily increases the percentages of installed GHP's up to 50% by 2043 and include a minimum of 23% GHP installations in the final NYSEG/RGE LTP. Finally, the inclusion of a GHP option would be consistent with the Companies' emphasis on customer choice.

Throughout this revised LTP there are several recurring themes which GHP's can positively impact. Those themes include installation cost, operating cost, future uncertainty of technology, grid impact of electrification, reliability and resiliency. NY-GEO perspectives on the relationship to GHP's is below.

Installation and operating costs: In NY-GEO's January 31, 2024 technical conference, the competitive installation cost of GHP's in the companies' territory was discussed by NY-GEO certified installers and compared to cold climate hybrid and cold climate with electric resistance heating air source solutions proposed in the LTP and scenarios. (see the [3/26/24 DMM filing](#) from NY-GEO). Although GHP's were slightly higher to install a complete system, the longer useful life of the GHP, which eliminates more

frequent equipment replacement, makes GHP installations very cost competitive. In addition, the 3/26/24 submission highlighted a 45% energy savings when comparing GHP's to ASHP's.

Future Technology Uncertainty: GHP technology is currently the most efficient technology compared to all other fossil fuel or heat pump technology; often 2 to 4 times more efficient. The only uncertainty is how much more efficient GHP's will become as the industry scales. Noting this pg. 72 sentence "Therefore, NYSEG and RG&E did not base their LTP on the promise of improved technology in the future, but rather technology with evidence of success today", GHP should certainly have a large part in the final LTP.

Grid Impact of Electrification with GHP: The November 2023 Department of Energy [report](#) "Grid Cost and Total Emissions Reductions Through Mass Deployment of Geothermal Heat Pumps for Building Heating and Cooling Electrification in the United States", highlights significant benefits to the electrical grid, electricity savings to all customers, reductions of the marginal cost of electricity, decarbonization and human health. In addition, NY-GEO's 3/26/24 DMM filing contains a [video presentation](#) illustrating grid benefits of GHP's specifically for New York State. This information showing a greatly reduced need for electrical grid buildout should reduce the uncertainty mentioned on pg. 72 which states "achieving these electrification infrastructure targets is uncertain and depends on unprecedented levels of development of electric generation, transmission, and distribution infrastructure."

Reliability/Resiliency: With few exceptions gas heating appliances will not work safely during an electric outage. NY-GEO recognizes that reliability/resiliency is impacted by electric outages. However, NYSEG/RGE's implication on page 53 that gas heating is more reliable/safe during an electrical outage is misleading given that the vast majority of current gas fueled space/water heating and cooking systems are dependent on electrical devices for safe operation. Both gas heating systems utilizing forced air, and boiler systems have electrical components to safely operate them, as do domestic hot water systems and even many gas fireplaces. Suggesting operation of gas appliances without the designed electrical components (i.e. vents for stoves, electric fireplace starters and blower fans, electric smoke alarms) contradicts NYSEG/RGE's stated concern for customer safety. Thus, even a hybrid heating system proposed in the LTP would not operate during an electric power outage.

Other considerations:

Other cost items that should be factored into the LTP include the 30 percent federal tax credit available for the installation of residential ground source heat pumps, the 25 percent New York State geothermal tax credit and Clean Heat program incentives. Each of these cost savings opportunities for contractors and customers positively impact the cost benefit ratio of electrification. The increase of the commercial geothermal tax credit to 30% will also be consequential in the marketplace. In addition, as it is now refundable, non-profit entities like churches, schools and hospitals located in NYSEG/RGE service territory will be able to take advantage of this substantial credit.

The impact of accelerated depreciation is not included in the future cost estimates of gas and thus understates the estimated costs to consumers. Waiting for a future Commission ruling and/or until the next rate case in 3 years or the next required update of the LTP seems contrary to the idea of a long range plan needed today. A realistic (as possible) depreciation estimate needs to be included in this and any future long-term plans and can build upon previous Commission-ordered studies which discussed viable methods such as "units of production."

Use of hybrid fuel systems will be an inconvenience, and a significant expense for customers. Both the electrical and gas supplied heating systems will need to be maintained and replaced at the end of their useful lives, and will consume space in customers' buildings. One reliable system such as a GHP affords customers not only more efficiency and less operating costs, but less need for maintenance and space consumption.

Consideration of a rate plan focused on load factors. One item that should influence customer behavior and market uptake for both GHP and ASHP systems is development of an electric rate that better reflects actual customer delivery costs and is based on load factor. Such a rate being studied by conEdison is known as their “Selective SC1-IV” rate. In their review of customer bills, conEdison found both GHP and ASHP customers saved money by switching to this rate.

NY-GEO concurrence with CRA feedback. Following review of CRA revised plan feedback, NY-GEO agrees with CRA’s recommendations regarding:

- **RNG.** Eliminate dependence on RNG for anything but hard to electrify situations
- **Carbon capture.** Eliminate carbon capture
- **Fixed cost reduction and strategic phase down.** Adjust fixed costs for pipelines and storage to reflect lower gas use projections and develop a strategic phase down of the gas system. The strategic phase down should include NPA possibilities
- **Reduce capital costs.** Lower capital costs due to lower future demand and the lower capital cost of full electrification. Transition to full electrification will lessen the need for safety and reliability expenditures on gas related infrastructure. Leak prone pipe needs should be remedied with non-pipe alternatives. Full electrification should be included in the plan and not just in a scenario.
- **More emphasis on NPA’s.** The Companies should incorporate generic non-pipe alternatives (“NPA”) projects and model their impacts on demand and cost reductions in their Final LTP and all scenarios, drawing from their experience with the NPA process, including those located in areas identified as vulnerable areas.
- **Eliminate hydrogen blending from the LTP** due to the current lack of dependable information on effective performance at a large scale, cost estimates of such an endeavor, knowledge of leakage, safety issues and potential need to factor in transport and leakage of green hydrogen.
- **Benefits Cost Analysis** should include the federal incentives and 3 cost tests should be included in the final plan.

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The New York Geothermal Energy Organization (NY-GEO) is a non-profit trade organization representing geothermal heat pump (GHP) installers, manufacturers, distributors, drillers, consultants and industry stakeholders from throughout New York State and beyond

