NEW YORK GEOTHERMAL ENERGY ORGANIZATION

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

RE: 25-00757/25-M-0248
In the Matter of the 2026-2030 Non-Low- to Moderate-Income Energy Efficiency and Building Electrification Portfolios

Dear Secretary Phillips:

Following our participation in technical conferences held on June 17 and June 26, NY-GEO submits the following comments and data for consideration in the implementation of the order. We aim to contribute to the technical conference's objective to *"gather input from stakeholders on best practices from regional or statewide weatherization programs in other jurisdictions and the strengths and weaknesses of existing New York state weatherization programs in order to inform utility proposals."* NY-GEO is committed to helping the Department of Public Service and New York State achieve the CLCPA decarbonization goals.

Currently, New York State lacks a dispatchable, emissions-free, renewable technology capable of meeting the full electrification needs of the CLCPA. Geothermal technology, particularly ground source heat pumps (GHP's) can be the most cost-effective and efficient strategy to reduce electric generation, transmission, and distribution load, especially during peak times, which is crucial for achieving the CLCPA goals. Allowing buildings to first use initial funds to implement GHP's and subsequently investigate additional/traditional weatherization strategies, will help NYS achieve its climate goals and achieve the objectives of order 25-00757/25/25-M-0248 most effectively.

We recommend that metrics for energy savings should include a strong focus on peak-time energy savings in addition to annual energy savings. Experts from the building performance industry at the June 17 technical conference highlighted that a well-weatherized building can reduce peak-time building load by 20 to 30 percent. Additionally, NYSERDA representatives shared a concern that heat pump installations would be oversized if weatherization was not done first, causing unnecessarily inflated costs. Properly installed variable-speed ground source heat pump technology eliminates the

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need for oversizing. At the June 26 technical conference, NYSERDA representatives declared that traditional weatherization strategies (air sealing, attic insulation, windows) saved between 15 to 20 percent of total energy. Respecting these professionals' opinions, we would appreciate any studies or published data to verify this, since information to date has only been anecdotal. Since heat loss is linear, peak-time savings and total energy savings would have the same percentage, meaning that weatherization would also save between 15 to 20 percent of building load/peak-time energy. Geothermal systems have proven to be a superior strategy for achieving better outcomes than traditional weatherization. Field studies at Zero Place[1] in upstate New York and on Long Island[2] revealed average seasonal energy savings of 72.2% (COP of 3.6) and 73.68% (COP of 3.8), respectively. Sample analysis can be found here. While geothermal systems don't "weatherize" in the conventional sense, these studies show geothermal technology to be a superior strategy to achieve both total and peak-time load reduction. In a recent draft report of creditable data-titled *Geothermal Performance Analysis: Measured Results from Multifamily and Single-Family Applications*, author Hugh I. Henderson, Jr. P.E., Principal & Vice President, Owahgena Consulting Inc., details how geothermal without weatherization can achieve passive house standards in a retrofitted multi-family apartment complex.

"The average EUI of the Autumn Garden facility decreased to 27.8 MBtu per square foot per year after the installation of geothermal heat pumps. The Building Energy Exchange report (BEX 2021) showed that the EUI target for new-construction Passive House multifamily buildings is 30 MBtu per square foot per year. The report further showed that many PHIUS-certified buildings were not actually meeting this target based on measured energy use. The Lockport apartment complex is an existing facility that was only retrofitted with a geothermal system and it exceeded the PH EUI target as well as the measured performance of other new PHIUS-certified new facilities. This implies that retrofitted geothermal systems can in some cases have energy impacts in multifamily that are equivalent to Passive House designs."

Utility programs should incentivize the reduction of peak-time energy use and reward projects/programs based on their value to the grid.

When evaluating the installation costs of energy-saving technologies, the associated peak-time energy savings should be a primary factor in the decision-making process. The longevity of the equipment and materials, as well as their replacement costs, should also be considered alongside upfront expenses. Although ground source technology was mentioned as too expensive to install during the technical conference on June 17, NY-GEO recently presented real-time data demonstrating that this is not always the case at the NYSERDA - Residential Market Advisory Group (RMAG) 2/27/25 meeting[3]. (Please note the original presentation data is obscured on the RMAG slides - see pg. 7 of the full presentation HERE) Additionally, any calculation of building load reduction costs must

factor in the avoided costs of expensive electric generation, transmission, and distribution infrastructure, as well as the positive value of energy storage. Finally, both short and long-term operational expenses should be a significant consideration when making decisions about energy-saving programs. For additional calculation models, please visit the International Ground Source Heat Pump Association's tools at Peak Demand Calculator and NEEP Load Calculation tools.

In summary, NY-GEO reiterates our desire to share best practices, strengths and weaknesses regarding weatherization and electrification. Based on published data, ground source heat pump technology is the "best first cost" when allocating funds provided under Order 25-00757/25-M-0248: In the Matter of the 2026-2030 Non-Low- to Moderate-Income Energy Efficiency and Building Electrification Portfolios. Our data points out that a geothermal installation without weatherization measures can often outperform a combined air source/weatherization project in terms of cost, comfort, energy savings, peak savings, and cost to the grid. Proceeding with a framework that excludes geothermal as "too expensive", prioritizes weatherization as a "first expenditure" wastes ratepayer money and hinders achieving our climate goals.

Thank you for the opportunity to provide this information in an attempt to help maximize the saving of monetary and energy resources. NY-GEO staff, board and members are available to answer any questions and share ideas to help this worthwhile effort.

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[1]https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Publications/Research/Other-Technical-Reports/24-37-ff.pdf

[2]https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Publications/Research/Other-Technical-Reports/24-04-Field-Monitoring-Ground-Source-Heat-Pumps-on-Long-Island-acc.pdf

[3] https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/EIBD/RMAG/RMAG-Q2-2025-Presentation---Final.pdf

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