



NEW YORK GEOTHERMAL ENERGY ORGANIZATION

April 23, 2026

The Honorable Michelle L. Phillips
Secretary
New York State Public Service Commission
Three Empire State Plaza
Albany, N.Y. 12223

Subject: Comments on CASE 15-E-0302 – Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Energy Program and Clean Energy Standard.

Dear Secretary Phillips:

“First Rule: Reduce Demand, then Increase Supply:” [Paul Torcellini](#) (National Laboratory of the Rockies, formerly NREL)

Paul is the principal engineer for the Commercial Buildings Research Group and has been at NLR since 1994. Paul has authored or co-authored more than 50 papers and articles related to energy efficiency and zero-energy commercial buildings. Paul has been key in the development of the Advanced Energy Design Guide series from ASHRAE and has chaired two of the guides for K-12 schools and grocery stores.

“What you get from the ground you don’t need to get from the grid.” “Geothermal Heat Pumps (GHP’s) are a combination of load reduction, peak time shaving and energy storage (the ground around the underground loop functions as an energy battery). Geothermal heating and cooling is proven to be affordable, reliable and the most efficient way to heat and cool buildings.” Jens Ponikau (NY-GEO).

Jens is the co-owner of Buffalo Geothermal Heating, a geo design and installation firm that installs between 90-100 systems per year. He is an International Ground Source Heat Pump Association (IGSHPA) accredited geothermal installer and geo-exchange designer with a doctoral degree from the University of Hamburg, Germany.

These commonsense concepts/quotes form the basis for The New York Geothermal Energy Organization’s (NY-GEO) comments on CASE 15-E-0302 – Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Energy Program and Clean Energy Standard.

NY-GEO is a not-for-profit trade association, founded in 2014 representing the geothermal heat pump (GHP) industry in New York State, and dedicated to promoting geothermal heating and cooling. Our 255 members include geothermal system designers, installers, drillers, general contractors, engineers, manufacturers, distributors, laborers/labor unions, renewable energy consultants and industry stakeholders who install and advocate for the use of ground-source heat pumps to heat and cool buildings throughout New York State.

In response to The Coalition for Safe and Reliable Energy's petition, NY-GEO, on behalf of our members, finds there is **no need** at this time to hold a hearing pursuant to Public Service Law ("PSL") § 66-p (4) to evaluate whether to temporarily suspend or modify the obligations under the Renewable Energy Program established as part of the Climate Leadership and Community Protection Act ("CLCPA"). Geothermal Heat Pumps (GHP) are a key, currently under-appreciated technology that can go a long way toward solving the reliability issues raised by the Coalition's petition.

There are many variables to be considered regarding whether renewable energy generation, reliability and reduced emissions goals can be attained by target dates stated in the CLCPA. To NY-GEO, **the key consideration is whether safe, reliable and adequate renewable energy supply will meet energy demand.** According to the Coalition's petition, DPS staff determined that required demand in 2030 would fall short of the predicted supply

An important note is that the CLCPA definition of "renewable energy systems" includes energy from the ground, thereby allowing geothermal heating and cooling systems (a.k.a. ground source heat pumps or geothermal heat pump systems) to be included in goal attainment solutions.

*CLCPA definition of Renewable Energy systems: "Renewable energy systems" are defined as "systems that generate electricity or thermal energy through use of the following technologies: solar thermal, photovoltaics, on land and offshore wind, hydroelectric, geothermal electric, **geothermal ground source heat**, tidal energy, wave energy, ocean thermal, and fuel cells which do not utilize a fossil fuel resource in the process of generating electricity."*

Geothermal heat pump (GHP) deployment is a demand-side strategy that reduces the electricity the grid must supply — without adding generation of any kind. Deploying GHP units at scale across New York's building stock can offset a significant amount of the deficit, eliminate the policy vulnerability, and make the CLCPA's renewable portfolio more achievable, not less. The technology is proven, commercially available, federally incentivized, and supported by DOE technical analysis.

Also, NY-GEO notes there is a complete lack of inclusion in the Coalition's petition and NYISO's referenced reports/forecasts of the substantial energy/electricity demand reduction geothermal/ground source heating and cooling can contribute. The Coalition's participant list identifies no organization with the ability to articulate the energy benefits of geothermal ground source heating and cooling. Overestimation of air source heat pump installations, whose efficiency drops precipitously on the coldest and hottest days of the year would contribute significantly to the demand. One must wonder why state agencies such as NYISO and NYSERDA aren't petitioning for modifications to program obligations when it is their role to ensure reliability.

As alluded to in the Coalition's petition, in addition to safety, reliability and adequacy; dispatchability, sufficient transmission capability, pace of implementation, capacity reserve and affordability are very important for success. NY-GEO agrees with the staff statement that *"dispatchable emission-free resources ("DEFRs") will be necessary to replace fossil-fuel generation"*, but disagrees with staff's statement that *"while essential to the grid of the future, such DEFR technologies are not commercially viable today at the necessary scale."* The Coalition and staff define DEFR's as *emission-free resources that can be reliably dispatched to provide both energy and capacity over long durations. They are crucial for meeting energy demands when intermittent renewable sources like solar and wind are unavailable. (NYISO 2025 Power Trends at 25.)* **Geothermal systems, because of their demand side efficiency and load shaping capacity, reduce net load and reduce peak demand. As a result, GHP's should be considered the same as DEFR's or as a credible mechanism to reduce the need for DEFR capacity. When buildings are electrified using GHP's they become dispatchable resources. Recognizing GHPs as DEFRs opens up the possibility of considering "behind-the-meter" demand-related solutions rather than just "utility-scale" supply-related ones.**

NY-GEO's Board of Directors, with the full support of our membership, opposes this petition, strongly believing changes should not be made to the Renewable Energy Program until all options, besides just supply-side options, have been thoroughly evaluated and practically tested. Several of those options are mentioned in this document. NY-GEO members believe that if a goal looks harder to achieve than originally anticipated, the initial response is to work harder, try new ideas and continue innovating/learning, not make the goals easier to achieve. We think the coalition's arguments are too narrowly focused on supply when there are many demand-based reasons to keep current program goals in place. Petitioners attempt to make a case that staying the current course is too costly, but NY-GEO believes softening current program goals will result in much greater future costs including costs to municipalities. The following are reasons why ground source heat pump technology is a credible, proven and effective way to balance energy supply (both current and future) with demand, thus negating the need to temporarily modify the renewable energy program AND accelerating the growth of GHP's.

Geothermal is safe/emissions free: Operating geothermal heating and cooling systems do not require on-site combustion of fuels and have no emissions from burning fuels because they are powered by a small amount of electricity (compared to other electric heating such as resistance heating and air source heat pumps at peak times). Therefore, risk of fires and indoor pollution is minimal. Installation processes have professional guidelines and are regulated by state and local agencies. Projects require permits and inspections confirming safety and emissions reductions.

Geothermal is reliable and resilient: The 25-year useful life of a GHP far exceeds other on-site emission free technologies such as air source heat pumps (15 years) and traditional AC units (12 to 15 years) that are exposed to outside air. The heating and cooling sources (i.e. ground loop, water, sewer system heat, other buildings) equipment/materials have useful lives exceeding 50 years.

Geothermal is adequate and more immediate: NYISO predicts a 2030 deficit. Using information from page 60 of the U.S. Department of Energy's [Pathways to Commercial Liftoff: Geothermal Heating and Cooling](#), deploying demand reducing GHP units across New York's

building stock directly reduces electricity demand, eliminating the shortfall without adding generation, and making the CLCPA's renewable portfolio more achievable, not less. Closing the deficit through supply additions alone would require substantial new generation capacity, carrying long lead times, capital requirements, and permitting risk. A demand-side strategy avoids all three.

Capacity Reserve; The consistent efficiency of geothermal systems minimizes increases to baseload and reduces peak load compared to electric resistance and air-source alternatives, thereby avoiding expensive infrastructure build-out. The ground temperature remains relatively constant year-round — a stable thermal environment that sustains high GHP operating efficiency regardless of outdoor conditions. Unlike air-source heat pumps, whose efficiency degrades precisely when winter heating demand peaks, GHPs maintain their rated efficiency during the coldest hours, reducing the coincident peak draw on the grid. The earth itself functions as a continuously replenished thermal resource: energy exchanged with the ground is naturally restored through solar gain and geothermal gradient, supporting reliable year-round operation. As stated in this [GEOEXCHANGE article](#), the EPA estimates GHPs reduce electricity consumption by up to 72% compared to electric resistance heating and up to 44% compared to conventional ASHPs — advantages that translate directly into reduced peak demand during both winter heating and summer cooling seasons.

GHPs function as a virtual power plant Each installed ton permanently reduces electricity the grid must generate or import. The DOE Liftoff Report calculates approximately a 2.3 GW summer peak reduction and a 7.6 GW winter peak reduction for New York. Reducing winter peak demand by an estimated 7+ GW eliminates the need for **dozens of fossil fuel peaker plants** that would otherwise be required to maintain grid reliability — directly protecting the CLCPA's zero-emission trajectory.

Geothermal is readily dispatchable and close to where it's needed: Ground Source Heat Pumps utilize a “source/depository “of thermal heat or cooling to be efficient. Thermal heating/cooling sources include the ground, on site water, sewer heat or other structures/buildings which are permanent and perpetual. These “ever present” on-site energy sources are dispatched during peak-time demand, either automatically to meet a thermostat setting, or as otherwise determined by operator decisions. These resources can also be left in “storage” when not needed.

It should again be recognized that every electrically cooled or heated building is, in fact, a dispatchable demand resource. This is already recognized in the Demand Response programs such as Con Edison's CSR and LDRP programs. However, today, Demand Response is only used to respond to insufficient supply. The PSC should require utilities to expand their Demand Response programs to include "Environmental Dispatch Events (EDE)," which would be triggered in response to NYISO day-ahead marginal emissions predictions. NY-ISO's important and effective marginal emissions program has the potential to reduce generation and transmission demands, plus emissions, as well as giving utilities options to more effectively manage customer bills/reward customers during peak temperature times.

Lower capital costs; Geothermal eliminates transmission development/buildout needs. Because highly efficient ground source heating and cooling installations utilize on site sources/depositories (ground, water, sewer heat, other buildings), additional electric transmission

and distribution infrastructure is not required resulting in more affordability for rate payers and utilities. Because GHP's are electric, they eliminate the need for gas heating infrastructure in the home, and when combined with electric cooking, clothes drying and water heating appliances, they eliminate the need for expensive gas infrastructure connecting the home to the gas main. Installed neighborhood-wide, either individually, via thermal energy networks (TENS) or as thermal aggregation networks (TANS), GHP's eliminate the need for expensive gas mains, gas service lines and leak prone pipe repairs/replacements. The average per-foot cost for leak prone pipes made public in the recent ConEdison rate case was \$ 1,166 (\$6,156,480 per mile). Also, TEN's and TAN's increase the demand response potential.

Geothermal's versatility makes it more cost effective. A geothermal heat pump system has the capability to provide space heating as well as air conditioning and hot water heating; "three systems for the price of one" which saves customers from multiple in-home/in-building distribution and energy supply infrastructure costs.

Geothermal is proven; risks are minimized. Ground source heat pump technology is not new. GHP's have been successfully used for high levels of energy efficiency in thousands of structures throughout the world for over 75 years. The first commercial ground-source system in the US was installed in the Commonwealth Building in Portland, Oregon, in 1946.

Geothermal is immediately available and scalable: Geothermal projects, both individual systems and thermal energy networks (TEN's) are gaining popularity in N.Y. and around the world. Investment in GHP's, and related technology, is continually increasing. Project planning and installation times are much shorter than alternative electric generation and transmission/distribution technologies. In addition, Federal Law that makes it possible to provide third-party owned or operated geothermal systems is expected to dramatically increase capital investment in the technology and accelerate adoption.

Geothermal installation and operational costs are known and affordable: NY-GEO certified installers note that many variables impact system affordability, especially when comparing GHP's with other technologies. These include installation costs, operational costs (maintenance, electric rate variability), short- or long-term outlook by purchaser, available incentives, type and age of building, age of existing system equipment (if not a new build), expected useful life of new equipment, permitting fees, local/regional market factors, utility infrastructure savings, safety, personal and environmental health costs, etc. As previously mentioned, third-party ownership could positively impact customer costs/acceptance as it did for the rooftop solar industry. Recognizing these factors, NY-GEO has documented many times the superior affordability and savings of GHP systems. When all factors are considered, we are very confident geothermal is the most affordable option in the majority of situations for individual, utility and state stakeholders.

Summary: We urge the Public Service Commission to **reject** this petition. The New York Geothermal Energy Organization's staff, board and members are anxious to become partners with generators, utilities and consumers by providing assistance in meeting the original CLCPA goals by "first reducing demand" through the large-scale installation of ground source heat pumps/geothermal systems. GHP's are a the best existing, dispatchable, demand side reduction, emission free, renewable technology capable of achieving NY's building decarbonization goals

with minimal grid impact. NY-GEO members do not oppose a realistic assessment of 2030 CLCPA timelines. What we oppose is the conversion of a scheduling challenge into a policy surrender. A timeline extension that preserves the original target and pairs it with explicit demand-side deployment mechanisms, including GHP incentives, is a credible path to CLCPA achievement. Target reduction is not a path to achievement. It is a path to continued fossil fuel dependency.

NOTE: Heat or cooling (also known as thermal) energy and electrical energy are both forms of energy and can be described using the same term of watts, kilowatts or kilowatt hours. This allows for easier comparison of energy saved (between a BTU and a kilowatt). A British Thermal Unit of energy is the same amount of energy as .293071 Watt-hours (Wh). Phrased another way, there are 3.41214 BTUs in a Watt-hour or 3,412.14 BTU 's in a kiloWatt-hour (kWh). The same conversion factors can be used to compare peak energy. Using the same terminology for units of energy helps in comparing both the thermal energy produced and the peak energy saved by a geothermal system compared with a gas furnace, air source heat pump or an electric resistance heater. It also makes it easier to consider both the inputs and outputs of a geothermal system, with the difference equaling the amount of energy produced from the ground loop. **NY-GEO continues to recommend that DPS move toward consistently expressing units of energy and demand in kWh and kW to allow easier comparisons of energy used and saved as NY decarbonizes buildings through electrification.**

John Rath
Director of Operations
NY-GEO
cell 817 442-8418

About NY-GEO: 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.