NEW YORK STATE

PUBLIC SERVICE COMMISSION

CASE 24-G-0248 In the Matter of a Review of the Long-Term Gas System Plans of The Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, and Niagara Mohawk Power Corporation d/b/a National Grid.

COMMENTS BY ROGER CAIAZZA REGARDING NATIONAL GRID FINAL GAS SYSTEM LONG-TERM PLAN

April 17, 2025

I am submitting comments on the National Grid Final Gas System Long-Term Plan ("LT Plan") as a National Grid customer who relies on natural gas to provide affordable, reliable and resilient energy to my home. There is insufficient consideration of the enormous challenge of the Climate Leadership & Community Protection Act (Climate Act) transition to a zero-emissions energy system in the LT Plan. It is premature to implement the LT Plan provisions until Public Service Law safety valve metrics for affordability and reliability are established. I have also included a technical comment on the incorrect calculation of the societal cost calculation of avoided GHG emissions.

Safety Valve Criteria

I believe it is premature to implement the transition plan outlined in the LT Plan until metrics for affordability and reliability are established. The LT Plan does not acknowledge the safety valve requirements in New York Public Service Law § 66-p (4). "Establishment of a renewable energy program". Section 66-p (4) states: "The commission may temporarily suspend or modify the obligations under such program provided that the commission, after conducting a hearing as provided in section twenty of this chapter, makes a finding that the program impedes the provision of safe and adequate electric service; the program is likely to impair existing obligations and agreements; and/or that there is a significant increase in arrears or service disconnections that the commission determines is related to the program".

As the author of the Pragmatic Environmentalist of New York blog I have followed the Climate Act since it was first proposed, submitted comments on Climate Act implementation plans, and have written over 500 articles about New York's net-zero transition. I am convinced that implementation of the Climate Act net-zero mandates will do more harm than good because the proposed green energy programs are crimes against physics. The energy density of wind and solar energy is too low and the resource intermittency too variable to ever support a reliable and affordable electric system relying on those resources. Without a viable electric system any plans to replace natural gas are premature.

I believe that as part of the Scoping Plan process the Climate Action Council should have developed criteria for the Public Service Law affordability and reliability mandates in Public

Service Law Section 66-p (4). That did not happen. it is incumbent upon the Commission to define "safe and adequate electric service" and "significant increase in arrears or service disconnections" before the LT Plan is implemented. It is irresponsible to begin replacement of the existing resilient, reliable and affordable natural gas system without assurances that New York has a viable zero emissions electric system transition plan.

Reliability

I am particularly concerned about reliability. I moved to Liverpool, NY in June 1981 and lived through two extended electricity outages: the Labor Day storm of 1998 and an ice storm in April 2003. I have never had an natural gas outage since 1981. As I write this there are still electric over 3,000 customers in Michigan in the dark after an ice storm 17 days ago. Keeping the heat on in cold weather is a life and death situation and natural gas is a resilient resource. During our ice storm I relied on the natural gas furnace, stove, and hot water with a portable generator to survive. Because of this concern, I have installed a whole-house generator so that I can stay alive when another ice storm inevitably occurs.

The LT Plan notes the National Grid commitment to climate action: "National Grid's vision is to be at the heart of a clean, fair and affordable energy future." I think it is an egregious dereliction of responsibility that National Grid's vision does not mention safety or reliability. The LT plan does mention safe and reliable energy at another point at the same time that it panders to the Climate Act narrative: "Climate change is the defining challenge of our time, and, as set forth in this Long-Term Plan, the Company will play a critical role in rising to that challenge while continuing to provide the safe and reliable energy required to meet customers' needs."

The LT Plan does not mention that the replacement of natural gas with electric systems will be viable only if the electric system is reliable. As noted above, there are electricity deliverability issues associated with extreme weather events that are not present with natural gas delivery. The biggest unacknowledged reliability risk associated with glacial pace of agency progress is addressed in Case 15-E-0302 – Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and Clean Energy Standard. New York agencies all agree that new Dispatchable Emissions-Free Resource (DEFR) technologies are needed to make a solar and

wind-reliant electric energy system viable during extended periods of low wind and solar resource availability. Case 15-E-0302 is supposed to address this technology because no such technology is currently available. I believe the only likely viable DEFR backup technology is nuclear generation despite its shortcomings because it is the only candidate resource that is technologically ready, can be expanded as needed, and does not suffer from limitations of the Second Law of Thermodynamics.

There are inherent weather variability planning risks associated with non-nuclear DEFR technology that is problematic as long as New York continues to champion an electric system dependent upon wind and solar resources. It is necessary to determine how much DEFR capacity is needed for wind and solar resource lulls using as long record of weather data as possible. That has not been done and there is nothing in place for it yet, but analyses done to date suggest that resource capacity equivalent to existing fossil resources will be needed.

The bigger problem is that electric system resource planners for today's conventional system base the amount of capacity that they think will be needed based on decades of observations of the performance of conventional power plants. The result is that they are confident how much reserve capacity is needed to meet the highest expected load. Planners calculate the installed reserve system capacity margin as a fixed percentage of the expected load in a process that has a proven reliability record. In New York State the installed reserve margin to meet the accepted probability of a loss of load expectation of an outage no more than once in ten years reliability metric is around 20%.

A fundamental observation is that there is no expectation that the failure of conventional power plants will be correlated. In other words, we do not expect that many will fail at the same time. That in turn means that even if we decided to set the reliability metric based on a one in thirty-year probability that there would not be much of an increase in the installed reserve margin.

That all changes when the electric system transitions to one dependent upon wind and solar weather-dependent resources. We know that solar energy is zero at night and much lower in the winter. Similarly, we know that wind energy is much lower in a high-pressure system, and that

those systems are huge and can cover all of New York and much of eastern North America at the same time. Exacerbating the problem is the fact that those conditions are associated with the hottest and coldest episodes with the greatest expected electric loads. Finally, weather variability is so great that eventually the resources allocated will be insufficient to provide the energy needed for a more severe resource lull. All these reliability issues need to be resolved before we will know if natural gas can be safely replaced by a "zero emissions" electric system.

Affordability

I recently submitted a letter in relation to Public Service Commission (PSC) Proceeding 22-M-0149 "Assessing Implementation of and Compliance with the Requirements and Targets of the Climate Leadership and Community Protection Act" regarding an affordability standard. In the letter I argued that the Climate Act mandates to provide annual information on Climate Act costs had to be fulfilled as soon as possible. I also explained that the responses to date by the Department of Public Service were inadequate and exposed cost reporting issues.

One of the unrealized impacts of the Climate Act is the enormous, expected costs. The average monthly increase for NMPC residential bills in Table 12-11: NMPC Bill Impacts by Scenario range from a 65% increase to a 148% increase by 2030. It is inconceivable that those costs when combined with similar increases in electric costs will not result in a significant increase in arrears or service disconnections that exceeds the Public Service Law Section 66-p (4) safety valve. It is long overdue for National Grid and the PSC to acknowledge these costs to ratepayers and for the PSC recognize that its mission to ensure "affordable, safe, secure, and reliable access" to electric and gas services is incompatible with the Climate Act mandates.

The DEFR requirement and weather variability risk described in the previous section also have affordability implications. Until a DEFR strategy is proposed we have no idea how much this will all cost so any claims that the Climate Act will be "affordable" are incomplete. Because any DEFR backup resource will be used so little and will be so expensive there will be inevitable tradeoff considerations for the rarely used backup resource. The result will be pressure to minimize the costs associated with DEFR backup capacity which will increase the probability of a catastrophic blackout which will be exacerbated if natural gas is prohibited.

Societal Cost Test ("SCT")

I have also included a technical comment on the incorrect calculation of the societal cost calculation of avoided GHG emissions.

I believe the SCT methodology over-estimates the benefits of the societal impacts of greenhouse gas emissions. As far as I can tell, the National Grid Long-Term Gas System Plan report calculates the societal benefits based on avoided emissions. I believe the reference to "avoided" emissions means that the emission reductions for the different scenarios are accumulated out to a specific date. I also evaluated the latest NYS GJG emissions inventory and found that the New York State total GHG emissions from the buildings and industry sectors were 84.5 million metric tons in 2021. In that year the NYSERDA Patterns and Trends report showed that National Grid sold roughly half the natural gas in New York. Based on that I assume that National Grid emitted 42.2 million metric tons in 2021. Table 8-8: GHG Emissions Reductions by Scenario and Operating Company in the LT Report lists emissions ranging from 223.8 to 1,239 million metric tons which far exceeds the observed 2021 emissions.

Calculations of avoided emissions benefits consider reductions over some time frame. It is inappropriate to claim the benefits of an annual reduction of a ton of greenhouse gas over any lifetime or to compare it with lifetime avoided emissions. The value of a GHG emission reduction is based on all the damages that occur from the year that the ton of carbon is reduced out to 2300. The correct societal benefit can be no more than the current GHG emissions times the social cost of carbon. Clearly, using cumulative values for this parameter is incorrect because it counts those values over and over. That is equivalent to me saying I lost 25 pounds because I lost 5 pounds five years ago and kept it off. I contacted social cost of carbon expert Dr. Richard Tol about my interpretation of the use of lifetime savings and he confirmed that "The SCC should not be compared to life-time savings or life-time costs (unless the project life is one year)".

Conclusion

National Grid has developed a long-term plan to replace natural gas with electricity. Their plan does not acknowledge that this is a safe and viable approach only if the future electric system is reliable. In my opinion, the feasibility of a wind and solar dependent electric system has not been proven. The Scoping Plan zero emissions electric system needs a new resource, we don't know how much of that resource is needed, what it will be, or how much it will cost, and that whatever we do eventually it won't be enough so people will die in a catastrophic blackout.

It is imprudent for the Commission and National Grid to continue this long-term plan to eliminate natural gas until the affordability and reliability mandates in Public Service Law Section 66-p (4) are defined and evaluated. I have no doubts that the mandated evaluation will find that the Climate Act impedes the provision of safe and adequate electric service and will cause a significant increase in arrears or service disconnections that result in suspension or modification of the Climate Act mandates including the long-term shutdown of the natural gas system. It is therefore irresponsible to begin the replacement of the existing resilient, reliable and affordable natural gas system until New York has a viable zero-emissions electric system available. The LT Plan should acknowledge this prerequisite to implementation.