BEFORE THE NEW YORK STATE
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard	)	Case 15-E-0302

SIERRA CLUB AND EARTHJUSTICE'S COMMENTS IN RESPONSE TO COMMENTS OF ROGER CAIAZZA

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Earthjustice and Sierra Club ("Commenters") respectfully submit these limited comments in response to the June 2024 submission of Mr. Roger Caiazza. Commenters submit this brief letter both to respond to certain assumptions in Mr. Caiazza's submission, as well as to highlight points of agreement. While Commenters do not dismiss the possibility of a Dispatchable Emissions-Free Resource ("DEFR") gap emerging, investments in inter-regional transmission capability and coordination, and demand side management have the potential to decrease the size of the DEFR gap. By contrast, Mr. Caiazza's submissions and the models he relies on reflect conservative assumptions about the potential DEFR gap that may be significantly overstating the total need, while simultaneously giving optimistic assessments of particular technologies – like hydrogen combustion turbines – to meet that need.

I. Commenters Reiterate that the Size of the DEFR Gap is Likely Overstated.

First, Mr. Caiazza states that "there is a very high level of correlation of wind in New York."[1] While that may be true today, there is a limited amount of installed capacity (2.7 GW at the end of 2023).[2] Future wind installed in NYISO is likely to be significantly more diverse as geographic concentration of new wind plants decrease.[3] There is no reason to believe that wind speeds offshore of New York City, Long Island, and the Massachusetts Cape will be significantly correlated with land-based wind resources located in Upstate New York. Extrapolating current wind correlation for a small fleet to a future system overstates the correlation concerns. Furthermore, New York is interconnected with neighboring systems, so correlation in wind production across Ontario, Quebec, and New England is more relevant when considering reliability risks associated with wind lulls.

Second, given the conservative assumptions on load and resource availability made in the data presented at the technical conference, it is highly likely that DEFR need is overstated rather than understated. While it is certainly possible that historical data underestimates wind lulls coinciding with high load periods, industry professionals advise against using overly conservative assumptions when performing system stress testing.[4] The stress tests presented as the basis for the DEFR gap analysis are founded on overly conservative weather assumptions rather than plausible extreme weather events and are therefore likely to overstate the DEFR gap.

Third, Mr. Caiazza maintains that recent NYISO reports using correlated wind, solar, and load data reflect a large DEFR gap.[5] The most recent NYISO report is the 2023-2042 System and

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[1] Comments of Roger Caiazza at 5, NY PSC Case No. 15-E-0302 (June 18, 2024) (hereinafter "Caiazza Comments").
[2] NYISO, NYCA Renewables 2023 (Apr. 22, 2024), https://www.nyiso.com/documents/20142/44245247/2023%20NYCA%20Renewables%20Presentation%20FINAL_date_revised.pdf/5caaee89-b478-1b7a-be4b-b5250012adf0.
[3] NYISO, New York State Electric System Map (2023), https://www.nyiso.com/documents/20142/44646498/05c_CY23Projects_Full+CRISOnly_Map_TPAS_OC.pdf/60e0d86c-c05f-4db6-a458-7838f8f2d8e1.
[4] ESIG, A New Resource Adequacy Criteria for the Energy Transition (Mar. 2024), https://www.esig.energy/wp-content/uploads/2024/03/ESIG-New-Criteria-Resource-Adequacy-report-2024a.pdf.
[5] Caiazza Comments at 7.

Resource Outlook ("SRO").[6] The SRO results indicate that a DEFR buildout of 30-40 GW in some scenarios is warranted.[7] However, the resource buildout in the SRO is based on the cost to build each resource type rather than the results of a resource adequacy model. Assumptions on DEFR cost relative to the cost of renewables and batteries have a significant impact on the DEFR capacity buildout. Given the uncertainty of DEFR resource build costs, a 30-40 GW buildout requirement for DEFRs is not a given. In fact, in the "State Scenario" the NYISO evaluated DEFR resource buildout was approximately half of the DEFR buildout in other scenarios.[8] In addition, the longest duration battery resource evaluated by NYISO in the capacity expansion model was 8 hours. It is possible that if longer duration storage resources (>24 hours) were evaluated in the capacity expansion model, buildout of long duration storage resources would have lowered the DEFR buildout. Lastly, the DEFR's in the capacity expansion model used hydrogen for fuel, but did not include the capital costs of the infrastructure necessary to transport and/or store hydrogen fuel, nor did it assess the seasonal variation in hydrogen production and offtake needs. Inclusion of these costs and chronological modeling of hydrogen fuel production and consumption would significantly increase the Capital Cost of DEFRs and therefore decrease the DEFR buildout identified by the capacity expansion model.[9,10,11] The sensitivity of the DEFR buildout to resource build costs as described above call in to question whether the precise results of the capacity expansion model can be relied upon to identify the DEFR need.

Fourth, while increasing inter-regional transmission coordination and capability is unlikely to remove the gap, it can certainly decrease it. In fact, evaluating the ability of neighboring grids to contribute to maintaining reliability is recommended by resource adequacy practitioners.[12] New York State could expand connections with PJM (an RTO that spans a large geographic area yielding load and resource diversity) and Canada (Hydro Quebec, IESO) which has significant hydro resources. Champlain Hudson Power Express (CHPE) is an example of how expansion of inter-regional transmission capacity could improve reliability.[13]

Fifth, while energy efficiency and demand side management will not by themselves eliminate the DEFR gap, it is possible that energy efficiency measures and demand side management can decrease the size of the gap. Energy efficiency measures contributed to a 52% decrease in electricity use in buildings in 2021.[14] Further investments in energy efficiency could

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[6] NYISO, 2023-2042 System & Resource Outlook (The Outlook) (June 27, 2024), https://www.nyiso.com/documents/20142/45442281/Draft%20Report_2023-2042_System_Resource_Outlook_revised_redline.pdf/6f8dd3fb-8061-e535-e7a1-3708735c0736.
[7] *Id*.
[8] *Id*.
[9] Bayo Tech, Bulk Hydrogen Transport Trailers, https://bayotech.us/bulk-hydrogen-transport-trailers/ (last visited July 18, 2024).
[10] Air Products, Liquid Hydrogen at 2 (2014), https://www.airproducts.com/-/media/files/en/900/900-13-082-us-liquid-hydrogen-safetygram-9.pdf.
[11] Based on a 60 MW SGT-400 plan with four 15 MW units at $1,000/kW, a 500 bar gaseous hydrogen tube trailer at $680,000/trailer, or a 4,300 kg liquid hydrogen tank at $1,400,000/tank.
[9] ESIG, Redefining Resource Adequacy for Modern Power Systems (2021), https://www.esig.energy/wp-content/uploads/2022/12/ESIG-Redefining-Resource-Adequacy-2021-b.pdf.
[13] Chaplain Hudson Power Express, https://chpexpress.com/ (last visited July 18, 2024).
[14] U.S. Dep't of Energy, Decarbonizing the U.S Economy by 2025; A National Blueprint for the Buildings Sector (Apr. 2024), https://www.energy.gov/eere/articles/decarbonizing-us-economy-2050.

reduce demand and decrease the DEFR gap. In addition, the flexibility of large loads, of which a large portion will be data centers, could also decrease the DEFR gap. If large loads like data centers can be sufficiently flexible to turn off during high-risk periods, the DEFR gap can be decreased.

II. In the Short to Medium Term the Commission Should Further Analyze the Potential Resource Gap and Focus its Resources on Building out Renewable Energy Systems.

Finally, Commenters agree with Mr. Caiazza's recommendation for a detailed feasibility analysis that determines the worst-case observed wind and solar resource drought. The meteorological data reanalysis techniques that enable a period of record back to 1950 should be used. It should be a continental-scale analysis with realistic estimates of maximum available buildout of resources. Obviously, this analysis would require major effort, but other stakeholders across the country need the same information, so that they can determine how much energy will be available for import and export. The worst-case resource availability analysis will define the conditions, and at that point resource planners can determine what resources must be deployed to meet the State's goals and requirements. Using a long period of record will allow planners to analyze return time relative to life expectancy of resources. The Commission should encourage coordination amongst all the RTOs to prepare this analysis."

Fundamentally, as Commenters have pointed out in earlier submissions, there exists significant uncertainty at present about the ultimate size of the potential gap in DEFRs. It is premature and counterproductive to devote limited ratepayer resources and Department of Public Service Staff time to creating new subsidies for non-renewable technologies at this moment. Instead, the Commission should ensure that it does not lag behind on New York's urgent 2030 statutory deadline to serve 70 percent of the State's electrical demand system with renewable energy systems. A near-term focus on the 70 percent target is especially important now as the Draft Clean Energy Standard Biennial Review circulated this month concluded that the state is presently on a path to run years behind the 2030 target.[15]

Respectfully submitted,

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[15] *See* Draft Clean Energy Standard Biennial Review at 55–59, NY PSC Case No. 15-E-0302 (July 1, 2024); *see also* Marie J. French, *New York Likely to Miss 70 Percent Renewable Target*, Politico (July 2, 2024), https://www.politico.com/news/2024/07/02/new-york-likely-to-miss-70-percent-renewable-target-00166258#:~:text=New%20York's%2070%20percent%20renewable,Andrew%20Cuomo%20in%202019.