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Albany, NY 12203-6399

Filed electronically to rggiprograms@nyserda.ny.gov

RE: New York's Regional Greenhouse Gas Initiative
Operating Plan Amendment for 2025

Dear Ms. Harris:

I am writing on behalf of members of the Environmental Energy Alliance of New York (the "Alliance") to provide comments to the New York Regional Greenhouse Gas Initiative ("RGGI") proposed 2025 Operating Plan Amendment (the "Operating Plan") as circulated in anticipation of the public meeting conducted on December 5, 2024. The Alliance is an ad hoc group of electric generating companies, transmission and distribution companies and other providers of energy services in New York State. The Alliance supports our members in understanding state and national environmental regulatory initiatives to formulate and achieve their business goals and proactively advocate for cost-effective regulations and policies. The operations of Alliance members contribute to the reliability of the State's electric grid and to the economic well-being of the State.

Alliance members have been participants in the development and evolution of RGGI since its inception. Many Alliance members are RGGI compliance entities that have participated in the allowance auction process since its inception and, as such, have invested millions of dollars in RGGI. Considering these long-running investments, Alliance members have a keen interest in how the New York State Energy Research and Development Authority (NYSERDA) invests the resulting funds.

Alliance members are committed to providing reliable and affordable energy to the homes and businesses in New York State, while also supporting the State's efforts to meet the ambitious statewide emissions reduction targets established in the Climate Leadership and Community Protection Act (CLCPA). The wide range of programs that NYSERDA has launched, supported by RGGI funds and as presented in the Operating Plan, are clearly focused on reducing greenhouse gas emissions as required by the CLCPA. However, as more fully outlined below, Alliance members believe that the overall RGGI spending program is out of balance because it allocates an insufficient proportion of available resources to research and development to increase the *supply* side of clean electricity generation in favor of research to reduce electric *demand*.

The CLCPA required the adoption of a Scoping Plan in 2022 that includes recommendations to meet the CLCPA's goals and requirements. These recommendations are intended to "…put New York on a path toward carbon neutrality while ensuring equity, system reliability, and a just transition from a fossil fuel

economy to a robust clean energy economy."[1] The Scoping Plan sets out a wide-ranging series of strategies for meeting the CLCPA goals, including the following:[2]

- Energy efficiency measures that achieve the Climate Act energy efficiency requirement
- Transition from fossil natural gas to electrification in buildings
- Zero-emission electricity
- Transportation electrification
- Diverse portfolio of solutions in industry, including efficiency, electrification, and strategic use of alternative fuels and carbon capture technologies for certain industrial applications.

The 2025 Operating Plan appropriately supports many of these strategies. However, the Operating Plan does not invest sufficient funding in two of these strategies: (1) zero-emission electricity and (2) alternative fuels. Considering the focus on electrification as a means of greenhouse gas emission reductions promoted throughout the Scoping Plan, these two areas of energy supply are key to the overall strategic success of the State's efforts to meet the goals of the CLCPA.

Zero-emissions electricity

The Scoping Plan explicitly acknowledges that it is impossible to meet the CLCPA-mandated goal of providing one-hundred percent emissions-free electricity by 2040 without a significant build-out of dispatchable emissions-free generation resources. In fact, the Scoping Plan indicates that, even after full deployment of available clean energy technologies, there is a remaining need for 15 GW to 45 GW of zero-emission, dispatchable electricity generation capacity in 2040 to meet demand and maintain reliability.[3]

A white paper published by researchers at the prestigious Cornell University since the Scoping Plan was finalized indicates that the need for this type of firm, zero-emission capacity (FZEC) is even greater than that set forth in the Scoping Plan. The white paper states:

> Recall that in [the Scoping Plan] 18-23 GW FZEC is estimated to ensure grid reliability. The more detailed study presented here indicates that the FZEC need is 61-105% more than the scoping plan estimate. These findings underscore the importance of modeling energy systems with spatiotemporal co-variability and incorporating grid topology and operational constraints.[4]

The Cornell researchers also concluded that "Merely increasing wind and solar capacity is ineffective in improving reliability due to transmission congestion and spatiotemporal variations in vulnerabilities."[5]

Given this urgent need for technology development to support attainment of the CLCPA goals, it is disappointing that the Operating Plan currently includes only a passing reference to the need for dispatchable, emissions free resources in the program plan section entitled "Clean Energy Siting and Soft Cost Reduction". The Operating Plan states, at page 7, "Finally, this funding will allow the team to develop new resources for emerging technologies, with specific focus on dispatchable emissions free resources."

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[1] New York State Climate Action Council. 2022. "New York State Climate Action Council Scoping Plan." climate.ny.gov/ScopingPlan; page 1.
[2] *Ibid*, page 55-56
[3] *Ibid*, page 252
[4] "Heterogeneous Vulnerability of Zero-Carbon Power Grids under Climate-Technological Changes", accessed at https://arxiv.org/abs/2307.15079, page 8
[5] *Ibid*, page 1

But Table 1 indicates that there is only $4 million allocated for this effort, and then not until FY26-27 and FY27-28. This small funding allocation represents only 0.5% of the total allocations for those two years.

The Alliance urges NYSERDA to reconsider this level of funding and to take steps to dramatically increase the resources invested in this critical aspect of the electricity delivery system of the future. A significant investment in the development of dispatchable, zero emission electricity would be totally consistent with the strategies laid out in the Scoping Plan.[6]

Alternative Fuels

Under the heading of "Innovative GHG Abatement Strategies", the Operating Plan creates a program to investigate alternative, or advanced, fuels, described as follows:

> The Amendment proposes to fund initiatives to further development of advanced fuels critical to transitioning away from fossil fuels. First is research to identify, scope, engineer, measure and verify, and execute on potential pilot demonstrations in NYS to showcase advanced clean fuels processes.

This research, too, is totally consistent with the strategies for decarbonization listed in the Scoping Plan. However, during the questions and answers portion of the meeting on December 5th, NYSERDA staff indicated that this effort did not include consideration of hydrogen as an alternative fuel, but only included biogas and renewable natural gas. The Alliance believes that ignoring hydrogen as an alternative fuel is ill-advised.

Hydrogen, as an alternative fuel, could provide a means to avoid curtailing the significant renewable (solar and wind) energy that will be constructed as part of the CLCPA initiatives. Quoting again from Cornell's white paper:

> While the technology for hydrogen storage and transport is not yet fully mature, hydrogen offers the advantage of efficient use of curtailed renewable energy. This is particularly beneficial when renewable curtailment coincides with transmission line congestion, requiring excess renewable energy to be consumed locally. By locating the electrolyzer in areas with abundant renewable resources, hydrogen can be produced and then transported to high-demand regions that have limited local renewable resources, without exacerbating transmission line congestion. This offers a potential advantage over long-duration batteries, which are still subject to frequent transmission line congestion. In future work, *a comprehensive analysis that compares hydrogen and long-duration batteries would be valuable to assess the cost, efficiency, and respective contributions to system reliability*.[7]

The Alliance believes that using RGGI funds to explore this potential role for hydrogen, particularly given the complexities associated with eliminating transmission congestion in New York, would be an extremely worthwhile investment. The current funding allocation for alternative fuels in the Operating Plan is only $24.5 million across three fiscal years, which is only 1.9% of the expenditure slated for those years. Additional funding should be added to this program, and a potential role for hydrogen generation as an energy storage tool should be included in the research program.

[6] See, for instance, Scoping Plan Section E10, "Explore Technology Solutions", page 253

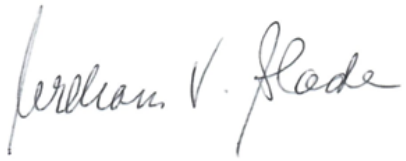
[7] See reference at footnote no. 4, page 12

Summary

As detailed above, the Alliance believes that the Operating Plan should be revised to include more funding and an accelerated schedule for research and development focused on dispatchable emission free generation resources. The Operating Plan should also include additional funding in the Alternative Fuels program to support the research suggested by the experts at Cornell University.

The Alliance members appreciate this opportunity to provide input to the Operating Plan and look forward to continued cooperation with NYSERDA during the implementation of the Operating Plan.

Sincerely,



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