ENVIRONMENTAL ENERGY ALLIANCE OF NEW YORK
677 Broadway, Suite 1205
Albany, New York 12207-2996

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Draft Scoping Plan Comments
NYSERDA
17 Columbia Circle
Albany, NY 12203-6399

Dear Members of the Climate Action Council:

I write on behalf of the Environmental Energy Alliance of New York ("the Alliance") to provide comments on the draft Scoping Plan related to electric system reliability, the natural gas transition, full lifecycle review of all technologies, and the availability of cost data. The Alliance is an ad hoc, voluntary group of electric generating companies, transmission / distribution companies and other providers of energy services in New York State (NYS). 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 NYS.

Critical Attention Must be Dedicated to Electric System Reliability: Emission-Free Resources and Reserve Margins

The unprecedented rapid transition to wind, solar and energy storage technologies present substantial risks to electric system reliability, unless reliability needs are explicitly incorporated into the CLCPA scoping process and into the CLCPA implementing regulations to be promulgated by the NYS Department of Environmental Conservation (DEC). The final Scoping Plan should be revised to do so. Specifically, the Alliance recommends a conditional schedule that addresses the fact that the transition will require presently unavailable technologies and revisions to the planning processes themselves. The discussion of the role of technology advancements in the draft Scoping Plan highlights the need for flexible, dispatchable resources to replace the reliability services currently provided by existing fossil-based generation, with the indication that energy storage is an available option (page 170).

The draft Scoping Plan incorrectly states that battery storage (and even hydrogen elsewhere in the draft) will be sufficient (particularly in the near-term transition years) to support reliability is contrary to the conclusion of the New York Independent System Operator (NYISO), which concluded in its most recent Comprehensive Reliability Plan for NYS that:

> "*Significant amounts of dispatchable, emission-free resources are needed to balance renewable intermittency on the system. Resources with this combination of attributes are not commercially available at this time but will be critical to future grid reliability. By 2040, the amount of necessary*

dispatchable emission-free resources could be over 32,000 MW, approximately 6,000 MW more than the total fossil-fueled power plants on the New York grid in 2021[1]".

The NYISO's conclusion (which is not acknowledged in the draft Scoping Plan) is echoed by the North American Electric Reliability Corporation (NERC)[2] in its Long-Term Reliability Assessment, claiming:

"*Sufficient flexible resources are needed to support increasing levels of variable generation uncertainty.* ***Until storage technology is fully developed and deployed at scale*** *(which cannot be presumed to occur within the time horizon of this Long-Term Reliability Assessment), natural-gas-fired generation will remain a necessary balancing resource to provide increasing flexibility needs. Resourceplanning and policy decisions must ensure that sufficient balancing resources are developed and maintained for reliability*"[3]. (emphasis added)

Further, the NERC assessment states:

"*In many areas, VERs [variable energy resources] are increasingly important to meet electricity demand. Operators must have flexible resources, including adequate dispatchable, fuel-assured, and weatherizedgeneration, at their disposal. This is especially true in areas with high levels of variable generation to avoid shortfalls when VER output is insufficient to meet demand*."

Framing this discussion in terms of climate influences, NERC also points to disruptions in electricity supply and increased demand owing to extreme weather as added risks to the grid.

"*To ensure resource adequacy and energy sufficiency as the grid transforms and to reduce the exposure to energy shortfalls in extreme weather, the resource planning community of stakeholders needs to keep reliability at the forefront of its actions*."

The Electric Power Research Institute (EPRI)[4] also identifies the need for low or zero carbon 'clean firm' resources to provide capacity and energy during low wind or solar output periods, and how to ensure these events are modeled in studies is a task for future research.

The Installed Reserve Margin (IRM) is set annually by the New York State Reliability Council (NYSRC) as a percentage of the forecasted peak load for the year and establishes the minimum amount of Installed Capacity (ICAP) that must be on the system throughout the year. As the percentage of wind and solar resources increases the IRM will also increase. For the 2021-22 capability year beginning May 1, 2021, the NYSRC adopted an IRM of 20.7% based on a projected summer 2021 peak demand of 32,333 MW. That means that the total installed capacity requirement for the upcoming summer capability period is 39,026 MW[5]. Using the projected capacity in Appendix G in the Draft Scoping Plan it is possible to project future IRM working backward from the numbers presented. The upper chart in Figure 32 gives an assumed 2050

[1] 2021-2030 Comprehensive Reliability Plan. NYISO. December, 2021.

[2] The North American Electric Reliability Corporation is an international regulatory authority whose mission is to assure the reduction of risks to the reliability and security of the grid. NERC develops and enforces Reliability Standards; annually assesses seasonal and long-term reliability; monitors the bulk power system for resource adequacy and provides an overview of projected electricity demand growth and generation and transmission additions. The critical review and reporting by NERC have direct bearing on reliability and the transition of the NYS energy sector and must be incorporated into the ongoing CLCPA process.

[3] 2021 NERC Long Term Reliability Assessment. NERC. December 2021.

[4] Extreme weather considerations for resource adequacy. EPRI. 2022.

[5] New York's Clean Energy Grid of the Future: Power Trends 2021. NYISO. 2021.

peak load of ~49.5 GW while the lower chart in Figure 32 gives a 2050 installed capacity of ~151.5 GW. Figure 29 also shows a 2050 installed capacity of ~151.54 GW. This gives an implied 2050 IRM of ~206% [(151.5/49.5)-1=2.06]. Similar calculations based on Figures 29 and 32 give IRMs of 169% in 2040 and 126% in 2030. This significant increase (from 20 to 200 percent) in the necessary installed capacity to support the renewable energy system will be costly and unprecedented.

Electric System Reliability: the Process to Manage Risk

The process of evaluating reliability needs and risks is addressed in the scoping plan (page 155), to be informed by many inputs including the NYISO Reliability Needs Assessment (RNA) and the Comprehensive Reliability Plan which is particularly important during the transition away from fossil-fueled generation. The draft Scoping Plan (page 156) goes on to suggest that while setting emissions control regulations for those fossil-fueled facilities, "*The process should include effective mechanisms for input and comments from stakeholders prior to formal proposal under SAPA [State Administrative Procedures Act], similar to the process used in promulgating the DEC "Peaker Rule," 6 NYCRR Subpart 227-3."* Further, the draft CLCPA Scoping Plan [bullet two, page 157] notes the need for "*coordination of closures and the necessary reliability assessments*" which should be accomplished by collectively evaluating all Title V permit renewals to determine the impact on system reliability.

Alliance members fully support use of the peaker rule model, which included a holistic evaluation of the entire peaking unit population to assess risk to reliability. The approach should be managed for the energy sector transition with continual evaluation of the population of fossil-fueled generator operating permit renewals through a reliability lens as informed by the NYISO and NYSRC. One-off decisions whether an operating permit is consistent with provisions of the CLCPA fails to address the cumulative impact of a single unit's overall contribution to system reliability; this is particularly true if several operating permits are in the renewal cycle within a short time.[6]

The Natural Gas Transition

Alliance members agree with the need for the planning study identified in Initiative #3 for the gas system transition (Appendix A, page A-39). We note the importance of maintaining a safe, affordable, and reliable system for gas customers throughout the transition period while addressing cost implications to remaining customers and to the gas utility related to stranded assets. We believe the planning study should take a **realistic view of the actual in-service dates** of renewable generation resources and concomitant transmission additions and the change-over to electric heating for the majority of buildings in setting the gas phase-out schedule. We acknowledge the advocacy for near-term and complete removal of the gas infrastructure system, but a safe transition with confirmation of in-place operational alternative energy sources is critical for affected utility customers.

Among the many stakeholders named in the draft Scoping Plan as relevant to the discussion, we point out the critical roles of not only the New York State Department of Public Service (DPS)[7], but the regulatory role of the United States Department of Transportation (USDOT)Pipeline and Hazardous Materials Safety Administration. While New York State rules and standards meet or exceed the requirements promulgated by the USDOT at 49 CFR Part 192, there should be participation by the USDOT in the gas transition planning.

[6] The Alliance submitted similar comments to NYSDEC in response to Proposed Policy DAR-21: *The Climate Leadership and Community Protection Act and Air Permit Applications.*

[7] 16 NYCRR, Chapter III (Gas Utilities), Subchapter C (Safety), Part 255. Part 255 consists of nearly 1,000 sections covering all aspects of LDC design, construction, operation, and maintenance. Sections 805 through 821 set forth, in an exhaustive fashion, a strategy for identifying, controlling, and repairing leaks.

The Need for Additional Lifecycle Review of Technologies

There are many examples in the draft Scoping Plan where attention is given to full lifecycle review of technologies to account for GHG emissions and impacts to human health and the environment. However, we note the discussion of lifecycle impacts assessment is applied selectively to some, but not all, of the technologies and measures that will be part of our energy future.

For example, there appears to be a particular focus on the lifecycle impacts of hydrogen and renewable natural gas. We note that the Council strategy calls for further analysis to "*determine the lifecycle GHG accounting framework of RNG and advanced green hydrogen*" and "*the safety of advanced green hydrogen, storage, and pipeline operation*" (page 179).

We believe that there should be a similar focus on battery storage, solar, wind, and biomass. There is no mention in this section of the Scoping Plan of the upstream consequences of renewable technology construction or end-of-life disposal. These types of impacts can be significant. As an example, while lifecycle estimates of GHG for EVs are estimated at half of the GHG emissions for internal combustion vehicles, there are also emissions along the EV supply chain with related environmental and social impacts[8].

Our observation of the uneven treatment of technology impacts assessment is also apparent in the deliberations of the Climate Justice Working Group (CJWG) (page 177). The CJWG "*…expresses strong concern about the promotion of some emerging technologies, including green hydrogen, RNG, biofuels, biomass, and waste-to-energy*" and "*recommends a lifecycle analysis of the environmental, health, safety, emissions, and environmental justice impacts of nuclear*." Once again, while the Alliance supports the concept of lifecycle assessment of these technologies, we believe the Council should be comprehensive and fully transparent in its review by also including assessments of other technologies such as energy storage, solar and wind.

The draft Scoping Plan hints at a more holistic evaluation in the discussion of extending broad producer responsibility and products management, as "*…end-of-life management of solar panels and large-scale batteries will become more of a concern as renewable energy technologies are implemented and grow*" and "*DEC should research end-of-life management for difficult to manage materials, such as solar panels"* (page 244). Lifecycle review and disclosure for all technologies will point to areas of future research to address materials management, recycling options should installations retire early or be replaced with more efficient equipment, identify appropriate land use pairings, and environmental justice.[9] The end of life and material procurement impacts of energy storage technologies should be a particular focus of such research, particularly as lithium-based technologies are the dominant forms of storage for the near future.

Our final point on the topic of lifecycle review, is the component of the scoping plan strategy that addresses benefit-cost analysis (page 175): "*The PSC should reopen the generic benefit-cost analysis proceeding to update costs and benefits, including Climate Act compliance costs (carbon and other environmental impacts), important non-energy benefits (such as localized health impacts and equity), and inclusion of customer cost contributions in order to accurately assess the true value of energy efficiency and demand response."* Alliance members support this activity but note the critical benefits and cost information

[8] IEA (2021), The Role of Critical Minerals in Clean Energy Transitions, IEA, Paris https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions

[9] Heath, Garvin, Dwarakanath Ravikumar, Silvana Ovaitt, Leroy Walston, Taylor Curtis, Dev Millstein, Heather Mirletz, Heidi Hartmann, and James McCall. 2022. Environmental and Circular Economy Implications of Solar Energy in a Decarbonized U.S. Grid. Golden, CO: National Renewable Energy Laboratory. NREL/TP-6A20-80818. https://www.nrel.gov/docs/fy22osti/80818.pdf.

identified are not yet available and have not been presented to the public so that they might more fully understand the impacts of implementing the CLCPA.

Timeline of Pending Studies with Cost Implications

There is understandably a large list of studies to be undertaken to direct the implementation of the CLCPA strategies. Among those identified in the draft Scoping Plan are landfill gas emissions characterization, decommissioning of community-owned projects, agrivoltaics, and development mapping. However, we note the following studies have potentially significant cost data that are not yet available but are necessary to inform the state's decision-making strategy setting.

Building electrification and the installation of heat pumps are cornerstone strategies for achieving the CLCPA goals. While the Integration Analysis provides social costs related to the clean energy transformation, details of costs to homes and businesses are not yet available. In fact, the study of cost to homes and businesses is pending with no indication of publication date. "*To manage the impacts of widespread electrification on the State's electric grid, it will be important for buildings to adopt smart controls, energy storage, and other load flexibility measures. Policymakers also should assess the differential grid impact, costs, and benefits of cold climate air source, ground source, and community thermal heat pump systems;* ***at this writing, related analysis in underway***" (page 121; emphasis added). As the costs of these programs will be borne by the citizens of the State, it is necessary that direct costs be identified, with adequate review by the public and consumer advocacy groups.

Further, in discussions of reducing demand-side solutions to reduce energy consumption, "*DPS and NYSERDA, in consultation with utilities,* ***should complete a study*** *on avoiding or reducing grid upgrade costs through the use of demand response and geothermal, including district thermal systems, especially downstate, with a focus on LMI individuals and Disadvantaged Communities*" (page 174; emphasis added). Accurate cost estimates related to grid upgrades (which will become part of utility rate cases) cannot be known without study of the potential penetration of those alternatives identified in the draft Scoping Plan.

Alliance members are supportive of the goals of the CLCPA and look forward to working cooperatively with the relevant state entities to identify appropriate implementation policies and with the DEC to promulgate workable regulations that achieve the clean energy goals while maintaining an adequate, safe, and reliable electric supply for NYS.

Sincerely,

Sandra Meier, Ph.D.
Director
Sandra.Meier@eeanyweb.org
518-573-0191