BEFORE THE
STATE OF NEW YORK
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

COMMENTS OF THE NEW YORK POWER AUTHORITY ON THE DRAFT CLEAN ENERGY STANDARD BIENNIAL REVIEW

The New York Power Authority (NYPA) respectfully submits these comments in response to the Draft Clean Energy Standard Biennial Review (the Draft Review) submitted jointly by the New York State Department of Public Service (DPS) and the New York State Energy Research and Development Authority (NYSERDA) to the New York State Public Service Commission (the Commission) in the above-captioned proceeding. The purpose of the Draft Review is to summarize the progress made towards meeting the renewable energy and emissions goals set forth in the Climate Leadership and Community Protection Act (CLCPA), and to present policy options to address the remaining efforts necessary to achieve those goals.[1]

NYPA hereby submits these comments in response to the July 24, 2024 notice inviting comments on the Draft Review.[2] NYPA agrees with the Draft Review that additional efforts must be undertaken to reach the CLCPA goals in a timely manner and appreciates the attention the Draft Review affords to baseline hydropower resources. However, the recommendations presented in the Draft Review focus on addressing the need to support small hydro facilities. While the Draft Review acknowledges that small hydro resources play a "modest but important

[1] Chapter 106 of the Laws of 2019. The CLCPA codified, among other mandates, that at least 70% of New York's electricity come from renewable energy sources, such as wind and solar by 2030 (70x30 Target), and that the statewide electric system be 100% emission free by 2040. See Public Service Law (PSL) § 66-p(2).

[2] Case 15-E-0302, Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard, Notice Soliciting Comments (issued July 24, 2024).

role in contributing to the state's clean energy goals,"[3] large hydropower facilities make a significant contribution to those goals and face the same economic pressures. For decades, NYPA customers have funded the costs of operating and maintaining hydropower facilities that constitute the State's renewable baseline. NYPA and our customers are now also funding major projects to extend the life expectancy of these facilities, including modifications to allow the units to ramp up and down to balance intermittent renewables like wind and solar, which cause significant and accelerated wear on the assets. NYPA's comments highlight the inequity of continuing to deem state-owned hydropower resources ineligible for State incentive programs, especially as these resources face the same economic challenges as small hydropower facilities with respect to operations, maintenance, and costly life-extension projects but without the automatic rate recovery of non-state-owned assets. Specifically, NYPA offers additional options to better address the support required for baseline hydropower resources, and at a minimum, recommends a modification to expand the definition of small hydropower resources for the options presented in the Draft Review.

I. Background

On July 18, 2019, the CLCPA was signed into law and remains among the most ambitious climate laws in the country. The CLCPA requires that the Commission issue a review for notice and comment that considers "(a) progress in meeting the overall targets for deployment of renewable energy systems and zero emission sources, including factors that will or are likely to frustrate progress toward the targets; (b) distribution of systems by size and load zone; and (c) annual funding commitments and expenditures."[4] On July 1, 2024, DPS and NYSERDA jointly submitted the Draft Review in accordance with the provisions of the CLCPA.[5]

The Draft Review explains that significant factors beyond the State's control, including the COVID-19 pandemic and the Russian invasion of Ukraine, have impacted the development and deployment of renewable energy resources. These unanticipated global events have resulted

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[3] Case 15-E-0302, supra, Draft Clean Energy Standard Biennial Review (filed July 1, 2024) (Draft Review), p. 78.

[4] PSL § 66-p(3).

[5] On July 8, 2024, DPS and NYSERDA jointly filed a revised draft of the Review, stating in a cover letter that the revised Review corrects two typos.

in high interest and inflation rates, supply chain pressures, and specifically within the energy sector which is at present largely dependent on foreign supply chains, difficulty in obtaining major equipment, such as transformers, and other critical components from overseas manufacturers.[6] In addition to these factors, the Draft Review notes the implications of significant future load growth due to the addition of new high energy consuming loads, such as data centers and clean technology manufacturing, and the increased electrification of heating, cooking, and transportation, which while environmentally beneficial compared to fossil-fuel alternatives, also strain the electric grid. The Draft Review suggests that the combined impact of all these factors may delay the State's timely achievement of its CLCPA goals.

The Draft Review offers several recommendations to stimulate further progress towards meeting the CLCPA goals. The Draft Review correctly states that baseline hydropower resources are facing economic challenges, and absent sufficient operational or capital support, these resources often export to neighboring states.[7] Recognizing the importance of baseline resources to meeting obligations under the CLCPA, the Draft Review proposes several options to secure the continued operation and deliverability of these resources.[8] Those options include: (1) establishing a capital grants program and (2) providing the E-Value to hydroelectric generators.

II. Discussion

NYPA agrees that additional efforts must be undertaken to reach the CLCPA goals in a timely manner and appreciates the attention the Draft Review affords to the baseline hydropower resources. The New York Independent System Operator, Inc. (NYISO) Gold Book, 2024 Load and Capacity Data Report states that "[t]he existing NYCA generating capability includes renewable resources totaling 7,316 MW of summer capability. This total includes conventional hydro (4,274 MW), wind generation (2,454 MW), grid connected solar (254 MW), and other renewable resources (334 MW, including methane and refuse)."[9] Based on this data, conventional hydropower resources comprise 58% of the total renewable resources in New York State, making hydropower the largest and most critical contribution to achieving the State's

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6 Draft Review, p. 12.

7 Id. at 78.

8 Id.

9 NYISO 2024 Load & Capacity Data Report, Gold Book, (April 2024) (2024 Gold Book), p. 4, https://www.nyiso.com/documents/20142/2226333/2024-Gold-Book-Public.pdf.

CLCPA mandates of any renewable resource. Furthermore, the Draft Review notes that New York will need a total of 120,707 MWh of renewable energy to achieve 70% renewable generation by 2033.[10] The 2024 NYISO Gold Book shows that conventional hydro resources generate approximately 28,275 MWh per year.[11] Thus, conventional hydro is expected to constitute more than 23% of the total renewable energy in New York. A contribution of that magnitude should not be taken for granted; rather, it must be supported to ensure the most cost-effective achievement of the CLCPA goals.

NYPA appreciates the proposed options outlined in the Draft Review to support critical baseline hydropower generation and the recognition of the important role these resources play in contributing to the CLCPA goals. However, NYPA is concerned that the proposed options are not sufficient to provide the necessary support for the baseline resources because they only address the economic concerns of small hydro facilities, defined as less than 5 MW. Under such a limited definition, only a small number of baseline facilities would be eligible for the proposed options. At a minimum, NYPA recommends that the Commission expand the definition of small hydropower resources proposed in the Draft Review from less than 5 MW to less than 10 MW.

To best support a larger percentage of the baseline resources, and to further encourage deployment of new dispatchable resources, NYPA recommends two additional measures, discussed below, for consideration by the Commission: (1) modification to the repowering criteria for existing hydroelectric facilities to extend their useful lives; and (2) creation of a flexible resource renewable energy credit.

In addition, the Draft Review discussed the creation of Renewable Energy Zones (REZ). The purpose of a REZ would be to better align renewable deployment with transmission expansion and economic development. NYPA encourages the Commission to consider Priority Transmission Projects (PTPs) within this REZ model.

A. Additional Measures to Better Support Hydropower Baseline Resources

NYPA appreciates that the Draft Review recognizes a need to support hydroelectric facilities considered in the baseline. Specifically, the Draft Review notes that total contributions from baseline hydropower resources have declined 8.2% from 2017 to 2020.[12] The Draft Review

[10] Draft Review, p. 95.

[11] 2024 Gold Book, p. 107.

[12] Draft Review, p. 78.

explains that these baseline resources "are facing economic challenges and a need for capital to make investments in their plant."[13]

Notwithstanding this recognized need for financial assistance for baseline hydroelectric generators, the Draft Review only offers options to support small hydropower resources, defined as less than 5 MW. To truly support the viability of baseline resources, and to assist the achievement of the State's policy goals, more needs to be done beyond the options presented in the Draft Review. NYPA recommends two additional proposals to support the baseline and further encourage the development of the flexible resources necessary to support intermittent renewables.

1. Repowering Under Tier 1

In addition to the economic challenges highlighted in the Draft Review, many baseline hydropower facilities are also approaching crucial decision points for investing in life extension and modernization upgrades and other rehabilitation of aging components that are necessary to maintain these resources. An alternative option to support existing hydropower resources is to further refine the eligibility criteria for repowering under Tier 1 of the Clean Energy Standard (CES) to remove the 15% incremental production requirement. The purpose of a repowering project is to extend the availability of the total output of an existing facility at the end of its useful life to maintain full production from that resource.[14] Revising the criteria to eliminate the incremental production requirement would encourage baseline hydropower facilities to extend the lives of their existing facilities, thereby contributing to the State's efforts to meet the CLCPA goals.

Under current CES program rules, to qualify as a "repowering," the facility must, among other requirements, increase its output by at least 15%.[15] However, to qualify as an "incremental upgrade" of an existing hydroelectric, wind or solar project, the investment must also, among other requirements, increase the project's output by only 5%.[16] The 5% requirement is a logical threshold for an incremental upgrade project, where the additional energy output above the

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[13] Id.

[14] October 2020 Order, p. 106.

[15] Id.

[16] New York State Clean Energy Standard RES Tier 1 Certification: Submission Instructions and Eligibility Guidelines Version 3 (issued June 2024), p. 17.

historic baseline is treated as Tier 1 eligible. By contrast, an incremental production requirement is not appropriate for repowering projects where the intent is to extend the life and output of an entire facility. If the Commission were to eliminate the 15% incremental output requirement for repowering projects, older baseline facilities would have an incentive, and the financial means, to repower and continue production rather than retire.

The 15% output requirement is a particularly onerous requirement for existing hydropower generation resources for a number of reasons. First, while wind and solar are nascent technologies that are quickly becoming more efficient, hydropower generation is a mature technology with limited opportunity for incremental developmental improvements. Thus, replacing an older hydropower turbine with a new unit will likely not generate significant additional output. Second, while wind turbine manufacturers are continuing to develop larger turbines with higher hub heights to capture more wind power, hydropower facilities are limited to the existing water flows. As such, it is not appropriate to impose an incremental output requirement for repowering of hydro projects.

Importantly, repowered facilities would still be required to meet the other two eligibility criteria established by the Commission to qualify as eligible for Tier 1:

(1) the facility is past the end of its useful life (e.g., 50 years for hydroelectric resources) and

(2) 80% of the net book value per Generally Accepted Accounting Principles from the completed repowered facility (not including its property and tangible assets) is derived from capital expenditures made on or after October 15, 2020, as verified by an independent audit.[17]

Further, under this construct, the facility owner would bid into NYSERDA Tier 1 solicitations, thus preserving the competitive nature of Tier 1 REC pricing.

2. New Tier of RECs Supporting Flexible Dispatchable Resources

NYPA submits that it would be beneficial to focus on the attributes necessary for a clean and reliable grid, including flexibility in dispatch and operation, which are essential in balancing intermittent resources. The hydropower generation facilities counted in the baseline are recognized as dispatchable emissions free resources (DEFRs) and are often counted upon by the

[17] October 2020 Order, pp. 103-107.

NYISO to provide flexibility. While the flexibility of hydro resources is used to balance the grid, it is not compensated within the wholesale markets or the CES Tiers. In fact, hydropower is adversely affected because when the assets are curtailed, they cannot earn generation revenue. In addition, turning the generators off and on puts tremendous physical pressure on the turbines, thereby reducing their life expectancy and requiring more frequent and expensive repairs.

In July 2024, the NYISO issued the 2023-2042 System and Resource Outlook Report (Outlook) which stated that at least 20 GW, and potentially upwards of 40 GW, of DEFRs would be required to meet the CLCPA goal of a zero emissions grid by 2040.[18] The Outlook further stated that the grid needs DEFRs that provide operating reserves, ramping, flexibility, and dispatchability, but noted that such technologies are not commercially viable today at the necessary scale.[19]

The Commission has also recognized the need for flexible resources. In May 2023, the Commission initiated a process for the purpose of identifying technologies that can close the gap between the capabilities of existing renewable energy technologies and future system reliability needs.[20] The focus on the need for flexible resources presents an opportunity to evaluate a new CES Tier that encourages building new or maintaining existing emissions free, quick ramping, and dispatchable resources for attributes needed to maintain reliability and help achieve New York's clean energy goals. For example, hydropower facilities, such as NYPA's Niagara Power Project, provide reserves, ramping, flexibility and dispatchability. To date, however, these critical grid reliability services have not received any financial support in CES programs.

A Flexible REC, or "Flex REC," would compensate certain resources that are capable of being dispatched to produce electricity on demand to supplement renewable resources and energy storage, without carbon dioxide or other greenhouse gas emissions. Flex RECs would support the maintenance and development of DEFRs, and the resources needed to maintain reliability with an influx of intermittent resources coming online. The creation of a Flex REC would promote and support flexible resources to encourage both market entry and maintenance

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[18] NYISO 2023-2042 System & Resource Outlook (July 23, 2024), p. 48, https://www.nyiso.com/documents/20142/46037414/2023-2042-System-Resource-Outlook.pdf/8fb9d37a-dfac-a1a8-8b3f-63fbf4ef6167.

[19] Id. at 9.

[20] Case 15-E-0302, supra, Order Initiating Process Regarding Zero Emissions Target (issued May 18, 2023).

of existing renewable resources. Further, Flex RECs could provide the necessary incentive to stimulate new ideas to support the grid of the future and mobilize capital to maintain and expand generation technologies that are imperative to supporting increased deployment of intermittent renewable resources while maintaining a reliable grid. Finally, effectively incentivizing flexible resources will have a ratepayer benefit because it will limit the overbuild of generation and curtailment of existing resources.

During public NYISO committee meetings, some stakeholders have raised the idea of charging intermittent resources for the support provided by other flexible resources to fill in operational gaps when the intermittent unit is not producing energy. Such an approach could suppress the development of renewable resources, hampering achievement of the State's CLCPA goals. The creation of a Flex REC, on the other hand, would encourage capital investment in existing and new flexible resources, on a technology-neutral basis, to support intermittent renewable resources on the power system.

3. Direct Contracts with NYSERDA

As the Review briefly notes, a new statute directs NYPA to develop and own renewable generation resources to support the State's clean energy goals.[21] Under this new statute, NYPA is able to participate in NYSERDA solicitations like any other developer. However, the Commission could address shortfalls in meeting the CLCPA goals by authorizing NYPA to directly contract with NYSERDA outside of the solicitation process for large-scale renewable projects.

To encourage faster development of renewable projects, NYPA urges the Commission to allow direct contracting for select contracts totaling up to a certain MW limit per year. Such direct contracts could be paid at the weighted average strike price from the most recent Tier 1 solicitation process. Direct contracting would enable NYPA to meet its legislative mandate to bring projects online faster and generate more renewable energy sooner to support the CLCPA goals, particularly the looming 70x30 Target.

[21] Draft Review, p. 75. See Chapter 56 of the Laws of 2023, part QQ.

B. Recommended Modification to the Draft Review Options for Supporting Small Baseline Hydro Generation Resources

The Draft Review provides two options designed specifically to support the small baseline hydropower generation resources. First, the Capital Grants Program would provide facilities less than 5 MW with funding for maintenance and/or repairs and efficiency upgrades.[22] The Draft Review suggests that such a grant program would be modeled after federal grant programs. The second option would provide an E-Value, similarly designed and calculated as the Value Stack under Tier 1 of CES, to the same small hydroelectric units. The Draft Review notes that although hydro generators "provide similar environmental benefits as Tier 1 generators do, they do not qualify for the E-Value."[23] The current compensation under the E-value of $31.03 per MWh is consistent with the New York State Department of Environmental Conservation's calculation of the Social Cost of Carbon and the emissions intensity of the New York grid. The E-Value would appropriately compensate these small hydro units for the environmental benefits of their renewable generation.[24]

Hydroelectric generation plays a significant role in New York State's resource mix and is becoming increasingly important as the State progresses towards its CLCPA goals. As such, NYPA supports the implementation of a hydropower-focused grant program. As the Draft Review acknowledges, baseline hydro facilities around the State have a critical need for such grants to help fund necessary maintenance, repairs, and/or upgrades.[25] NYPA has experienced this hardship and need for support firsthand as NYPA is currently considering closing some of its smaller hydropower units which are not able to cover their operational costs. NYPA encourages the Commission to increase the 5 MW cap to 10 MW for eligibility to participate in the Capital Grants Program.

The Draft Review indicates that criteria for the grant program would be developed using the federal grant programs as a model.[26] Although there is no standard definition for small hydropower facilities within New York State, it is common practice of federal agencies, such as

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22 Draft Review, pp. 78-79.

23 Id. at 79.

24 Id.

25 Id. at 78.

26 Id. at 79.

the Federal Energy Regulatory Committee (FERC) and the U.S. Department of Energy (DOE), to identify small hydropower facilities as projects that generate 10 MW or less.[27] For example, the DOE indicated in its Section 243 Hydroelectric Efficiency Improvement Incentives Program that up to 25% of available funding would be allocated to "small projects," or those under 10 MW, noting that such projects represent over 75% of the nation's hydropower fleet.[28] Similarly, FERC can grant exemptions from licensing requirements under the Federal Power Act for "small hydroelectric projects" which must have an installed capacity of 10 MW or less.[29]

Increasing the cap from 5 MW to 10 MW would also be consistent with prior actions of the Commission, such as when the Tier 2 Maintenance program eligibility was increased from 5 MW to 10 MW in 2018. In doing so, the Commission noted that "this larger size threshold includes approximately 92% of all non-State-owned hydroelectric units generating in New York as part of the 2014 baseline."[30] Accordingly, NYPA recommends that, at a minimum, the Commission increase the cap for small hydro projects from 5 MW to 10 MW. However, this alone will likely not be sufficient to meet the financial needs of New York's hydro facilities, including NYPA's smaller hydropower units, without more aggressive changes to policy programs.

C. Priority Transmission Projects Should Be Considered for Renewable Energy Zones

The Draft Review offers the creation of Renewable Energy Zones as one option that may align renewable generation development and loads associated with economic development

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27 Department of Energy, Water Power Technologies Office, https://www.energy.gov/eere/water/types-hydropower-plants.

28 U.S. Department of Energy Grid Deployment Office Guidance on Implementing Section 40332 of the Infrastructure Investment and Jobs Act of 2021: Hydroelectric Efficiency Improvement Incentives (dated March 22, 2023), pp. 2-3, https://www.energy.gov/sites/default/files/2023-03/Hydroelectric-Efficiency-Improvement-Incentives-Guidance_3.22.23.pdf. In addition to a nameplate capacity of 10 MW or less, to qualify these projects must also be owned by small businesses, municipal entities, nonprofit organizations, electric cooperatives, and /or Indian Tribes.

29 FERC Hydropower Primer: A Handbook of Hydropower Basics, p. 35, https://www.ferc.gov/sites/default/files/2020-05/hydropower-primer.pdf. The project must also be located at an existing non-federal dam (built prior to 1977) or at a natural water feature that would not require construction of a dam.

30 Case 15-E-0302, supra, Order Adopting Measures for the Retention of Existing Renewable Baseline Resources (issued March 16, 2018), p. 24.

growth with transmission expansion plans.[31] The concept is to better coordinate various efforts, including the Coordinated Grid Planning Process, ongoing economic development, and other initiatives with a goal of streamlining the buildout of transmission and renewable generation resources to achieve the CLCPA goals most cost effectively.[32] In consideration of a REZ model, the Draft Review notes several issues that need to be explored.

In recognition of the potential delay in achieving the CLCPA goals noted in the Review, especially noting the length of the NYISO's Public Policy Transmission Planning Process, NYPA encourages the Commission to consider and incorporate PTPs in the creation of a REZ model. The legislature identified the need to develop transmission infrastructure on an expeditious basis to meet the CLCPA targets and established a separate PTP process wherein NYPA would use its expertise and its right-of-way to develop such projects.[33] The PTP process is designed to allow NYPA to co-develop with local distribution companies, or other entities, critical transmission solutions. The identification of a PTP within a REZ could expedite the growth of renewable resources within that zone in support of the CLCPA goals, and thus should be considered when developing a REZ model.

III. Conclusion

The Draft Review forecasts that it is unlikely that the State will meet the ambitious 70x30 renewable energy target, and an audit by the Comptroller supports this finding.[34] Notwithstanding, the Draft Review offers a combination of options designed to meet the goal that 70% of New York's electricity come from renewable energy sources as rapidly as possible, including three potential solutions to support baseline hydropower resources. NYPA appreciates the Draft Review's acknowledgement of the importance of both baseline and hydro resources and the need to provide adequate support to secure their continued operation. As proposed,

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31 Draft Review, p. 77.

32 Id.

33 L.2020, ch 58, Part JJJ, Section 7(5).

34 Draft Review, pp. 58-59; Office of the New York State Comptroller Report 2022-S-4, Public Service Commission and New York State Energy Research and Development Authority, Climate Act Goals – Planning, Procurements, and Progress Tracking (issued July 2024), https://www.osc.ny.gov/files/state-agencies/audits/pdf/sga-2024-22s4.pdf (Comptroller Report). "As of November 2021, the State needed to more than double its renewable energy generation to meet the 70% by 2030 goal." Comptroller Report, pp. 17, 21, 33.

however, the options continue the current practice of limiting participation to only the smallest resources, thus undermining the efficacy of these solutions.

Accordingly, NYPA offers a modification to the definition of small hydropower facility and submits two additional options that will better support the State's achievement of the CLCPA goals – the creation of a Flex REC and a modification to the eligibility criteria for repowering under Tier 1 – both of which would provide important financial support for crucial baseline hydroelectric resources.

For the foregoing reasons, NYPA urges the Commission to adopt the proposals and modification presented in these comments.

Dated: September 23, 2024
Albany, New York

Respectfully submitted,

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