STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Motion of the Commission to Implement Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act

Case 20-E-0197

Comments of New York Solar Energy Industries Association Regarding Motion of the Commission to Implement Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act

Dated: March 22, 2021

New York Solar Energy Industries Association Comments to New York State Public Service Commission

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A. Introduction

The New York Solar Energy Industries Association (NYSEIA) submits the below comments for the Public Service Commission's consideration in response to the Initial Report on the New York Power Grid Study (Report) filed on January 19, 2021, as required pursuant to the Commission's "Order on Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act," issued May 14, 2020. NYSEIA is a not-for-profit industry trade association with a mission to advance and accelerate the deployment of distributed solar energy and energy storage in New York State, acting as the voice of the distributed solar and storage industry for more than 125 member organizations on key legislative, regulatory, and statutory policy matters affecting these industries. Our membership is primarily comprised of local, regional and national firms that develop and install distributed solar energy and battery storage systems across New York State.

B. Background

The Accelerated Renewable Energy Growth and Community Benefit Act ("AREGCBA") was enacted in 2020[1] to hasten progress toward climate goals set forth in the Climate Leadership and Community Protection Act ("CLCPA"). Specifically, the AREGCBA directed the Public Service Commission ("Commission"), in consultation with other state agencies and authorities, the utilities, and the New York Independent System Operator (NYISO), to conduct a "comprehensive study for the purpose of identifying distribution upgrades, local transmission upgrades, and bulk transmission investments that are necessary or appropriate to facilitate the timely achievement of the CLCPA targets"[2], referred to as the "Power Grid Study". In response to this directive, an initial report on the Power Grid Study, prepared by the Department of Public Service ("DPS") and the New York State Energy Research and Development Authority ("NYSERDA") with support and advice from the Brattle Group and Pterra, was filed on January 19, 2021.

[1] Chapter 58 (Part JJJ) of the laws of 2020.
[2] Ibid.

C. NYSEIA Comments and Recommendations

1. Introduction

New York is at a crossroads. Our state has met the challenge of the Climate Crisis by passing landmark legislation designed to ensure that we do our part to avert the most catastrophic effects of GHG warming through both the CLCPA and the AREGCBA. NYSEIA applauds the PSC for the work it is doing in an array of proceedings including here in 20-E-0197, and appreciates the opportunity to provide these comments offering our perspective on the applicability of many of the issues being discussed herein to the state's Electric Distribution Companies' (EDCs) distribution systems.

1.A. The Need for Holistic Thinking

While the focus of this proceeding to date has been on the bulk transmission system, NYSEIA submits that the historical separation of that system and utility distribution systems is no longer appropriate, as issues facing one system are increasingly affecting the other. In fact, the challenges of interconnecting renewable generation to the grid are affecting both utility-scale and DER projects. Fundamentally, NYSEIA believes that to meet the challenge of our time - and to ensure that we comply with the CLCPA - we need to examine the state's electricity system more holistically.

A recent example of this new reality was one brought forth by Avangrid in the February Interconnection Policy Working Group (IPWG) in which it described a growing "Closed Substations" issue. The IPWG is a monthly collaborative meeting in which industry and the utilities discuss challenges around interconnecting DER projects which is co-chaired by DPS and NYSERDA Staff. In the February meeting, Avangrid made reference a listing of 20 substations[3] currently referenced on the Distributed Generation website as "encumbered" by the capability of the transmission system.

Not only in New York but also in other early-mover states with increasing levels of DER penetration, issues such as Avangrid's Closed Substations are arising, demonstrating that if we are to achieve the decarbonized electric generation future that is necessary, we will need to jettison our historical compartmentalization of the bulk and distribution systems.

1.B. Transforming the Electric System Requires Transforming its Regulatory Paradigm

As previously stated, New York is currently at a crossroads. The state's ambitious greenhouse gas ("GHG") reduction goals will have far-reaching implications for a wide array of sectors,

[3] This is called "Encumbered Distributed Generation Queue Locations" on the website located here. 20 substations were included in this list as of the SIR queue as of March 12. 2021.

including housing, transportation and others, posing significant challenges and opportunities for transformative change. Perhaps no industry is tasked with a larger challenge than the electric sector. The challenge of requiring that in less than 10 years at least 70 percent of the electricity consumed in the state be from renewable sources is a massive one (to say nothing of the additional demands that will be placed on the sector due to the beneficial electrification that will be required to support the necessary changes in those other sectors), and it is a challenge that will require significant efforts for all industry stakeholders.

NYSEIA submits that no reasonable observer could believe that this challenge can be met through a business-as-usual approach and through the continuation of century-old policies which were not designed to empower the industry to build and interconnect high levels of renewable DER. This fact was recognized by the Commission almost five years ago in its May 19, 2016 Order in the REV proceeding, and the need for change has only grown in the intervening years.

NYSEIA is encouraged by the recognition of this fact that is evident in many of the PSC's, NYSERDA's and the Administration's statements and actions in the various proceedings that have been opened to implement the Act. NYSEIA submits that more needs to be done to, as the Commission stated in that REV Order "create a modern regulatory model that challenges utilities to take actions to achieve [the state's goals] by better aligning utility shareholder financial interest with consumer interest"[4] and that the goal should be to create the conditions in which utilities will "embrace, instead of resisting the rapid innovation that is occurring in the sector" and "will naturally and aggressively pursue system solutions" to achieve them.[5]

1.C. The Cost Causation Principle and Interconnection Cost Sharing

Perhaps the best example of how the currently-effective regulatory paradigm is incompatible with a high-DER future is the concept of Cost Causation. For more than a century, the electric system was constituted of large, centralized generation which flowed power unidirectionally downstream to load. Substantial upgrades to the system were infrequent and when they were necessitated, it was to interconnect either a large new load in the form of a factory or a new expensive large generating asset. These new facilities typically had large budgets which were able to easily absorb multi-million-dollar interconnection costs, and they were in almost every case the clear sole beneficiaries of the interconnection to the grid. In such a construct, it was perfectly reasonable to develop a policy of "beneficiary pays" and as such the concept of Cost Causation was implemented.

[4] New York PSC May 19, 2016 ORDER ADOPTING A RATEMAKING AND UTILITY REVENUE MODEL POLICY FRAMEWORK (Case 14-M-0101), p.2

[5] Ibid, pp. 6-7

DER, though, is utterly incompatible with this principle, and its application to the still nascent if burgeoning DER industry across multiple jurisdictions has raised significant fairness concerns and has interrupted the growth and sustained health of the industry as projects are stalled due to high interconnection costs.

Cost Causation has effectively turned interconnecting DER to the grid into a game of Russian Roulette. Substantially identical projects can receive interconnection bills which vary wildly based upon nothing more than the luck of the draw as to the available capacity on a given substation. Consider a hypothetical substation which has 11 MW of open capacity in a state which launches a new Community Solar program with a facility size cap of 5 MW. Five projects apply for interconnection to that substation and each are roughly equally far away from the substation with similar complexity. Projects 1 & 2 receive interconnection service agreements with costs of ~$375,000 and elect to move forward. Project 3 receives an estimate of $7.5MM. Projects 4 & 5 receive cost estimates of ~$375,000 (working on the assumption that Project 3 has moved forward and paid the cost of upgrading the substation and that additional capacity has been freed-up. This will lead to Project 3 dropping out of the queue because its economics simply cannot support an interconnection cost that is 20x those of its competitors' projects. Project 4 then gets reassessed and provided that same high cost, and it likewise drops out (as does Project 5).

While this example is hypothetical, scenarios like this are playing out across the United States as DER markets mature, and nowhere more so than here in New York. NYSEIA has been working with the Joint Utilities and NYSERDA and DPS Staff in the Interconnection Policy Working Group to implement policies to share costs more equitably among projects, and looks forward to an upcoming Order from the Commission on that issue, but even the best Cost Sharing mechanism is unlikely to enable the industry to build the needed amount of clean DER -- and, more importantly, provide sufficient motivation to the state's EDCs to undertake the necessary work to interconnect those facilities.

1.D. Is Cost Sharing Too Little Too Late? The Case for Socializing Interconnection Costs

It is also critical to recognize, though, that Cost Sharing itself is perhaps coming too late to meaningfully improve the industry dynamics. Over the past decade, the DER industry has been operating in a way that is best described as "avoidance" of interconnection costs. Per the example above, it has been critical for developers to try to identify areas of the grid where they can build projects which will not require substantial upgrades, triggering costs that are impossible for ~5 MW projects to absorb. In that time, those areas have been exploited -- the low-hanging fruit has been picked. The next 10 years will be ones that will require us to increase capacity and to build out the "modern distributed and bi-directional transactive electric system"

contemplated in the REV Order[6]. In short, we cannot realize our GHG reduction mandates without "growing the pie", and today, New York's utilities still today have no financial incentive to interconnect DERs.

As previously noted, Cost Causation was developed in part due to the fact that the interconnecting generation or load which would trigger the need for expensive grid upgrades could almost always be identified as the sole beneficiary of that interconnection. But interconnecting renewable DERs benefits everyone. Indeed, as the Northeast Clean Energy Council described in its Alternative Cost Allocation Proposal in Massachusetts' DER Interconnection proceeding last year[7], "the array of beneficiaries from distribution and/or transmission upgrades made to facilitate an interconnection of any DER Customer include, but are not limited to:

- Owners of new interconnecting DER facilities;
- Owners of existing DER facilities;
- Society via the facilitation of public policy (e.g., meeting the policy objectives of adding solar, thereby displacing fossil fuel-based generation and reducing greenhouse gas emissions) and through the fulfillment of public policy objectives (e.g., reducing pollutants and improving grid resiliency through the addition of clean energy and energy storage);
- Customers on the network, including non-DER Customers such as residential, commercial, and industrial customers, as well as new load that will connect to the network in the future;
- Future DER Customers, including but not limited to, those in the interconnection queue.

NYSEIA urges the Commission to strongly consider just how transformative a change our emerging high-DER future represents and to recognize the need to reevaluate the existing regulatory paradigm in the context of that change. Recent studies, such as Vibrant Clean Energy's Local Solar Roadmap, have demonstrated that in many cases the costs to interconnect DERs are largely if not completely mitigated by the benefits that accrue as a result of those interconnections, but they are not inconsequential costs, and they cannot be borne exclusively by the DER developers.[8]

[6] REV Order, p. 32

[7] NECEC's Alternative Cost Allocation Proposal February 28, 2020 (DPU 19-55) pp. 9-10

[8] "Why Local Solar For All Costs Less: A New Roadmap for the Lowest Cost Grid", Vibrant Clean Energy, December 2020.

1.E. The Need to Act Quickly and the Risk of Not Acting Decisively

NYSEIA notes that the CLCPA will require the Commission by July 1, 2024 and every two years thereafter to conduct a comprehensive review that outlines progress in meeting the Act's targets and "factors that will or are likely to frustrate progress toward the targets"[9], and submit that a failure to address the inherent challenge of EDC interconnection of DER to their distribution systems will inevitably result in the EDCs' underperformance in this area being identified as one such factor. NYSEIA urges the Commission to not wait an additional three years before reaching this currently self-evident conclusion.

Every day that passes without further decarbonization of our electric generation not only increases the negative impacts of catastrophic climate change, but also continues the historic climate injustices identified in the June 2020 White Paper which noted that "due to historic inequalities, disadvantaged communities are likely to bear the worst consequences of air pollution from fossil fuel-fired generation"[10] In fact, there is a growing recognition of the health co-benefits from decarbonization, with one recent study concluding that "policy and planning stand to benefit from the wealth of models and methods to support integrated analysis of energy, air quality, and health. The beneficial health findings can promote decarbonization strategies, and multi-pollutant solutions for health-damaging air pollution"[11]

As the Commission noted in its REV Order, "neither regulators nor industry participants should rest on an assumption that regulation and business models always need to adapt slowly and modestly" and that "recent developments...demonstrate that slow and deliberate progress is not always an option and may no longer be acceptable"[12]. In walking past the giant metronome in Union Square that was recently converted to a climate crisis countdown clock[13] on a 70-degree early March day this past week, New Yorkers saw that we now have just 6 years and 294 days left to act to avert the most horrific and deadly consequences of climate change. We must not allow any of those years to pass without creating the conditions for the state's electric industry to do its part in achieving the CLCPA's mandates.

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[9] New York DPS/NYSERDA: June 18, 2020 White Paper on Clean Energy Standard Procurements to Implement New York's Climate Leadership and Community Protection Act (Case 15-E-0302), p. 7

[10] Ibid, p. 13

[11] Gallagher CL, Holloway T. Integrating Air Quality and Public Health Benefits in U.S. Decarbonization Strategies. *Front Public Health*. 2020; 8:563358. Published 2020 Nov 19. doi:10.3389/fpubh.2020.563358

[12] REV Order, pp. 22-23

[13] https://gothamist.com/arts-entertainment/union-squares-giant-clock-now-climate-crisis-countdown-timer

2. Planning Process

As articulated in NYSEIA's comments submitted on January 18, 2021, there is an immediate need to create capacity, through infrastructure investment and advanced technologies, to facilitate interconnection at the transmission and distribution level. The Utility Working Group Study identified a number of projects that, if implemented, would alleviate interconnection challenges at the transmission and distribution level. The Commission Order on Phase 1 Projects in February was a positive first step. As identified in the Power Grid Study, the utilities claim that these distribution investments could add an additional 1,970 MW of headroom that enable the interconnection of distributed renewable resources. NYSEIA cautions how this will be truly enabled if there is misalignment between these investments, fully leveraged collaborative stakeholder processes to address interconnection barriers, and NYSERDA programs. For example, a narrow focus on substation improvements without recognition of the interconnection challenges and costs of downstream interconnection upgrades, such as express feeders or costly reconductoring, will reduce the utilization of these infrastructure investments.

NYSEIA strongly supports the recommendation in the Power Grid study to advance high-priority Phase 2 projects and urges the Commission to consider a robust stakeholder process that will allow for Phase 2 Plans to be developed and submitted to the Commission by the fourth quarter of 2021. Of specific concern is the need for an expansive view of integrated system planning that includes stakeholder input and takes into account the current and future capabilities of the bulk, local transmission, and distribution electric systems and inclusion of advanced technologies. As noted in the Power Grid study, there is work needed to coordinate distribution and transmission system plans and ensure that additional headroom is not just projected but actually enabled by distribution investment. One such example is validating that the local transmission plans are able to prove the unbottling of renewable energy that might interconnect at either the transmission or distribution level. The Power Grid Study notes *"there is no apparent coordination with the upstream local transmission headroom analyses, so there may be bottlenecks at the local transmission level that would prevent DERs from backfeeding"* (P20). Those bottlenecks have already arrived in New York as signaled by NYSEG's Encumbered Substation List. This list represents approximately 10 percent of Avangrid's transmission level substations in New York and cover large land areas where distributed generation development is possible. Without specific action as an outcome of this proceeding, that addresses transmission infrastructure plans that have a bearing on the distribution system, these substations and areas of New York will be closed for renewable development indefinitely.

Ensuring that those transmission needs are captured in Phase 2 project planning, if not accounted for in Phase 1, is a crucial step in ensuring that all investments are fully leveraged and can create an impact on the CLCPA goals we need.

3. Prioritization

NYSEIA recommends the creation of a dashboard that accurately reflects the DER State of the Grid and can be used as a tool to monitor progress against utility investment and renewable deployment in accordance with CLCPA goals. While the tools available in New York, including Hosting Capacity Maps and Interconnection Queue reports, are useful for project siting and interconnection application these tools do not currently allow for a holistic view of hosting capacity in the state to allow stakeholders to identify and address issues and trends regarding hosting capacity.

The proposed dashboard would be a tool to identify the quantity of substations and feeders that are at or close to a technical constraint and identify key metrics, with averages and key observations, for the following components:

- List of Penetration Ratio on each utility's feeder and each utility substation
- List of Hosting Capacity on each utility's feeder
- Quantity of "closed" feeders and substations
- Quantity of substations that have regular backfeeding from distribution to transmission
- Aggregate list of connected Distributed Energy Resources at each utility substation as compared to transformer ratings.

Additionally, in addition to coordinated planning between transmission and distribution systems, across regions, NYSEIA again identifies that coordination with NYSERDA will be necessary to appropriately prioritize and select Phase 2 distribution system investments. This collaboration should be a means for the Commission to factor into that process the CLCPA goals - in addition to the already-considered resiliency and compliance requirements - by understanding how distribution system investments can work in concert with the ever-evolving NYSERDA incentive programs, such as NY-Sun, to maximize clean DER deployment.

4. Highlight DER Level Policy Priorities to Meet CLCPA and Near-term Needs

In addition to a robust planning process, NYSEIA advocates that advancing and prioritizing policy discussions in a number of areas will help remove barriers to interconnection. NYSEIA and its members appreciate the efforts of the New York DPS and NY JU Ombudspersons in progressing topics in these forums; but they may only scratch the surface of what we need to achieve for CLCPA goals. Specifically, the Interconnection Policy Working Group (“IPWG”) and Interconnection Technical Working Group (“ITWG”) should be mandated to continuously improve the Standard Interconnection Review (“SIR”) process to enable streamlined and optimized interconnection of renewable resources and allow for the maximized use of existing

and planned infrastructure. NYSEIA highlights topics in Table 1 to demonstrate some of the critical topics being advanced and suggests an enhanced framework to move those issues forward.

NYSEIA recommends the following improvements to these stakeholder process:

1. Perform a biannual assessment of technical and policy constraints inhibiting maximized use of existing and expanded capacity to prioritize and expand topics including those included in Table 1.
2. Submit a report within two months of the conclusion of the assessment to the Commission regarding the status of these topics, with areas of consensus and timing of projected planning implementation, as applicable.
3. Continue collaborative efforts to discuss recommendations and identify solutions to be embedded into the SIR on a more frequent basis, on less than twice a year.
4. Should the IPWG or ITWG members not reach consensus on solutions, those recommendations and solutions be presented to the Commission for consideration.

Table 1: IPWG/ITWG Topics under consideration

Topic	**Description**
Implementation of Smart Inverter functionality	Smart inverters are capable of providing grid services such as voltage and frequency regulation, ride-through and dynamic current injections and anti-islanding. Their use allows renewable energy resources to not only interconnect to the grid, but also allow complete integration of non-conventional generator resources like wind and solar. Smart inverters are capable of reducing their own impact on the grid at minimal costs and offer reliability benefits. The commission should urge utilities to consider the rapid adoption of the various capabilities of smart inverters, especially on the distribution grid, as a necessary step to the full implementation of DERMS. As discussed at the ITWG the JU's have identified a roadmap that extends to Q2 2025. While engagement on this topic continues stakeholders need to identify how compensation for enabled grid services will be enabled through available or new tariff structures.
Distributed Energy Resource Management system (DERMS)	Actionable plans from the utilities for widespread deployment of a DERMS (Distributed Energy Resource Management system) for the distribution grid. DERMS along with (ANM) active network management has the potential to unlock existing hosting capacity and allow more renewable distributed energy resources to interconnect without having to incur excessive and unreasonable system upgrade costs. The deployment of such technology also allows resources to interconnect without long delays. The Commission and other stakeholders will have an important role to play in determining the principle of access and the construct of a regulatory framework for such a program and we urge that it be consistent across all New York utilities.

Reduction in utility interconnection costs	The IPWG has discussed several opportunities to reduce interconnection costs, including through proactive upgrades, cost sharing, and contingency amounts contained in interconnection estimates.
Non-Wires / SIR Process	Identify opportunities for non-wires solutions, including storage, to mitigate system issues and enhance the interconnection process.

5. Implement the CESIR "Cost-Sharing 2.0" Mechanism and Capital Queue

In addition to the above recommendations pertaining to the Power Grid Study, NYSEIA believes it is pertinent to highlight the importance of pending interconnection reforms filed for Commission consideration as an important enabler for existing DER development and in furtherance of CLCPA goals. On October 29, 2020 IPWG Members[14] filed the "*Petition of the IPWG Members Seeking a Cost-sharing Amendment to the New York State Standardized Interconnection Requirements for New Distributed Generator and Energy Storage Systems 5MW or less connected in parallel with utility distribution systems"* (20-E-0543). These reforms include the implementation of a comprehensive cost-sharing proposal to allow for cost sharing between projects with common capacity-enhancing upgrades. This proposal was driven by current impediments to interconnection created by saturated distribution networks and resulting costly upgrades.

As noted in the filing, the current cost-sharing mechanism has not resulted in any DER projects taking on the first-mover cost impact and paying for substation upgrades and as such, no DER projects have been sited in distribution-saturated areas of the Joint Utilities' respective service territories. An expanded cost-sharing model between interconnecting customers is a necessary but interim solution for the increasing needs and associated costs produced by electrification and renewable development (the costs of such infrastructure is cost prohibitive even via the proposed amended cost sharing mechanism). The mechanics contained in this proposal are worthy of consideration by the Commission to enable the implementation of Phase 1 and Phase 2 distribution projects and allow for continued deployment of distributed generation that may otherwise be stymied due to lengthy construction timeframes. Specifically, the creation of a "Capital Project Queue" would allow Interconnection Customers to submit applications while a long-lead capital project is taking place.[15] The Commission may consider the importance of

[14] IPWG members include Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., New York State Electric & Gas Corporation, Niagara Mohawk Power Corporation d/b/a National Grid, Orange and Rockland Utilities, Inc., and Rochester Gas and Electric Corporation (collectively, the "Joint Utilities") and the New York Solar Energy Industries Association ("NYSEIA"), New York Battery and Energy Storage Technology Consortium ("NY-BEST") and DER market participants.

[15] The Standard Interconnection Review ("SIR") process would then be advanced when the utility is within 18 months of completing the long lead upgrade.

establishing a metric of market interest, demonstrated by interconnection queue activity, as a key consideration when considering the amount of clean energy enabled by the implementation of distribution-level Phase 1 or Phase 2 projects. The immediate adoption of the Capital Project Queue process will provide an opportunity for renewable energy developers to signal that interest and support the utilities in their planning efforts to ensure that a solution can be adequately sized and utilized.

D. Conclusion

NYSEIA appreciates the opportunity to provide comments on this important matter and the Commission's consideration of the above recommendations. Please contact NYSEIA Executive Director Shyam Mehta at shyam@nyseia.org with any questions.

Dated: March 22, 2020

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