



## **Comments on NYISO’s Grid in Transition Draft Whitepaper**

**Natural Resources Defense Council, Sustainable FERC, Earthjustice,  
Association for Energy Affordability, Alliance for Clean Energy New York,  
American Wind Energy Association**

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Natural Resources Defense Council, Sustainable FERC, Earthjustice, Association for Energy Affordability, Alliance for Clean Energy New York, and American Wind Energy Association submit these comments to NYISO’s draft whitepaper, *Reliability and Market Considerations For A Grid In Transition*. This past month, the New York legislature passed the Climate Leadership and Community Protection Act (CLCPA), which requires the state to reach 70 percent renewable energy by 2030 and 100 percent zero-emission electricity by 2040, while also developing at least 6,000 MW of distributed solar energy by 2025, 3,000 MW of energy storage capacity by 2030, and 9,000 MW of offshore wind by 2035.<sup>1</sup> The CLCPA also requires the Department of Environmental Conservation to enforce economy-wide greenhouse gas emissions limits requiring an 85 percent reduction in statewide emissions relative to 1990 levels by 2050, aiming for net zero emissions. Efforts to decarbonize other aspects of the state’s economy—such as transportation and buildings—will rely on electrification, increasing the need for NYISO to facilitate the rapid deployment of clean energy resources and the construction of

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<sup>1</sup> CLCPA § 4, amending Public Service Law §§ 66-p(2)-(6).

transmission and other energy system infrastructure to allow these resources to efficiently serve customers.

We commend NYISO for recognizing the crucial role it must play in facilitating an efficient and reliable electricity system where the state's clean energy goals are achieved, and for proactively engaging stakeholders as it considers reforms to better align its markets with the state's policy imperatives. We appreciate that the whitepaper draft appears to have incorporated many of our prior comments,<sup>2</sup> as well as those of other stakeholders. But gaps remain. In these comments we identify areas in the draft whitepaper where further work is needed to adapt to the changing circumstances presented by the state's clean energy transition. We also provide suggestions for modifications in areas where NYISO's stated plans appear to be in conflict with efficiently serving customers given the state's goals.

**I. NYISO should focus on enhancements to energy and ancillary services markets and avoid dampening their signals through capacity or “fuel security” payments**

The draft whitepaper discusses several enhancements to NYISO's energy and ancillary services products as a way of ensuring the reliability of NYISO's markets. These include, for example, potential enhancements to shortage pricing, reserves products, promoting more frequent interchange scheduling with neighboring regions, and improving transmission congestion management. NYISO's focus in this area is well placed. These ongoing and possible future enhancements to E&AS products are important steps in ensuring that NYISO markets efficiently serve customers as state policies cause a significant increase in clean energy resources. Importantly, the ISO should evaluate the functionality of these markets in a high renewable and carbon free environment. The energy market relies on differential variable costs,

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<sup>2</sup> See Comments on NYISO's Grid in Transition Whitepaper Outline, Natural Resources Defense Council *et al.* (Apr. 30, 2019).

with some significantly higher variable cost assets, to have efficient price formation in the market. Market dynamics will be different when most market participants have very low marginal cost.

NYISO should prioritize E&AS market enhancements and avoid market revisions that work at cross purposes with this vision. The draft whitepaper proposes a set of measures, including expanding Buyer Side Mitigation (discussed more fully in Section III), which would increase capacity market prices and thus undermine NYISO's attempts to strengthen the E&AS markets. Similarly, NYISO's "fuel security" inquiry, if ultimately addressed via a payment mechanism to "fuel secure" resources, could risk blunting E&AS services revenues in service of delivery of an administratively-determined product that customers may not truly need. A fuel security payment mechanism initiative could threaten to exceed NYISO's core competencies by straying into the realm of choosing the generation mix and regulating upstream inputs to resource delivery rather than the services themselves. Inflating capacity market revenues shifts cost recovery for generators away from the E&AS markets and towards the capacity construct.<sup>3</sup> This, in turn, dampens the effect of any enhancements to the E&AS markets on driving new entry of resources, both because payments from the E&AS markets will make up a smaller share of overall revenues and because excess capacity can lead to excess supply in the E&AS markets, which in turn causes prices to fall.<sup>4</sup>

NYISO should seek to strengthen the E&AS markets rather than weaken them. Prices in the E&AS markets value a range of services, such as fast ramping capabilities, that are necessary to guarantee reliability in the future system. These payments are also more granular, reflecting

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<sup>3</sup> James F. Wilson, "Missing Money" Revisited: Evolution of PJM's RPM Capacity Construct at 7 (2016), available at [https://www.publicpower.org/system/files/documents/markets-rpm\\_missing\\_money\\_revisited\\_wilson.pdf](https://www.publicpower.org/system/files/documents/markets-rpm_missing_money_revisited_wilson.pdf).

<sup>4</sup> *Id.*

the value of electricity in the hour and location where it is actually needed. By contrast, the capacity construct relies upon a number of administratively-determined inputs which are difficult to accurately assess, including projections of future load and estimates of the Net Cost of New Entry (Net CONE).<sup>5</sup> Payments for fuel security might similarly place NYISO in a policymaking role of administratively setting market rules to qualify for market participation—a role that RTOs are less well suited to play than they are at administering markets for better-defined services. The prospect of continued amendments to the capacity construct and the potential addition of a fuel security product also create a sizable amount of regulatory risk, which the whitepaper identifies as a significant cost for generators.<sup>6</sup>

For these reasons, we support the whitepaper’s overall goal of strengthening the markets for energy and ancillary services and suggest NYISO focus on these revenues for its future market rather than capacity or other similar administrative constructs.

## **II. NYISO’s mitigation framework must be fundamentally overhauled to align with state policy goals**

The draft whitepaper emphasizes the need for NYISO to efficiently serve customers as New York’s public policy goals are achieved. Its current buyer-side mitigation (BSM) regime threatens to undermine that goal. The whitepaper correctly recognizes that competitively-procured RECs are compatible with wholesale markets, and appropriately suggests that NYISO’s mitigation framework must be comprehensively reviewed to better align with state policy. But the solutions suggested in the paper do not match the task at hand. The report describes two approaches to expanding BSM rules: creating a Competitive Auctions with Sponsored Policy

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<sup>5</sup> Page 32 of the draft whitepaper notes that the market has consistently attracted investment at prices far below the administrative estimate of Net CONE. As the draft points out, this is consistent with the current state of oversupply for the New York power system. But it is also indicative of the challenges involved in setting and updating administrative estimates of the cost of entry, estimates that have increasingly diverged from the actual prices needed to induce entry.

<sup>6</sup> Draft Whitepaper at 29.

Resources (CASPR)-like two-stage auction where incoming renewable resources pay incumbent generators to retire, or alternatively, including revenues derived from the sale of RECs in the BSM Part B evaluations.

Neither approach provides a satisfying solution. The CASPR approach would burden consumers with unnecessary costs. And while reforming Part B evaluations would be a step in the right direction, the process of applying buyer-side screening to a range of state-sponsored competitive clean energy resources would nevertheless perpetuate a process that creates needless delay and adds costs for customers by creating regulatory uncertainty.

As NYISO has noted, RECs compensate renewable energy resources for a range of benefits that are not recognized in the capacity market.<sup>7</sup> Yet under a CASPR-like regime, such as the one adopted by ISO-NE, state-sponsored resources could be excluded from the capacity market unless they secure a match with an equivalent amount of retiring incumbent generation and effectively pay incumbent generators to retire. This program would not advance the whitepaper's stated goals of ensuring reliability at least cost to consumers, since a retiring generator is not providing any value to customers but is nevertheless rewarded simply for its incumbent market position. Adopting such a proposal would drive up the cost to consumers by requiring them to pay for redundant capacity to the extent state-sponsored resources cannot secure a match with retiring generation, and by creating uncertainty over the availability of future capacity market payments for state-sponsored clean resources, thereby increasing their financing costs. Ultimately the CASPR policy adopted by ISO-NE acts simply as a wealth

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<sup>7</sup> See NYISO, *Carbon Pricing: Treatment of Existing REC Contracts Proposal Update* (Dec. 3, 2018) at 3, available at <https://www.nyiso.com/documents/20142/3760282/20181203%20Carbon%20Pricing%20-%20NY%20REC%20Resources%20vFinal.pdf/1aac0a92-bcff-f19f-d58f-c4c94b397168> (noting that REC payments support “multiple state policy objectives”).

transfer from state-sponsored resources and customers to the owners of existing resources that may retire.

Moreover, CASPR is inconsistent with the pace and scale of the clean energy transition mandated by state laws. The mechanism's substitution auction only enables new state-sponsored clean energy resources to enter the capacity market to the extent and at the pace incumbent resources are willing to exit.<sup>8</sup> If incumbents are unwilling to give up their market position, then legally mandated state-sponsored clean energy resources are excluded from the market and customers are forced to pay for excess, unnecessary, and duplicative emitting resources, contrary to the New England states' decarbonization goals. NYISO should not repeat ISO-NE's mistakes.

Instead of making it harder for state-supported resources to participate in the Installed Capacity Market, NYISO should focus on an approach to resource adequacy that will lead to efficient outcomes in light of the legislature's chosen resource mix. Such an approach could entail embracing a state role in resource adequacy. Far from a "risk," as the whitepaper describes it, the state taking on such a role could provide a path to FERC approval of a resource adequacy regime that does not over-procure resources. Further, such a regime could leave NYISO's capacity market untouched with respect to non-state supported resources and need not result in the retention of "uneconomic resources" as the whitepaper suggests. In fact, it could be the best path to *avoiding* such retention, as NYISO's current BSM regime encourages.

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<sup>8</sup> Notably, in the first year of ISO-NE's CASPR substitution auction, 2,160 MW of state-sponsored resources sought to enter the capacity market, but only 544 MW of incumbent resources expressed willingness to possibly exit prior to the capacity auction, a large mismatch between supply and demand. *See* ISO New England Inc., Docket No. ER19-\_\_\_\_-000 Informational Filing for Qualification in the Forward Capacity Market, *available at* [https://www.iso-ne.com/static-assets/documents/2018/11/public\\_er19-\\_\\_\\_\\_-000\\_11-6-18\\_fca\\_13\\_info\\_filing.pdf](https://www.iso-ne.com/static-assets/documents/2018/11/public_er19-____-000_11-6-18_fca_13_info_filing.pdf). Only 54 MW of state-sponsored resources participating in the substitution auction received a capacity supply obligation. *See* ISO New England, Forward Capacity Market (FCA 13) Result Report, *available at* <https://www.iso-ne.com/static-assets/documents/2018/05/fca-results-report.pdf>.

The soundest course of action is to continue to recognize that New York’s renewable and energy storage programs are compatible with wholesale markets. This includes New York’s latest initiative to encourage the development of offshore wind through the use of Offshore Renewable Energy Credits (ORECs). On page 54, the draft whitepaper implies that New York’s new OREC program may warrant different treatment than past programs. However, both fixed and Index ORECs advance NYISO’s goals of competitive procurement of resources at lowest costs to consumers. ORECs that are indexed to an average price of electricity preserve the incentive for each generator to respond to price signals from the wholesale markets concerning where and when to produce electricity. Index ORECs thus facilitate efficient production of electricity, while also furthering the state’s innovation goals for the offshore wind industry. Further, they provide an efficient mechanism for contract recipients to hedge market index price risk. As a recent paper from Jacob Mays, David Morton, and FERC chief economist Richard O’Neill recognizes, the liquid availability of multiple long-term hedging products is necessary to facilitate the least cost mix of resources in capacity market regions.<sup>9</sup> NYISO should recognize that it does not have a monopoly on markets, and that external means of hedging can improve outcomes for customers.

The root of the flaws in NYISO’s buyer-side mitigation framework is ultimately the misconception that adjustments are needed to preserve the “competitiveness” of non-state supported resources. Ultimately, the purpose of state policies is to replace polluting resources with clean ones. To the extent NYISO supports the continued entry and retention of resources

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<sup>9</sup> See Mays et al., *Asymmetric Risk and Fuel Neutrality In Capacity Markets* (2019), *available at* [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3330932](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3330932); presentation available at <https://www.newton.ac.uk/files/seminar/20190321143015151-1544867.pdf>.

that are unnecessary in light of the state’s policies, it will simply create inefficiency and increase costs for customers.

### **III. The whitepaper does not fully leverage the significant potential of flexible load**

To meet the state’s climate goals, NYISO must cost-effectively serve customers in the future by ensuring that demand flexibly adjusts to reduce system peak needs. However, while the draft whitepaper recognizes the need for flexible load and storage due to increasing deployment of variable renewable energy, NYISO can do much more to fully leverage the potential of growing flexibility in emerging and evolving sectors, as set forth below. Beyond allowing demand to set price, NYISO can do more to ensure that NYISO’s markets accurately reflect the benefits and impacts retail-administered demand-side programs. Further, NYISO must follow up on its DER market participation model to allow for improved wholesale market opportunities for a wide range of DERs, including smart vehicle charging programs, which are not well served by the model that NYISO has developed to date.

In the transport electrification sector, a number of studies and pilots have emerged concerning the charging and discharging on the grid for distribution grid<sup>10</sup> as well as wholesale<sup>11</sup> and ancillary services.<sup>12</sup> This same level of load flexibility is emerging in building electrification with heating and cooling systems capable of storing thermal load. Enabling these technologies to participate in the wholesale markets will require market adjustments but offers significant benefits. We suggest the report include the following recommendations to address the challenges of engaging on the demand side.

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<sup>10</sup> “Will Electric Vehicles Drive Distribution Grid Upgrades?: The Case of California,” *available at* <https://ieeexplore.ieee.org/document/8732007>.

<sup>11</sup> “Clean vehicles are an enabler of a clean grid,” *available at* <https://iopscience.iop.org/article/10.1088/1748-9326/aabe97/pdf>.

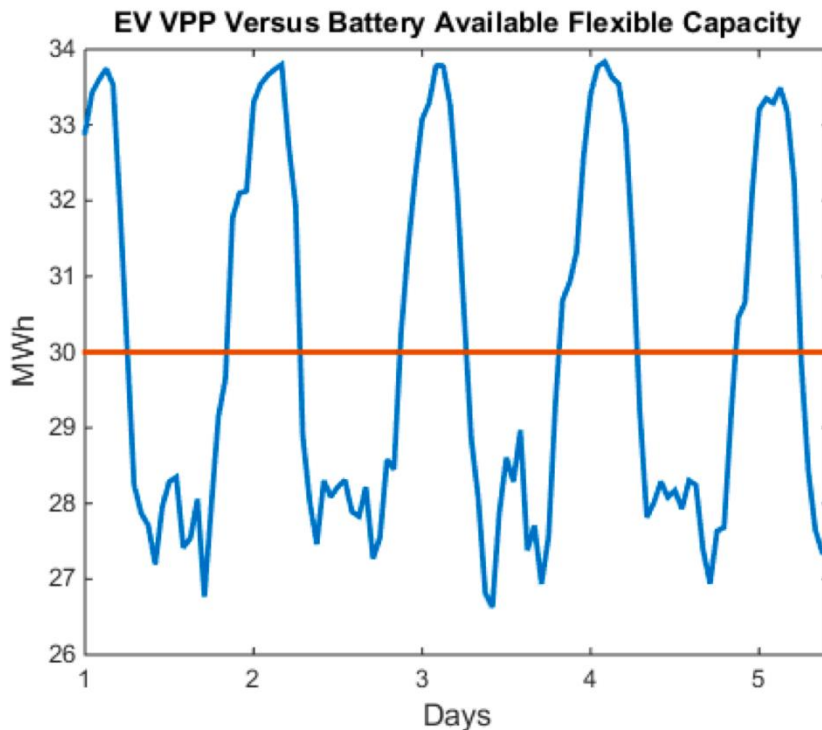
<sup>12</sup> Los Angeles Air Force Base V2G Demonstration,” *available at* <https://www.energy.ca.gov/2018publications/CEC-500-2018-025/CEC-500-2018-025.pdf>.



**A. DERS should be enabled to participate in all services they are capable of providing**

NYISO's currently proposed entry rules for aggregated DERs to offer wholesale services are quite limiting. While NYISO has taken steps to allow DERs to participate under existing models, its proposal has not included adequate new tools and services to ensure that aggregated DERs can be integrated into the markets in a reliable and cost-effective manner. For example, some DER aggregations such as smart vehicle charging programs may be able to both ramp up and down power, and will do so in a fashion that is not symmetrical. But NYISO's participation model does not enable such asymmetric charging and discharging.

Further, the temporal nature of aggregated resources can be seen in the graphic below which simulated the available flexibility of a fleet of electric vehicles whose capacity is on average 30MWh and compared that to a stationary 30MWh battery.



What can be seen is the variant nature of available flexible capacity as EVs connect and disconnect during the day. When aggregated DERs are modeled for capabilities, NYISO often takes one performance capacity measurement as performance measure. However, depending on the time of day this can drastically limit the amount of flexibility aggregated DERs can offer. Updating NYISO models to incorporate this temporal aspect into their services will enable more DER participation and better capture their value.

**B. NYISO should consider appropriate metering of aggregation using existing systems of resources**

NYISO's metering requirements pose a significant barrier for DER market participation. While the draft whitepaper does acknowledge the limitation of existing metering requirements on demand response participation, it does not consider existing solutions to overcome this issue. NYISO should consider the example of utilities which are including existing, embedded metering systems into their methodologies.<sup>13</sup> Further, NYISO should consider softening its metering requirements for aggregated DERs in accordance with the methodologies being used successfully by other RTOS, and only require the aggregate of the resources be hard metered.

**C. Updates of the time horizon and closures of the DAM and RTM should be investigated**

The energy system's transition to variable resources raises new challenges in accurately forecasting system needs for long time horizons. We agree with what was described in the draft whitepaper that allowing shorter time periods for offers in both the real-time and day-ahead markets will improve scheduling of this evolving market. However, to enable aggregate DERs to

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<sup>13</sup> Compliance Filing Residential Electric Vehicle Charging Tariff Docket No. E002/M-15-111 And E002/M-17-817", available at <https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId=%7bA0BF0F6B-0000-C016-839D-F8267E380A28%7d&documentTitle=20195-153306-01>.

offer their maximum potential flexibility, new market services beyond the day-ahead market with time closures closer to delivery time, such as an intraday market, will allow more aggregate flexible load and supply to participate.<sup>14</sup> While highly-accurate forecasting of aggregated DERs flexibility is possible,<sup>15</sup> closer delivery times will enable more DER capacity to participate without comprising energy security.

#### **D. Aggregation should not be required under a single node**

The current market rules require that DERs can only be aggregated under a single transmission node. Limiting aggregations to a single node significantly erodes the economics of aggregating DERs to participate in the wholesale markets, creating a barrier to integrating these technologies into the wholesale markets. Such a limitation could also diminish the usefulness of aggregated DERs to system operators, restricting their ability to deploy these resources economically and in response to reliability needs. Therefore, we strongly recommend that NYISO remove this requirement and, if necessary, develop an alternative method to account for any price separation between nodes.

#### **IV. The whitepaper should address transmission planning improvements to achieve the state's clean energy goals**

NYISO must also expand on its work to further the rapid integration of clean energy resources into the system through improved interconnection and transmission planning processes. On interconnection, NYISO should examine market reforms, such as separate class year pools for different geographic regions, to speed up the class year process and allow projects to move through the queue more quickly.

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<sup>14</sup> The Next-Generation Retail Electricity Market in the Context of Distributed Energy Resources: Vision and Integrating Framework," *available at* <https://www.mdpi.com/1996-1073/12/3/491/pdf>.

<sup>15</sup> "Performance Assessment of Black Box Capacity Forecasting for Multi-Market Trade Application," *available at* <https://www.mdpi.com/1996-1073/10/10/1673/pdf>.

With regard to transmission, NYISO should be commended for its work in ushering projects through the Order 1000 process, and for the robust analysis and careful study it has employed in doing so. The whitepaper should build on this work by exploring how the transmission planning framework can be further enhanced to efficiently facilitate achievement of the state's clean energy goals while at the same time enhancing system reliability and resilience.<sup>16</sup> This analysis should include a thorough review of the public policy transmission planning process (including identifying inefficiencies to determine where the process can be sped up), and how public policy needs should most effectively be defined given the CLCPA's requirements that the state achieve 70% clean electricity by 2030 and an overall 85% reduction in statewide emissions by 2050. It should also review related processes. For example, NYISO should explore whether changes are necessary to the interconnection and CRIS rights assignment process to facilitate the construction of an offshore wind backbone or hub transmission facilities.<sup>17</sup> Finally, NYISO should examine the possibility of implementing new technologies to enhance system efficiency, such as dynamic line ratings equipment to more efficiently use existing infrastructure.

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<sup>16</sup> See May 22, 2019 Comments of Natural Resources Defense Council, Environmental Advocates of New York, and Alliance for Clean Energy New York on Proposed Public Policy Transmission Needs, In re New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2018, Case 18-E-0623.

<sup>17</sup> PJM is doing a version of this. See, e.g., <http://insidelines.pjm.com/the-unique-challenge-of-developing-transmission-for-offshore-wind/>.

Respectfully submitted,

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