STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission to Consider Resource Adequacy Matters **Case 19-E-0530**

COMMENTS OF NATURAL RESOURCES DEFENSE COUNCIL, SUSTAINABLE FERC PROJECT, SIERRA CLUB, AND VOTE SOLAR TO MATERIALS RELATED TO THE JULY 10, 2020 TECHNICAL CONFERENCE

The Natural Resources Defense Council, Sustainable FERC Project, Sierra Club, and Vote Solar (Clean Energy Supporters) submit these comments in response to the Public Service Commission's (Commission) July 20, 2020 notice soliciting comments concerning materials presented at the July 10, 2020 technical conference. Specifically, these comments respond to the qualitative and quantitative analyses prepared by The Brattle Group (Brattle) for the conference, and more broadly discuss steps that the Commission should take to meet New York's resource adequacy needs in a way that facilitates rather than frustrates achievement of State climate and clean energy goals.[1]

Comments previously provided by numerous parties in this proceeding show an overwhelming consensus that NYISO's current market design is untenable given the Climate Leadership and Community Protection Act's (CLCPA) mandate for rapid, cost-effective, and

[1] *See* The Brattle Group, Qualitative Analysis of Resource Adequacy Structures for New York (May 19, 2020), http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={CF8F6FCA-AB52-492A-A089-C5C94B0B62E9} ("Qualitative Analysis"); The Brattle Group, Updated Quantitative Analysis of Resource Adequacy Structures (July 1, 2020), http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={9D20EBBD-4DF8-4E4E-BEC1-F4452345EBFA} ("Quantitative Analysis").

equitable decarbonization and the harmful impacts of buyer-side mitigation (BSM) rules.[2] As Clean Energy Supporters have warned, and the Brattle Quantitative Analysis confirms application of BSM would effectively exclude many renewable, storage, and demand-side resources from the capacity market, saddling customers with enormous and unnecessary costs and making it more difficult for the State to reach the ambitious 2030 and 2040 electric sector requirements of the CLCPA. Restrictive BSM rules are already blocking clean resources from entering the parts of the state where capacity is most needed and air quality is jeopardizing the health of disadvantaged communities.

While buyer-side mitigation is the latest manifestation of NYISO's problematic structure for resource adequacy, the problems go far deeper and can only be resolved by the state fundamentally transforming the way it addresses how resource adequacy is evaluated and bringing those mechanisms under its own authority. As the passage of the CLCPA makes clear, decarbonization is about much more than eliminating carbon emissions at the lowest cost—the clean energy transition must promote family-supporting jobs, provide economic opportunity to disadvantaged communities, and address the disproportionate pollution burden borne by those communities.

[2] Reply Comments of Advanced Energy Economy Institute, Alliance for Clean Energy New York, American Wind Energy Association, Solar Energy Industries Association at 5, http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={6B64E85A-8C3E-45D4-B77F-18D294FD35B1}("There was overwhelming agreement in parties' initial comments that NYISO rules are impeding New York from reaching its clean energy goals"); Reply Comments of Consumer Power Advocates at 1, http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={1275F6BB-D0D1-47B2-BB31-CC0221B270DE} ("A review of the initial comments provided by approximately fifty parties in this Proceeding [shows] . . . virtually all parties agree [that] the status quo regarding the design of the NYISO markets (for capacity, energy and ancillary services) is no longer tenable in the face of significant and growing penetration of resources that receive out-of-market payments in furtherance of public policy goals such as the Climate Leadership and Community Protection Act"); Reply Comments of Exelon Corporation and EDP Renewables North America at 1, http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={791FA977-4E96-4634-B77F-AAD61ACB7FF4} ("As many of the initial comments in this docket make clear, the New York Independent System Operator Inc.'s ('NYISO') current market rules conflict with the State's ambitious carbon reduction goals").

I. The Brattle Analyses Confirm that Buyer-Side Mitigation Imposes Significant Consumer Costs and Health Impacts and Jeopardizes the State's Ambitious Climate and Clean Energy Goals

A. New York Must Act Now to Avoid Billions of Dollars in Additional Costs to Consumers to Achieve CLCPA Goals

An immediate threat to New York's clean energy goals and the health of New York communities is NYISO's application of BSM rules to clean energy resources that are required by the CLCPA and therefore incentivized by the State. As Clean Energy Supporters have previously stated in this proceeding, NYISO's misapplication of BSM to clean energy resources inflates revenues of unneeded fossil fuel plants that would otherwise retire and unnecessarily increases consumer costs.[3] Brattle's Qualitative Analysis confirms these concerns:

> Applying BSM would prevent clean resources from clearing the market and induce more non-policy-supported resources to clear, both existing and new ones. This would cause oversupply, retain excess fossil plants, and (in a worst case scenario) attract new fossil plants to enter the market. These outcomes would be counterproductive from a policy perspective, inducing excess customer costs from unnecessarily high capacity prices, inflating the costs of clean energy contracts, and potentially driving private capital to invest in fossil plants that will not be needed. The scale of these problems would grow with the scope of BSM application.[4]

Brattle's Quantitative Analysis demonstrates just how significant the cost impacts would be, even under very conservative assumptions. By 2030, when the State must achieve 70% renewable electricity, Brattle estimates that "Status Quo BSM" will cost customers between $400 million and $900 million each year, representing 12% to 20% of statewide capacity costs.[5] In a scenario of "Expanded BSM" (where based on FERC's December 2019 decision on PJM's

[3] Comments of Clean Energy Supporters at 2, 5, http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={DF5785BF-00B2-4CAD-90D2-F5D5484E34A4}.
[4] Qualitative Analysis at 5.
[5] Quantitative Analysis at 5.

Minimum Offer Price Rule, the scope of mitigation would include all new and most existing policy-supported resources), these costs are projected to be between $1.3 billion to $2.8 billion each year by 2030, representing 35% to 63% of statewide capacity costs.[6] These excessive and unnecessary costs will only grow beyond 2030 as the state continues to deploy clean energy resources to achieve the CLCPA requirement of reducing 100% of the electricity sector's greenhouse gas emissions by 2040, and makes the achievement of this already ambitious mandate more challenging.[7] Brattle's analysis is generally consistent with earlier studies showing near-term costs of approximately $1 billion annually for New York as early as 2021, and $2.7 billion annually in 2030.[8]

The economic waste caused by BSM rules stems from several sources. BSM rules serve to block clean resources from being selected in the capacity market, which raises prices for the resources that clear the market. The increased cost also reflects the fact that New York will face higher contract prices for its renewable energy transition because BSM rules would deny capacity payments to many renewable resources that the State will procure in the coming decade, leading to higher REC prices ultimately borne by ratepayers.[9] This creates a situation where New Yorkers pay for the same capacity twice: they will first pay for clean resources through programs designed to facilitate the State's clean energy goals, and then they will pay a second time for duplicative capacity when the BSM rules block clean resources from being selected in the capacity market auctions. Allowing billions of dollars of economic waste to materialize is incompatible with the CLCPA framework of decarbonization policies designed to minimize

[6] *Id.*
[7] CLCPA § 2.
[8] Rob Gramlich & Michael Goggin, Too Much of the Wrong Thing: The Need for Capacity Market Replacement or Reform (2019), at Appendix C Table 1.
[9] *Id.* at 5, 7.

costs and to maximize the total benefits to New York.[10] It is also inconsistent with the Commission's statutory obligations to ensure the provision of safe and adequate service at just and reasonable rates.[11]

Importantly, Brattle's Quantitative Analysis is very conservative—and may significantly underestimate the cost impact of BSM on New Yorkers—for at least three reasons. First, the Quantitative Analysis may dramatically overestimate the quantity of public policy resources that are exempt from BSM. The size of the exemptions for public policy resources is a significant driver of customer cost impacts,[12] but it is "subject to considerable uncertainty."[13] FERC and NYISO have implemented a BSM regime that is expressly designed to negate the "effects" of New York's clean energy policy by eliminating,[14] narrowly construing,[15] and capping exemptions based on the MWs of generation retirements that are "directly" caused by state policies.[16] In particular, NYISO's ambiguous and overly narrow exemption for renewable resources is limited to the capacity retirements due to "new or amended" state actions, which could prevent thousands of MWs of clean energy from participation in the capacity market because the state regulatory actions have already occurred, but the resulting resource retirements

[10] CLCPA § 2.
[11] Public Service Law § 65(1).
[12] Quantitative Analysis at 9 (an increase of 400 MW of exempt renewable energy capacity decreases costs by $50 million in 2030 dollars).
[13] *Id*. at 13.
[14] New York State Public Service Commission, et al. v. New York Independent System Operator, Inc., Order Granting In Part And Denying In Part Rehearing And Clarification And Rejecting Compliance Filing As Moot, Docket Nos. EL16-92-001, ER17-996-000 (not consolidated) 170 FERC ¶ 61,120 (Feb. 20, 2020).
[15] New York State Public Service Commission and New York State Energy Research and Development Authority v. New York Independent System Operator, Inc., Order Denying Complaint, Docket No. EL19-86-000, 170 FERC ¶ 61,119 (Feb. 20, 2020).
[16] New York Independent System Operator, Inc., Order Addressing Arguments Raised On Rehearing And Compliance, Docket Nos. ER16-1404-001 and Docket No. ER16-1404-002, 172 FERC ¶ 61,058 at ¶ 50 (July 17, 2020) ("Renewables Exemption Order"); *see NYPSC v. NYISO*, 170 FERC ¶ 61,119 at P 37; *see also Calpine v. PJM*, 169 FERC ¶ 61,239 at P 5 (explaining that the Commission is applying a MOPR to state-sponsored resources in order to "protect PJM's capacity market from the price-suppressive effects of resources receiving out-of-market support").

will not take place for years to come.[17] Accordingly, the Quantitative Analysis likely overestimates the clean energy resources that will be exempt from NYISO's BSM rules, and therefore understates the cost impact to New Yorkers.

Second, the Quantitative Analysis expressly acknowledges using "conservatively low" effective load-carrying capability (ELCC)[18] for renewables based on hourly data with lower output than future installations are likely to achieve and that it does not capture diversity across sites for off-shore wind resources.[19] Accounting for diversity across sites could materially increase the ELCC of off-shore wind because the variability of wind generation per unit declines significantly as a function of geographic dispersion.[20] Accordingly, the Quantitative Analysis likely underestimates the cost impact of BSM rules because it uses a very low ELCC for these resources.

Third, the Quantitative Analysis does not account for application of BSM rules to demand response resources.[21] Demand response resources are loads capable of being interrupted upon demand and include local generators that are not visible to NYISO.[22] They provide significant capacity value because they are available to be dispatched, often for long durations, exactly when capacity is most needed.[23] On February 20, 2020, FERC issued an order that

[17] Renewables Exemption Order, Glick Dissent at ¶¶ 30-31.
[18] Effective Load Carrying Capability (ELCC) is a measure of the amount of equivalent perfect capacity that can be provided by an intermittent or energy-limited resource.
[19] Quantitative Analysis at 21.
[20] NERC, Methods to Model and Calculate Capacity Contributions of Variable Generation for Resource Adequacy Planning, at 21-22 (March 2011), https://www.nerc.com/files/ivgtf1-2.pdf.
[21] Quantitative Analysis at 22.
[22] Under NYISO's tariff, demand response resources are referred to as Special Case Resources or "SCRs". NYISO's Services Tariff defines SCRs as: "Demand Side Resources whose Load is capable of being interrupted upon demand at the direction of the ISO, and/or Demand Side Resources that have a Local Generator, which is not visible to the ISO's Market Information System and is rated 100 kW or higher, that can be operated to reduce Load from the NYS Transmission System or the distribution system at the direction of the ISO . . ." NYISO, Services Tariff, § 2.19 (22.0.0).
[23] *See* Report by the New York Independent System Operator to the Installed Capacity Subcommittee of the New York State Reliability Council, Special Case Resources: Evaluation of the Performance and Contribution to

revoked the blanket exemption of BSM rules for demand response resources that had been in place since 2017 and initiated a "paper hearing" to determine if any specific retail-level demand response resources should be exempted, which is ongoing.[24] The PSC has acknowledged that applying BSM rules to demand response resources will negatively impact wholesale and distribution reliability, diminish competition, unnecessarily increase ratepayer costs, and frustrate state policy goals.[25] Accordingly, the Quantitative Analysis likely underestimates the cost impact of BSM rules to demand response resources.

In short, Brattle uses highly conservative assumptions for several key cost drivers in its Quantitative Analysis. As a result, the Quantitative Analysis may significantly underestimate the cost impact of BSM on New Yorkers. Application of BSM rules to clean energy resources undermines New York's ability to achieve its environmental goals by obstructing the entry of new resources at a time when significant new capacity may be needed to address the unprecedented retirements in the downstate region—making it more likely that dirty rather than clean resources will fill the gap.[26] BSM rules therefore represent a fundamental threat to New York's clean and just energy transition.[27]

Resource Adequacy, at 5 and Appendix B (May 2012), http://www.nysrc.org/pdf/MeetingMaterial/ICSMeetingMaterial/ICS_Agenda135/2012%20SCR%20Study%20Report%20for%20ICS%20-final-05-01-12.pdf.

[24] *New York State Public Service Commission, et al. v. New York Independent System Operator, Inc.*, Order Granting In Part And Denying In Part Rehearing And Clarification And Rejecting Compliance Filing As Moot, Docket Nos. EL16-92-001, ER17-996-000 (not consolidated) 170 FERC ¶ 61,120 (Feb. 20, 2020).

[25] *New York State Public Service Commission, et al. v. New York Independent System Operator, Inc.*, Docket No. EL16-92-001 - Initial Comments And Testimony of The New York State Public Service Commission, Advanced Energy Management Alliance, New York State Energy Research And Development Authority, City of New York, Natural Resources Defense Council, and Energy Spectrum, Inc. at 8 (May 11, 2020).

[26] Renewables Exemption Order, Glick Dissent at ¶ 31.

[27] Additionally, in its Complaint on behalf of the PSC and NYSERDA and Request for Fast Track Processing, Docket No. ER19-467 (July 29, 2019), the PSC's expert stated that "buyer side mitigation plays an enormous role in [ESR] project development decisions ... Subjecting Energy Storage Resources to potential mitigation in the ICAP market creates a powerful barrier to market entry because project owners know they may not be compensated for the capacity value their resources provide to the system. This market barrier will significantly reduce the magnitude and rate of Energy Storage Resource deployment in the Mitigated Capacity Zones [located downstate], thereby interfering with and impeding legitimate State policy objectives designed to increase reliance on a cleaner energy resource portfolio." NYSPSC Complaint, Attach. A, Affidavit of Adam B. Evans at pp. 18-19.

B. BSM Imposes Disproportionate Health Impacts on Disadvantaged Communities

Beyond these significant and unnecessary consumer costs, the application of BSM will have a disproportionate impact on the health and economic well-being of individuals living in disadvantaged communities. In particular, Status Quo BSM rules apply to resources developed in Zones G-J (the Lower Hudson Valley and New York City), a capacity-constrained area of the grid where the continued operation of heavily polluting peaker plants poses significant economic, public health, and environmental hazards to nearby disadvantaged communities.[28] These peaker plants are some of the most inefficient generating resources in the state, with significantly higher costs than the average cost of electricity in New York. These high costs disproportionately impact disadvantaged New Yorkers, many of whom pay over six percent of their annual household income in energy costs.[29] Brattle's Quantitative Analysis confirms that the inefficiencies of BSM rules will manifest through delayed retirement of uneconomic fossil plants in Zones G-J.[30] In Zone J alone, Status Quo BSM rules would mitigate 6,670 MW of zero-emissions resources needed to reach 2030 goals, including energy storage resources (ESRs), which are particularly important to alleviating air quality concerns in disadvantaged communities.[31]

BSM rules are a structural barrier to an equitable energy transition because heavily polluting peaker plants are concentrated in disadvantaged communities, especially in the New

[28] Comments of New York City Environmental Justice Alliance at 8, http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={27478D12-4E57-44E3-8F00-FA7CFCEF5203}; *see also* "Dirty Energy, Big Money," Peak Coalition Report at 5, *available at* https://nylpi.org/wp-content/uploads/2020/05/PEAK-report-Dirty-Energy-Clean-Money-May-2020.pdf.
[29] *See id.*
[30] Qualitative Analysis at 9.
[31] Quantitative Analysis at 12.

York City region.[32] Although these plants have annual capacity factors under 10% and run primarily during the summer months, their emissions contain as much as 20 times the amount of NOx as a typical thermal plant, which contributes to ground level ozone.[33] The devastating impacts of this kind of pollution are not hypothetical: exposure to ozone causes an estimated 400 deaths, more than 800 hospital admissions, and more than 4,000 emergency department visits in New York every year,[34] and long-term exposure to the types of air pollutants associated with peaker plants has been linked to the disproportionate impacts of Covid-19 among disadvantaged communities in New York.[35]

In addition, because these facilities operate at peaks coincident with extreme heat, DEC's rules to impose more stringent NOx emissions limits will likely lead to the retirement of many of them, particularly older, higher-emitting units, and are prime candidates to be replaced with ESRs. However, the application of BSM to ESRs makes it less economic to do so, meaning that ESRs that would otherwise replace these high-emitting units may not be sited where they are needed most. By making it slower and more costly to phase out New York City's peaker plants and replace them with non- or low-polluting solutions like storage, the current market design will perpetuate disproportionate health and environmental burdens on disadvantaged communities, an outcome in fundamental tension with the CLCPA's equity requirements.

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[32] NYSPSC, *Exh. 9-5: Location of Peaker Plants and Environmental Justice Areas in the Greater New York City Area*, Case No. 18-E-0130, In the Matter of Energy Storage Deployment Program, at 9–12 (June 25, 2018).
[33] The New York State Energy Storage Roadmap and Department of Public Service/New York State Energy Research and Development Authority Staff Recommendations ("Storage Roadmap"), at 64 (June 21, 2018), https://www.ethree.com/wp-content/uploads/2018/06/NYS-Energy-Storage-Roadmap-6.21.2018.pdf.
[34] "Air Pollution and the Health of New Yorkers: The Impact of Fine Particles and Ozone," New York City Department of Health and Mental Hygiene, *available at* https://www1.nyc.gov/assets/doh/downloads/pdf/eode/eode-air-quality-impact.pdf, p. 4.
[35] Dirty Energy, Big Money at 5, 9; *see also* Eric Brandt, et al. "Air pollution, racial disparities, and COVID-19 mortality," 146 J. Allergy Clin. Immunol. 1, *available at* https://www.jacionline.org/article/S0091-6749(20)30632-1/pdf.

II. Structural Problems Inherent in the Current Resource Adequacy Construct Require a More Active State Role

While BSM is an immediate and significant threat to New York's clean energy transition, problems inherent in the current resource adequacy construct are broader than BSM. As Clean Energy Supporters have stated in our previous comments, the current capacity market design is incompatible with New York's future resource adequacy needs.[36] By design, a capacity market focuses solely on meeting the system's peak demand during a specified time period. Although in theory such a market should be resource neutral, it was designed primarily around dispatchable thermal resources capable of meeting a largely predictable peak demand. In a system focused on reducing carbon emissions primarily through renewable energy (including distributed energy resources), the focus shifts from meeting peak demand to meeting total demand on any given operating day (including but not limited to peak demand) or net load (total demand less renewable generation) using the most efficient combination of resources available. Considering both the economic and operating characteristics of most new renewable energy, a capacity market designed to meet peak system needs is ill-suited to help meet the broader spectrum of resource adequacy.[37] Meeting the goals of the CLCPA, and taking full advantage of the low operating costs of renewable energy, will require the development of new products to fully integrate renewable energy, including, for example, reserves that can respond to the inherent variability of most zero-carbon resources, together with flexibility such as energy storage.[38]

[36] Clean Energy Supporters Reply Comments at 2, http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={D851380C-ED21-463D-945F-273BABB2BB02}.
[37] Mays, Jacob and Morton, David and O'Neill, Richard P., Asymmetric Risk and Fuel Neutrality in Capacity Markets (February 8, 2019). USAEE Working Paper No. 19-385, *available at* SSRN: https://ssrn.com/abstract=3330932 or http://dx.doi.org/10.2139/ssrn.3330932.
[38] *Id*.

Capacity markets beget excess capacity,[39] and because of those markets' sole focus on resources that can meet rare peak demands, many of the resources procured lack the flexibility characteristics needed to maintain reliability in a world with high levels of renewables and engaged demand. That excess capacity can also reduce revenues that supply- and demand-side resources can earn for providing energy, operating reserves, and other ancillary services, thus dampening the price signals that would actually incent the types of resource performance needed day-to-day to balance the system. Excess capacity procurement can often mean consumers bear the brunt of paying for ever smaller marginal increments of reliability benefit, which is a poor use of consumer funding. Recent analysis has shown that the vast majority of lost load hours relate to weather-related problems on the distribution system, rather than shortfalls in generating capacity,[40] and recent multi-day power outages affecting millions of customers as a result of Tropical Storm Isaias have shown this to be true as did Hurricane Sandy less than a decade ago.

Increased state involvement in resource adequacy would enable New York to better meet its responsibility to ensure the reliable delivery of retail electric service. Given that resource adequacy is only one among several factors affecting retail reliability, the State should play an active role in more comprehensively balancing investments in resource adequacy with investments in distribution system measures critical to overall reliability. To improve reliability at least cost, it is critical for states to "manag[e] risk by taking measures that mitigate against as many threats as possible."[41] By playing a larger role in overseeing resource adequacy, New York

[39] *Too Much of the Wrong Thing: The Need for Capacity Market Replacement or Reform*, Grid Strategies LLC (Nov. 2019), https://gridprogress.files.wordpress.com/2019/11/too-much-of-the-wrong-thing-the-need-for-capacity-market-replacement-or-reform.pdf, at 6-7.
[40] *A Customer-Focused Framework for Electric System Resilience*, Grid Strategies LLC (May 2018), https://gridprogress.files.wordpress.com/2018/05/customer-focused-resilience-final-050118.pdf at 3-4 (noting that "Department of Energy reported that 90% of electric power interruptions arise on the distribution system, mostly weather-related.").
[41] *A Customer-Focused Framework for Electric System Resilience*, Grid Strategies LLC (May 2018), https://gridprogress.files.wordpress.com/2018/05/customer-focused-resilience-final-050118.pdf at 4.

can not only ensure that capacity procurement is consistent with the mandates of the CLCPA, but also aim to rationalize consumer spending across resource adequacy and transmission and distribution systems to focus spending where it will provide the most reliability gains.

Section 215 of the Federal Power Act provides that "the State of New York may establish rules that result in greater reliability within that State, as long as such action does not result in lesser reliability outside the State than that provided by the reliability standards."[42] New York can exercise this authority in conjunction with its authority under the Public Service Law to broaden how resource adequacy is understood, integrate reliability measures across generation, transmission, and distribution, and ultimately enhance holistic reliability within the State.

III. Implications of Different Resource Adequacy Structures Set Forth in Brattle Analysis

Brattle's evaluation of five potential resource adequacy structures further demonstrates that the status quo is neither tenable nor justifiable, given the availability of several alternatives that would better serve the public interest.

A. Status Quo and Expanded BSM

Structure 1 would be a continuation of the current NYISO Installed Capacity (ICAP) market, imposing "status quo" BSM rules on state-supported resources in Zones G-J.[43] Structure 2 would similarly retain the ICAP market, but impose "expanded" BSM rules that apply statewide and "could eventually cover essentially all clean resources in the New York system" with limited exceptions.[44] As discussed above, Structures 1 and 2 would lead to prolonged operation of fossil fuel plants leading to billions of dollars in economic waste and substantial

[42] 16 U.S.C.A. § 824o(i)(3).
[43] Qualitative Analysis at 7-8.
[44] *Id.* at 10.

health impacts from peaking plants as BSM rules force customers to "pay twice for the capacity of mitigated resources."[45]

The State cannot avoid these negative BSM impacts within the current ICAP market design. Currently, NYISO determines the eligibility of resources to sell capacity and conducts a series of capacity auctions, including a mandatory monthly spot auction requiring participation by all resources and LSEs (to the extent they have not met their resource adequacy obligations through self-supply, forward bilateral contracting, or the voluntary auctions, all of which are still subject to BSM rules).[46] As noted by Brattle, the State's only avenue to "reduce[] the applicability and impact of BSM" within that structure would be to expend "significant effort to influence NYISO proposals, FERC decisions, and appeals processes . . . without any guarantee of success."[47] The urgency of the climate crisis and the CLCPA's electric sector mandates do not permit the luxury of simply hoping for success at NYISO and FERC.

As Clean Energy Supporters have previously noted, introducing a carbon price in NYISO's energy market could provide short-term relief from the full impacts of BSM, but is not a panacea for resolving the tensions between the current capacity construct and State clean energy policies.[48] Brattle similarly concludes that "carbon pricing . . . would allow for lower mitigated capacity offers," but "alone would not solve the problems that BSM poses."[49] Any "carbon prices alone may not be high enough" or perceived as "stable enough" to "support sufficient merchant investment to meet state policy targets," particularly the 2040 zero-emissions

[45] *Id.* at 9.
[46] *Id.* at 7.
[47] *Id.* at 9.
[48] Comments of Clean Energy Supporters at 9, http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={DF5785BF-00B2-4CAD-90D2-F5D5484E34A4}.
[49] Qualitative Analysis at 12.

electricity target.[50] Likewise, the City of New York has noted that NYISO's carbon pricing proposal could "significantly raise energy costs downstate without causing a material change to the supply portfolio," given that the ICAP market would still suffer from non-BSM shortfalls.[51] These shortfalls include an overemphasis on "always available" generation; unit-by-unit measures of reliability value, which ignore the synergistic effects from combining wind, solar, and storage systems; and neglecting the flexibility needed to support a high-renewables grid.[52] Finally, we note that carbon pricing would not help to advance the equity objectives of the CLCPA unless some portion of the revenues collected through this mechanism are directed towards investment and emission abatement in disadvantaged communities.

B. Centralized Market for Resource Adequacy Credits Run by the State

Under Structure 3, the State would set rules for a centralized Resource Adequacy Credit (RAC) market to satisfy LSE reliability obligations, functionally similar to the market design of Structures 1 and 2—but without the harmful and costly impacts of BSM rules.[53] While the State would have primary authority over resource adequacy to ensure enhanced reliability at a cost that reflects the actual quantity of resource adequacy supplied, the Brattle analysis anticipates "a range of options" for RAC market administration, including a continued role for NYISO implementation: for example, "establishing quantity requirements needed to meet reliability standards, resource ratings, resource qualification, tracking and accounting for RAC positions and bilateral transactions, monitoring performance, implementing penalties, and settlements,"

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[50] *Id.* at 5.
[51] Reply Comments of the City of New York at 4, http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={C4749151-8E0E-4EAA-B548-46574CB71CD8}
[52] Comments of Clean Energy Supporters at 6, http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={DF5785BF-00B2-4CAD-90D2-F5D5484E34A4}.
[53] *Id.* at 13.

and potentially even continued auction administration.[54] Ideally, NYISO and its market participants would work with the State, rather than against it, to enable NYISO to remain the market administrator based on state-approved rules and guidance, which would minimize implementation costs and organizational changes at NYISO while enhancing stability for market participants.

Shifting resource adequacy responsibilities back to the State under Structure 3 offers several significant advantages. As Brattle acknowledges, eliminating application of BSM rules to public policy resources "would improve economic efficiency, eliminate the excess supply problem, and reduce customer costs to the level needed to maintain resource adequacy through competitive price signals."[55] In addition, by retaining a familiar centralized market construct, market participants will face less disruption than with alternative options while having confidence that reliability needs can continue to be met at completive prices under a wide range of market conditions.[56]

Structure 3 also offers the opportunity to effectively integrate opportunities for bilateral contracting with the centralized market. Under NYISO's current capacity market, each load serving entity (LSE) can determine how to meet its resource adequacy obligation through some combination of self-supply, forward bilateral contracting, voluntary participation in NYISO auctions, or reliance on the final mandatory spot auction. However, BSM rules discourage LSEs from using self-supply or bilaterally-contracted new resources by subjecting them to mitigation and imposing a prohibitive risk that they will not clear.[57] Removing burdensome BSM rules would enable a hybrid/residual market that could help provide revenue certainty to finance new

[54] *Id.* at 14.
[55] Brattle Qualitative Analysis at 13.
[56] *Id.* at 14.
[57] *Id.* at 7.

clean resources by allowing developers to sign contracts with either LSEs or large electricity users. Contracts, especially long-term contracts, are particularly important for renewable resource development for three reasons: (1) renewable resources are very capital-intensive, but have minimal and highly predictable operating costs, so contracts provide the certainty necessary to finance at lower interest rates than if all revenue is coming from the market; (2) increased renewable penetration, as the CLCPA requires, can depress spot energy prices and erode market revenue streams,[58] whereas contracts provide-up front revenue certainty for lenders prior to committing capital; and (3) tax equity investors, who have provided much of the investment for domestic renewable projects, disfavor risk.[59] Accordingly, incorporating longer-term contracting into the centralized market through self-supply mechanisms could facilitate renewable development, while providing LSEs and self-suppliers with opportunities to hedge against market price risk. Bilateral contracting can also play an important role in meeting other CLCPA objectives, because it accommodates the consideration of factors such as avoided emissions associated with project locations, project labor agreements, or other elements that cannot readily be considered in a centralized market, but may be critical to the project's overall viability.

Structure 3 further offers opportunities to enhance reliability and reduce costs by broadly integrating reliability measures across generation, transmission, and distribution. For example, the State could evolve metrics for reliability beyond simple megawatts of capacity, which is a reductive metric that does not account for availability, seasonality, or flexibility and fails to

[58] While energy prices may drop initially due to increasing penetration of low marginal-cost resources, properly designed ancillary service markets that efficiency procure reliability services needed to integrate high levels of renewables and serve flexible demand, when co-optimized with energy markets, will eventually counter this decline to some extent.

[59] Rob Gramlich and Frank Lacey, *Who's The Buyer? Retail Electric Market Structure Reforms In Support Of Resource Adequacy And Clean Energy Deployment*, Grid Strategies at 6-7 (March 2020), https://windsolaralliance.org/wp-content/uploads/2020/03/WSA_Retail-structure-and-contracting-paper.pdf.

capture how distribution measures such as tree-trimming, undergrounding cables, and networking circuits can improve reliability.

Overall, a key strength of Option 3 is that it would provide for a relatively uncomplicated transition from NYISO control to State control, especially if this transition is cooperatively facilitated by NYISO and its market participants. To realize the full benefits of a reformed resource adequacy structure, however, the Commission will eventually need to make deeper changes to the ICAP structure to reduce over-procurement, avoid overpaying for capacity resources, and ensure that the capacity valuations of renewables, storage, and demand-side resources accurately reflect their contributions to a more dynamic view of resource adequacy that centers reliability on end-use customers.

C. Fully Bi-Lateral System with No Centralized Market

Structure 4 would eliminate centralized capacity auctions and instead require LSEs to contract for RACs to meet their resource adequacy obligations. The process for determining these obligations would remain similar: the New York State Reliability Council would establish the capacity supply needed on a system-wide and locational basis to meet the 1-in-10 reliability requirement, then translate this need into RAC quantities, which would be allocated to LSEs in proportion to their customers' locational peak loads.[60] Supply resources would create RACs tied to one of four market localities (based on NYISO's current congestion boundaries), and LSEs would have to surrender a certain MW level of RACs with minimum shares to be met by RACs from the relevant zone(s). LSEs would first use any RACs allocated to them by NYSERDA clean energy procurements, then satisfy the rest of their obligation through bilateral contracts, bilateral trades, and/or self-supply. The State "would need to determine the forward timeframe at

[60] Qualitative Analysis at 15.

which LSEs must demonstrate compliance, the mechanics of submitting and surrendering RACs, and the applicable penalty rate for non-compliance."[61]

Many of the practical implications of the "bilateral-only" RAC market are noted in the Brattle Report, which discusses several disadvantages of non-forward bilateral markets, but also some ways to improve price discovery, liquidity, and to address market power. For example, Brattle notes that a uniform product definition, combined with trading mechanisms, especially those facilitated by brokers or third-party exchange trade platforms, can improve both liquidity and transparency.[62] Brattle notes that some of these problems are prominent in bilateral markets that "rely entirely on bilateral contracting,"[63] which suggests that a hybrid market design (discussed above) where LSEs have the ability to enter into prudent bilateral contracts, but also have the option to procure from a centralized market, is worth further discussion.

Creating a hybrid/residual market design also has several advantages over a purely bilateral market. For example, the centralized market can create a reference price for the cost of capacity to benchmark prices negotiated in bilateral sales for the same or similar period, thus helping to address transparency issues. The centralized market also provides an alternative for buyers, which helps limit the exercise of seller market power in the bilateral market. In Order No. 861, FERC recently concluded that centralized markets (in that case, operated by RTOs) provide a "benchmark against which to compare prices offered in the market for long-term bilateral contracts."[64] Furthermore, because the centralized market would likely continue to employ a sloping demand curve and the quantity of bilateral sales would vary based on

[61] *Id.* at 17.
[62] *Id*. at 15-16.
[63] *Id*. at 16.
[64] Order 861, Refinements to Horizontal Market Power Analysis for Sellers in Certain Regional Transmission Organization and Independent System Operator Markets, at P 60 (July 18, 2019).

purchases in the centralized auction, the hybrid/residual model could help to address the volatility and end-price effects identified by Brattle as concerns with a bilateral-only market.

Brattle also notes several key advantages to the bilateral-only market which are especially significant for New York's ability to achieve the CLCPA goals at least cost. A bilateral market could include multi-year forward contracts for RACs, which would provide more price certainty for new clean energy resources than is offered by short-term resource adequacy mechanisms like ICAP or a state-run version of ICAP.[65] The ability to secure long-term contracts is critical for low-cost financing of the wide range of carbon-free resources needed to achieve CLCPA goals.[66] This benefit is closely tied to another touted by Brattle, which is how the bilateral construct allows for "any synergies or multi-product efficiencies that individually-crafted long term contracts may allow."[67] Such bilateral contracts may integrate more easily with New York's existing long-term clean energy procurement structures than would a centralized model. Individually crafted long-term contracts would also allow LSEs to consider qualitative factors relevant to CLCPA goals and the public interest, such as a particular project's impacts on, or opportunities created for, overburdened communities. Most of these benefits also would accrue to a hybrid/residual model and a centralized model that allows for unconstrained self-supply

One important topic not discussed by Brattle's Qualitative Analysis are possible variations on how a bilateral-only resource adequacy construct could interact with New York retail competition policy. Brattle's description would assign contracting responsibility to all LSEs, which has the benefit of allowing ESCOs and CCAs to procure their own capacity and

[65] Qualitative Analysis at 18.
[66] Jurgen Weiss and Mark Sarro, *The Importance of Long-term Contracting for Facilitating Renewable Energy Project Development* at 7 (2013), The Brattle Group, http://www.brattle.com/system/publications/pdfs/000/004/927/original/The_Importance_of_Long-Term_Contracting_for_Facilitating_Renewable_Energy_Project_Development_Weiss_Sarro_May_7_2013.pdf?1380317003.
[67] *Id.*

thereby could enable such providers to differentiate themselves from the default service provider on price and environmental considerations. However, the increased financial responsibility associated with such contracts, especially if they are multi-year, would enhance the need for more rigorous creditworthiness requirements.[68] We also note that the California Public Utility Commission recently completed a rulemaking process on this topic, and ultimately concluded that for two of its three investor-owned utilities, having the utility serve as the centralized procurement entity would yield more efficiency results, while in the territory of a third, LSEs would have more autonomy with respect to procurement.[69] Different models for how to allocate contracting responsibility would likely need to be explored should the Commission elect to rely upon a bilateral-only construct.

Another advantage of the bilateral-only market design is that it most closely follows the main precedent for a restructured state—California—with LSEs that are members of an ISO asserting a primary role in resource adequacy. In California, state regulators supervise bilateral contracts for resources that seek to achieve the resource mix set out in state-driven resource planning, while CAISO retains backstop procurement authority to ensure resource adequacy. Although FERC's precedent with respect to California's resource adequacy structure is far from conclusive as to the extent of state authority over resource adequacy, the existing authority for a state-driven bilateral process may provide for a smoother transition.

[68] Rob Gramlich and Frank Lacey, *Who's The Buyer? Retail Electric Market Structure Reforms In Support Of Resource Adequacy And Clean Energy Deployment*, Grid Strategies at 14 (March 2020), https://windsolaralliance.org/wp-content/uploads/2020/03/WSA_Retail-structure-and-contracting-paper.pdf.
[69] Order Instituting Rulemaking to Oversee the Resource Adequacy Program, Consider Program Refinements, and Establish Annual Local and Flexible Procurement Obligations for the 2019 and 2020 Compliance Years., Rulemaking 17-09-020, D.20-06-002, at 29-32 (June 17, 2020).

D. Co-optimized Capacity and Clean Energy Procurement

Structure 5 would incorporate the centralized RAC market of Structure 3 and expand upon it to include REC procurement, thus seeking to co-optimize the achievement of resource adequacy and clean energy needs.[70] LSEs would have a RAC compliance obligation as well as a 70 by 30 obligation met by RECs, with specific minimums for distributed solar and offshore wind; a zero-emissions by 2040 obligation met by RECs and ZECs; and a storage obligation met by storage credits.[71] The State would administer this co-optimized auction to procure the least-cost combination of these products, with corresponding downward-sloping demand curves for each LSE obligation: RACs (and the locational sub-requirement), RECs (and the offshore wind and distributed solar sub-requirements), storage credits, and potentially the 2040 clean energy resource requirement met through RECs or ZECs.[72] This multi-product optimization would reward resources that advance multiple requirements and significantly reduce the role of NYSERDA solicitations to meet procurement targets.[73] For any resources that would still be State-contracted, suppliers would earn RAC and REC values through the co-optimized market and have those values subtracted from the awarded contract price.[74] Given that the role for NYSERDA's long-term contracts would decline, the Qualitative Analysis suggests that the co-optimized auction could maintain financing certainty by offering a REC price lock-in for new renewable resources, perhaps starting at 20 years and reducing in each successive auction down to 7 years.[75]

[70] Qualitative Analysis at 18.
[71] *Id.* at 19.
[72] *Id.* at 20.
[73] *Id.* at 19, 21.
[74] *Id.* at 19.
[75] *Id.* at 22.

While this structure would have several advantages if implemented as planned, including the efficiencies of co-optimizing resource clearing to meet the state's RAC, clean energy, and other policy requirements, it would require extensive changes to existing mechanisms for clean energy procurement. These existing procurement mechanisms allow equity, labor and siting issues to be evaluated upfront, which ultimately leads to fewer obstacles to project development and more coherent implementation of the CLCPA. As Brattle acknowledges, a co-optimized capacity and clean energy procurement process would be a "new design concept that is untested and complicated to implement."[76] Structure 5, therefore, could "naturally extend or evolve from Structure 3: Centralized RAC Market without BSM, but could be more complex and time-consuming to implement on a near term time horizon."[77] Ultimately, Structure 5 is an intriguing option, but one that only makes sense to explore after a successful transition to Structure 3 given the complications associated with implementing such a novel market construct, and need to retain certain benefits of the existing procurement structures. A hastier transition could fundamentally disrupt the tremendous process already being made under the current Clean Energy Standard and jeopardize achievement of the State's CLCPA electric sector mandates.

IV. New York Should Reclaim Greater Authority Over Resource Adequacy to Ensure Enhanced Reliability that is Compatible with a Clean and Equitable Energy Transition

As the Commission established in its order instituting this proceed,[78] the Commission is statutorily obligated to address resource adequacy matters that fall within its statutory authority under the Public Service Law, including its duty to ensure that electric service is provided in a

[76] *Id*. at 26.
[77] *Id*. at 21.
[78] Proceeding on Motion of the Commission to Consider Resource Adequacy Matters., *Order Instituting Proceeding and Soliciting Comments*, Case 19-E-0530 at 4-6 (Aug. 8, 2019).

manner that is "safe and adequate and in all respects just and reasonable."[79] To carry out its obligations, the Commission has "power to order such reasonable improvements as well as promote the public interest, preserve the public health and protect those using such . . . electricity."[80] And, it has further authority to "encourage [jurisdictional entities] to formulate and carry out long-range programs . . . for the performance of their public service responsibilities with economy, efficiency, and care for . . . preservation of environmental values and the conservation of natural resources."[81]

Brattle's Analyses demonstrate that continued participation by LSEs in NYISO's ICAP market, as currently designed, is not in the public interest. As described in Section I above, New Yorkers will incur hundreds of millions of dollars each year in unnecessary costs associated with BSM. BSM undermines the state's ability to achieve its climate and clean energy goals under the CLCPA, results in duplicative capacity, and imposes significant health impacts on disadvantaged communities.

As a precursor to further reforms, therefore, Clean Energy Supporters strongly urge the Commission to issue a finding that continued participation in ICAP is not in the public interest. Such a finding will both demonstrate the seriousness of the situation from New York's perspective and send an unambiguous signal that utilities should actively pursue alternative options for ensuring reliable electric service.

[79] PSL §65(1).
[80] PSL §66(2) (The Commission also has authority under this section to "order reasonable improvements and extensions of the works, wires, poles, lines, conduits, ducts and other reasonable devices, apparatus and property of…electric corporations and municipalities.").
[81] PSL §5(2). *See Consolidated Edison Co. v Public Service Commission*, 47 NY2d 94 (1979) *overturned on other grounds* (describing the broad delegation of authority to the Commission and the Legislature's unqualified recognition of the importance of environmental stewardship and resource conservation in amending the PSL to include §5).

Transitioning to either Structures 3, 4, or 5 will require significant changes in the NYISO tariffs and possibly the Operating Agreement. While the Commission cannot achieve such changes unilaterally, it could create incentives for transmission owners to seek fundamental changes to the NYISO Operating Agreement in order to realize a resource adequacy construct that avoids incurring unnecessary costs to serve customers reliably. Alternatively, the State could file a Section 206 complaint at FERC regarding the ICAP rules, which may be a viable strategy should the makeup of FERC shift in the coming year, or if litigation regarding FERC's recent BSM orders is successful.

Although the changes necessary to shift to a state-driven resource adequacy framework are significant, they are not unprecedented. Historically, states have had authority over both generation and the reliability and cost of retail electric service implicated in resource adequacy, and the Federal Power Act expressly provides that "New York may establish rules that result in greater reliability within that State."[82] Thus, New York has a natural and legally defensible role in ensuring that an affordable and effective resource adequacy framework is in place.

Variation in state involvement across regions demonstrates that there are no insurmountable barriers to New York reclaiming greater authority over resource adequacy. California provides a prime example. In approving the California resource adequacy model for a single-state ISO in which the state has a primary role, FERC explained:

> The fact that we must, to fulfill our statutory responsibilities, be assured of a workable approach to resource adequacy does not mean that we should ignore the states' traditional role in this area. . . . Rather, we can, in appropriate circumstances, defer to state and Local Regulatory Authorities to set those requirements. Our primary responsibility is to ensure that a workable program exists and is adhered to by all LSEs.[83]

[82] 16 USCA § 824o(i)(3).
[83] *California Independent System Operator*, 116 FERC ¶ 61,274 at P 1117 (2006).

In that order, FERC accepted CAISO tariff revisions to establish "a process that respects the resource adequacy requirements established by the states or Local Regulatory Authorities, with provisions to allow the CAISO to procure additional capacity to meet forecasted needs."[84] While the California PUC's structure for resource procurement is complex, it generally involves bilateral procurement of resources in a manner consistent with approved resource plans and state policy objectives. CAISO retains "backstop" procurement authority to require utilities to contract for additional resources where the state procurement process has not resulted in sufficient contracts to ensure resource adequacy. While not all of the particulars of the resource procurement process in California may be appropriate for New York, the important point is that FERC has endorsed and permitted a model in which the state asserts primary authority of resource adequacy, including determining the means of resource procurement to meet RA requirements, while the ISO steps in only as needed to ensure bulk power system reliability.[85]

The Southwest Power Pool (SPP) provides another example of enhanced state authority. The decision-making framework in SPP has preserved the most authority for states over resource adequacy in multistate RTOs.[86] Specifically, SPP's Regional State Committee – comprised of state public utility commissioners – is empowered to determine the region's approach to ensuring its resources support reliability.[87] The FERC-approved SPP Bylaws also acknowledge that "nothing in the formation or operation of SPP as a [FERC] recognized regional transmission organization is in any way intended to diminish existing state regulatory jurisdiction and

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[84] *Id*.
[85] *See CXA La Paloma, LLC v. California Independent System Operator*, 165 FERC ¶ 61,148 (2018).
[86] Jennifer Chen and Gabrielle Murnan, *State Participation in Resource Adequacy Decisions in Multistate Regional Transmission Organizations*, Duke Nicholas Institute for Environmental Policy Solutions, at 2 (March 2019), *available at* https://nicholasinstitute.duke.edu/sites/default/files/publications/state_participation_in_resource_adequacy_decisions_web.pdf.
[87] *Id*. at 1.

authority."[88] New York's transmission owners, together with other market participants, could work to harmonize NYISO's tariff and operating agreement with Structures 3, 4, or 5 in a manner that enables the State to determine the approach for resource adequacy. This could include providing New York with filing rights under Section 205 of the Federal Power Act to submit its own resource adequacy proposals to FERC.

The Midcontinent Independent System Operator (MISO) provides yet another example of enhanced state authority. In MISO, resource adequacy requirements are based on initial input from the states, and each utility can meet the requirement through owned resources, contracted resources, or participation in MISO's voluntary capacity Planning Resource Auction.[89] In addition, individual states maintain the ability to override the regional target for resource procurement in their jurisdictions, and states wanting to mitigate regional over-procurement can set lower targets for themselves.[90]

This precedent indicates that many of the options for alternative resource adequacy structures described by Brattle could be workable from a legal standpoint. In each of them, the State would require LSEs to procure RACs in order to ensure reliability of retail electric service and pursuant to the state's authority over generation. That procurement could be either through an auction, through bilateral procurements, or via a hybrid approach. It is worth noting that the bilateral procurements need not be driven by LSEs, but could be procurements by a state authority like NYSERDA, where RAC credit (and financial responsibility) is assigned to utilities and retail suppliers.

[88] *Id*. at 8 (*citing* "SPP Governing Documents Tariff, Bylaws" at 65).
[89] *Id*. at 8 (*citing* MISO, Business Practices Manual on Resource Adequacy, Manual No. 11 (2018), at 12; MISO, *Resource Availability and Need Issues Statement Whitepaper* (2018) at 25–26, misoenergy.org.).
[90] *Id*. at 1; *see also* at 9, fn 37.

NYISO would then confirm that the state-driven procurement is sufficient to meet its resource adequacy requirements, both as a matter of its structure and for each specific delivery period. NYISO could decide to develop a mechanism similar to CAISO's backstop procurement authority, which could be employed should the state mechanism fall short for any reason (including load increases that exceed forecasts). None of the options Brattle sets out would necessarily or systematically yield shortfalls, but refinements of these proposals could introduce such factors. For example, in California, the utilities' obligations to procure under the state mechanism are limited by a "soft cap" that restricts the exercise of market power. If the cost of a bilateral procurement would exceed that cap, then the utility need not contract for that capacity and can instead rely on the CAISO backstop procurement authority.[91]

V. Conclusion

Continued participation by LSEs in NYISO's ICAP market, as currently designed, is not in the public interest. The Brattle analyses confirm that buyer-side mitigation imposes significant consumer costs and health impacts and jeopardizes the State's ambitious climate and clean energy goals. New York must therefore act now to avoid billions of dollars in additional costs to consumers and to achieve the CLCPA's mandate to reduce disproportionate energy burdens on disadvantaged communities. Moreover, structural problems inherent in the current resource adequacy construct require a more active state role that takes a broader view of reliability metrics and more comprehensively balances investments in resource adequacy with investments in distribution system measures critical to overall reliability. Brattle presented several approaches through which the State could accomplish these critical goals, and variation in state involvement across regions demonstrates that there are no insurmountable barriers to New York reclaiming

[91] *See* http://www.caiso.com/Documents/Presentation-CapacityProcurementMechanismSoftOfferCap-Aug6-2019.pdf.

greater authority over resource adequacy. Accordingly, Clean Energy Supporters strongly urge the State to reclaim greater authority over resource adequacy to ensure enhanced reliability that is compatible with a clean and equitable energy transition.

Respectfully submitted on the 21st day of August 2020.

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