UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

New York Independent System Operator, Inc.) Docket No. ER19-2276-000

MOTION TO INTERVENE OUT OF TIME AND LEAVE TO ANSWER AND ANSWER OF INDEPENDENT POWER PRODUCERS OF NEW YORK, INC.

Pursuant to Rules 212, 213 and 214 of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission (the "Commission"),[1] Independent Power Producers of New York, Inc. ("IPPNY") respectfully moves to intervene out of time and to answer[2] and submit this answer to the joint protest of the New York State Public Service Commission and New York State Energy Research and Development Authority (collectively, the "State Entities"),[3] and the joint comments of the Joint Parties,[4] filed in response to proposed amendments made by the New York Independent System Operator, Inc. ("NYISO") under Section 205 of the Federal Power Act in the above referenced docket to its Market Administration and Control Area Services Tariff ("Services Tariff") and Open Access Transmission Tariff to allow Distributed Energy Resources ("DER") and DER aggregations located on the transmission

[1] 18 C.F.R. §§ 385.212, 385.213, 385.214 (2018).

[2] Although the Commission's procedural rules do not allow for answers to protests and answers as a matter of right, the Commission regularly accepts otherwise impermissible answers where, as here, such answers will assist the Commission's understanding of the record and its decisionmaking. *See, e.g., Southwest Power Pool, Inc*., 154 FERC ¶ 61,279 at P 13 (2016); *Midcontinent Indep. Sys. Operator, Inc*., 154 FERC ¶ 61,278 at P 6 (2016); *New York Indep. Sys. Operator, Inc.*, 154 FERC ¶ 61,268 at P 17 (2016).

[3] Docket No. ER19-2276-000, Protest and Interventions of the New York State Public Service Commission and New York State Energy Research and Development Authority (July 18, 2019) ("State Entities Protest").

[4] Docket No. ER19-2276-000, Comments of Advanced Energy Management Alliance, Advanced Energy Economy, Consumer Power Advocates, Energy Spectrum, Inc., Natural Resources Defense Council, Sustainable FERC Project, and the New York Battery & Energy Storage Technology Consortium (the "Joint Parties") (July 18, 2019) ("Joint Parties Comments").

and/or distribution systems to participate in the NYISO-administered Energy, Ancillary Services, and Installed Capacity ("ICAP") markets.[5]

A "foundational component" of the NYISO's market design for participation of DER in the ICAP market is a proposal that is structured to distinguish between the reliability benefits provided by ICAP suppliers that have different energy duration limitations.[6] Up to this point, the NYISO market has almost entirely been composed of generation resources without any energy duration limitations. However, in light of the unprecedented efforts to support certain State public policy initiatives, the composition of the system is expected to evolve significantly. In recognition that certain DER, such as energy storage resources ("ESRs"), will have energy duration limitations which have been determined to provide lower levels of reliability value to the system as compared to conventional resources without duration limitations, the NYISO's Tariff Filing includes a proposal to "better align the contribution to reliability of the [MWs] of [ICAP] provided by an [ICAP] Supplier with the payments made for those same [MWs] through the [ICAP] market."[7] In light of the rapidly evolving system in New York, the NYISO contracted with General Electric Energy Consulting ("GE Energy Consulting"), the entity that assists the NYISO in performing its annual installed reserve analyses, to conduct a study comparing and evaluating the reliability value of energy duration limited resources with resources on the system today that have no duration limitations (the "GE Study"). The GE Study concluded that as the penetration of energy duration limited resources on the system increases, the reliability value of such resources, from a resource adequacy perspective, will decrease.[8] This finding was the basis for the NYISO's proposed multi-tiered

[5] Docket No. ER19-2276-000, N.Y. Indep. Sys. Operator, Inc., Proposed Tariff Revisions Regarding Establishment of Participation Model for Aggregations of Resources, Including Distributed Energy Resources, and Proposed Effective Dates. (June 27, 2019) (the "Tariff Filing").

[6] *See* Tariff Filing at 63.

[7] *Id.* at 65-66.

[8] *Id.* at 67.

approach to compensating ICAP suppliers based upon the resource adequacy and operational needs of the system and their relative contributions thereto.[9]

In their comments, the Joint Parties primarily challenged one value, the NYISO's proposal for 4-hour resources after the 1,000 MW penetration level is reached, claiming it will "…understate the value of Energy Limited Duration resources, force ratepayers to unnecessarily pay for additional capacity and limit competition by undercompensating resource owners."[10] Characterizing the NYISO's proposal as "forward-looking and contingent" and asserting it is "not well-supported by evidence and reasonable analysis," the Joint Parties claim the Commission can "…reject NYISO's proposed step-down in capacity value for duration-limited resources now without disturbing the core structure of the NYISO's proposal for DER aggregation…"[11]

In an attempt to support their position, the Joint Parties contested the validity of the GE Study and argued that an alternative study conducted by Astrapé Consulting (the "Astrapé Study") should be the basis for the multi-tiered capacity value approach proposed in the Tariff Filing. Specifically, the Joint Parties requested that the Commission direct the NYISO to modify the Tariff Filing to eliminate the "step-down" (multi-tiered) capacity value proposal. As is demonstrated in the affidavit of Mark D. Younger, President of Hudson Energy Economics, LLC, attached hereto, unlike the GE Study, the Astrapé Study was conducted utilizing a modeling methodology that is inconsistent with the methodology that has been used in New York by the NYISO and New York State Reliability Council ("NYSRC") for setting reliability criteria since the creation of the wholesale markets and, therefore, should be afforded no weight by the Commission.[12] In addition, as further demonstrated by Mr. Younger, the two other concerns regarding the NYISO's proposal highlighted by Astrapé are based on premises that

[9] *Id.* at 77.

[10] *See* Joint Parties Filing at 6.

[11] *Id*. at 12.

[12] This pleading represents the position of IPPNY as an organization but not necessarily the views of any particular member with respect to any issue.

fundamentally misconstrue the structure and characteristics of the NYISO's system, and thus, also lack merit. Nor have the Joint Parties addressed – much less rebutted – the significant real-world considerations presented by NYISO Operations. Thus, contrary to the Joint Parties' claims that their approach will "further strengthen competition and reliability in the NYISO market" and the NYISO's capacity eligibility structure for 4-hour energy duration limited resources can be rejected now, their proposal would threaten the reliability of the system as these resources enter the NYISO system in larger amounts.

The NYISO's Tariff Filing also included a proposal to apply the NYISO's buyer-side market power mitigation measures ("BSM Rules") to DER consistent with the application of such rules to comparable ICAP suppliers, and a proposal, originally made in its tariff amendments to comply with Commission Order No. 841 (the "ESR Filing"),[13] to reinstate a specific provision of its BSM Rules that would apply certain aspects of such rules to the entry in Mitigated Capacity Zones of new ESRs and other Generators that are 2 MW or less.[14] IPPNY filed comments in support of the NYISO's proposal in its ESR Filing to reinstate the 2 MW provision,[15] and, subsequently, an answer to the comments of the State Entities and protest of the City of New York in that docket.[16]

In their Protest, the State Entities argued that application of the NYISO's BSM Rules to all DER, DER aggregations, and resources less than 2 MW in size is unjust and unreasonable. The Joint Parties made similar arguments with respect to the application of the BSM Rules to DER and DER aggregations. The arguments made by the State Entities and the Joint Parties with respect to the NYISO's BSM Rules are substantially the same as those made by the State Entities opposing the NYISO's proposed application of the BSM Rules to ESRs in response to the NYISO's ESR Filing. Therefore, IPPNY refers the

[13] Docket No. ER19-467-000, N.Y. Indep. Sys. Operator, Inc., Compliance Filing (Dec. 3, 2018) ("ESR Filing").

[14] Tariff Filing at 95.

[15] Docket No. ER19-467-000, *supra*, Comments of Independent Power Producers of New York, Inc. (February 7, 2019) ("IPPNY February Comments").

[16] Docket No. ER19-467-000, *supra*, Motion for Leave to Answer and Answer of Independent Power Producers of New York, Inc. (February 27, 2019) ("IPPNY February Answer").

Commission to the IPPNY February Comments on the NYISO ESR Filing and the IPPNY February Answer to the Joint Entities, attached hereto.

IPPNY is filing these comments to highlight how critical it is for the Commission to approve NYISO capacity market structural reforms that are based on modeling that supports the long-term reliability of the system by sending price signals to both existing and new resources that recognize the energy duration limitations of some resources, accurately reflect the reliability value of each resource and compensate ICAP suppliers based on their relative reliability contribution. To effectively support the long-term reliability of the market, this structure must also include ensuring that uneconomic ICAP supply that enters the market in the Mitigated Capacity Zones does not artificially suppress ICAP prices to the detriment of the competitive markets and the investors that rely on such markets. Therefore, as demonstrated below and in the accompanying attachments, the Commission must reject the arguments made by the State Entities and Joint Parties.

I. THE COMMISSION MUST REJECT THE JOINT PARTIES' ARGUMENT THAT THE COMMISSION ELIMINATE THE MULTI-TIER CAPACITY VALUE PROPOSAL.

The NYISO's Services Tariff currently requires ICAP suppliers to be able to operate without any duration constraint, with two exceptions for Energy Limited Resources ("ELRs") and Special Case Resources ("SCRs"). Both ELRs and SCRs are only eligible to participate in the ICAP market under the current tariff requirements if they can operate for a minimum of four (4) consecutive hours each day. Further, all ICAP suppliers currently receive the same capacity value notwithstanding the 4-hour minimum duration limitation for ELRs and SCRs.[17] To evaluate whether the 4-hour requirement would continue to be sufficient to ensure resource adequacy will be met as a significant amount of incremental duration limited MWs enter the market, and to ensure that the ICAP provided by new DER and DER aggregations would be treated comparably to MWs of ICAP procured today from ICAP suppliers, substantial study work was conducted by GE Energy Consulting. Upon completion of its analysis, GE

[17] Tariff Filing at 63-64.

Energy Consulting found that the overwhelming majority of resource adequacy concerns fall within a daily consecutive 8-hour period,[18] and that as the penetration of resources with energy duration limitations increased, their capacity value decreased. As such, the NYISO is proposing a minimum 8-hour duration requirement for all resources participating in the ICAP market.

As the NYISO explains in its Tariff Filing, the starting point for the GE Study was GE's Multi Area Reliability Simulation ("GE-MARS") database developed for the NYSRC in 2000 to perform resource adequacy modeling and establish the annual Installed Reserve Margin ("IRM").[19] The Joint Parties raise three main criticisms of the GE Study. First, they claim the GE Study has identified too many reliability events that last more than 4 hours and that the load representation for the reliability analysis has too many high load hours. In an attempt to support their position, the Joint Parties present an alternative load methodology by Astrapé.[20] However, as demonstrated by Mr. Younger in his affidavit attached hereto, the Astrapé load methodology not only is completely untested as applied to the specific characteristics of the NYISO system, an initial review reveals it also significantly understates loads that the NYISO is likely to face because it does not take into account, as GE-MARS does, various combinations of load shapes and temperature impacts.

Second, the Joint Parties object to GE Energy Consulting's modeling approach of shifting generators from one zone to another to balance the reliability metric among zones.[21] This characterization appears to be based on a misunderstanding of the actual load and supply characteristics in the three zones used by the NYISO and NYSRC to balance the reliability metric. The three zones chosen by the NYISO and the NYSRC, Zones A, C and D, actually have *excess* capacity that is removed from these zones, therefore, the situation that Astrapé portrays of having too few resources remaining to produce valid results is not accurate for these zones.

[18] Tarif Filing at 64.

[19] *Id.* at 66.

[20] Joint Parties Comments at 10-11.

[21] *Id.* at 11.

Lastly, the Joint Parties, citing to a study by the National Renewable Energy Laboratory ("NREL"), claim that increased renewable generation will increase the reliability value of storage.[22] The renewable penetration levels modeled by NREL are very high. In fact, the initial 5% amount of solar penetration modeled in the NREL study even exceeds the amount of solar penetration mandated by the recently enacted Climate Leadership and Community Protection Act, which requires the installation of 6,000 MW of solar resources by 2025. The potential impact of solar penetration levels equal to 5%, 10% and beyond is so far beyond the levels that are projected to be added to the New York system for many years that it cannot reasonably be a consideration at this time.

Equally important, Astrapé does not address the system operations considerations presented by NYISO operations to Market Participants which also formed the basis for the NYISO's proposal. As a further measure to test the validity of the various study results, the NYISO's operations department identified challenges that will be faced to operate the system as the penetration level of resources that have energy duration limitations increases. While the studies assumed perfect foresight, the NYISO Operations Analysis alone addressed the challenges of responding to both expected and unexpected conditions during real time peak conditions.[23]

The modeling that was done by GE Energy Consulting using the GE-MARS model builds upon the resource adequacy analysis that has been performed by the NYISO and NYSRC for the past two decades and is consistent with how NYISO's operations team expects to deploy DERs.[24] Because it is the basis to set the installed reserve margin each year, the GE-MARS model has long been the subject of extensive and ongoing public review and scrutiny by interested parties from all Market Participant

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[22] *Id.* at 9-10.

[23] *See* Expanding Capacity Eligibility: NYISO Operations' Experience (issued by NYISO and presented at March 18, 2019 ICAP/MIWG meeting) (hereinafter, "NYISO Operations Analysis"), available at https://www.nyiso.com/documents/20142/5517061/DER%20Capacity%20-%20Ops%20Presentation_Final_031819.pdf/e3386107-ae91-ab67-c4d0-2a2d96aba1be.

[24] *See* Expanding Capacity Eligibility: NYISO Operations' Experience (presented at the March 18, 2019 ICAP/MIWG meeting), available at https://www.nyiso.com/documents/20142/5517061/DER%20Capacity%20-%20Ops%20Presentation_Final_031819.pdf/e3386107-ae91-ab67-c4d0-2a2d96aba1be.

sectors. It provides the most thoroughly vetted, accurate and comprehensive representation of resource adequacy risks within the NYISO. On the other hand, the Astrapé Study was performed utilizing assumptions and methodologies that have not been subject to significant review by NYISO stakeholders, NYISO Operations, or the NYSRC. To date, review has been limited to the higher levels discussions that could take place when Astrapé made its two presentations to Market Participants. Therefore, the GE Study assumptions and modeling, not the Astrapé Study, provide a far more valid basis to set the reliability value for resources that have energy duration limitations. Each of the Joint Parties aforementioned criticisms of the GE Study is addressed in detail in the attached affidavit of Mark Younger and those criticisms and the Protest of the State Entities should be dismissed by the Commission in its entirety.

II. MOTION TO INTERVENE OUT OF TIME

IPPNY is a trade association representing companies involved in the development of electric generating facilities, the generation, sale, and marketing of electric power, and the development of natural gas and energy storage facilities in the State of New York. IPPNY member companies produce more than 60% of New York's electricity, utilizing almost every generation technology available today such as wind, solar, natural gas, oil, hydro, biomass, and nuclear. IPPNY has a direct and substantial interest in the outcome of this proceeding because its members include generators that participate in the NYISO's markets and may be subject to the NYISO's proposed tariff amendments permitting DERs to participate in the NYISO's wholesale markets. Good cause exists to grant IPPNY's late motion to intervene. Due to an administrative oversight, IPPNY did not file a motion to intervene within the 21-day time period established in the Commission's June 28, 2019 Notice of Filings. IPPNY is not adequately represented by other parties in the proceeding because only it can provide a New York generator industry-wide perspective on the issues raised in this proceeding. Granting IPPNY's motion to intervene will not prejudice or place any additional burdens on the existing parties and will not delay any procedural schedule. Thus, IPPNY's intervention request is in the public interest and it satisfies the Commission's requirements for late interventions set forth in Rule 214(d).

III. CONCLUSION

For the reasons set forth herein, IPPNY respectfully requests that the Commission: (i) afford the Astrapé Study, which was the basis of the Joint Parties Comments, no weight in its consideration of the NYISO's Tariff Filing; (ii) rely on the results of the GE Study which is based on the thoroughly vetted model used in New York State for nearly two decades to, *inter alia*, set the statewide installed reserve margin each year; (iii) take into account the real world system operations considerations presented by NYISO operations; and (iv) deny the Protest of the State Entities in its entirety.

Dated: August 9, 2019

Respectfully submitted,

Matthew Schwall
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CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated August 9, 2019.

By: *Matthew Schwall*
Matthew Schwall

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

New York Independent System Operator, Inc., Proposed Tariff Revisions Regarding Establishment of Participation Model for Aggregations of Resources, Including Distributed Energy Resources, and Proposed Effective Dates	)	Docket No. ER19-2276-000

AFFIDAVIT OF MARK D. YOUNGER

1. My name is Mark D. Younger. I am employed as President of Hudson Energy Economics, LLC. My business address is 480 Pondview Road, Petersburgh, New York 12138.

2. My entire professional career has been devoted to matters relating to electric generation and the development of competitive electricity markets. Since 1999, I have been an active participant in the working groups refining the New York Independent System Operator, Inc. ("NYISO") market structure and identifying corrections, improvements and enhancements to the market design, including all aspects of its energy, ancillary services, and installed capacity ("ICAP") markets. Pertinent to this case, I have actively participated throughout the working group process to review the models and assumptions that the NYISO used to perform its Resource Adequacy Analysis and, as the system is rapidly evolving in response to the State's extensive public policy initiatives, derive the appropriate valuation for limited duration resources to provide appropriate price signals to all resources and ensure the system continues to be operated reliably. In addition, for the last eleven years, I have been the main generator sector representative for the Installed Capacity Subcommittee ("ICS") of the New York State Reliability Council

("NYSRC"). The ICS oversees the reliability analyses conducted by the NYISO to support the annual calculation of the level of installed reserves required to ensure reliability, and the NYSRC sets the installed reserve margin ("IRM") for the New York Control Area ("NYCA") annually based on that analysis. In this capacity, I have reviewed, and provided input on, the NYISO's IRM study assumptions and results and have participated in countless discussions concerning the model that is used to support these studies. Over this time period, I have also testified in numerous Federal Energy Regulatory Commission ("Commission") and New York State Public Service Commission proceedings relating to many aspects of the overall NYISO market design, including, pertinent hereto, the design of New York's capacity markets as it has evolved since the inception of those markets. My resume is attached as Exhibit MDY-1.

3. I write this affidavit in support of Independent Power Producers of New York, Inc.'s ("IPPNY") answer to the comments of the Joint Parties.[1] The Joint Parties asserted that the positions taken in their comments were supported by a report prepared by Astrapé Consulting.

4. IPPNY asked me to: (i) explain the NYISO's/NYSRC's resource adequacy modeling; and (ii) analyze the Joint Parties' criticism of that modeling and their challenge in its use in setting the derate applied to energy duration limited resources. As discussed below, because the Joint Parties' arguments opposing the NYISO's/NYSRC's use of the General Electric Multi Area Reliability Simulation ("GE-MARS") model for resource adequacy

[1] Docket No. ER19-2276-000, Comments of Advanced Energy Management Alliance, Advanced Energy Economy, Consumer Power Advocates, Energy Spectrum, Inc., Natural Resources Defense Council, Sustainable FERC Project, and the New York Battery & Energy Storage Technology Consortium (the "Joint Parties") (July 18, 2019) ("Joint Parties Comments").

modeling are based on flawed assumptions and analysis, they are without merit.

NYISO/NYSRC Resource Adequacy Modeling

5. The purpose of the ICAP market is to compensate resources for their contribution to meeting NYISO reliability criteria. Specifically, ICAP suppliers are compensated to avoid loss of load expectation ("LOLE") events. The NYISO and the NYSRC perform the Resource Adequacy Analysis to determine the minimum amount of ICAP the NYISO needs (the IRM), and the required location of that minimum capacity (the "Locational Capacity Requirements" or "LCRs"), to ensure that the probability (or risk) of disconnecting any firm load due to insufficient generating capacity is, on average, not more than once in ten years (commonly referred to as "once in ten" and referenced herein as an "LOLE Event").

6. The NYISO and NYSRC have relied upon the GE-MARS model to perform the resource adequacy modeling for the entire history these entities have been in place to address New York market operations. GE-MARS was specifically developed to perform resource adequacy modeling.[2] It uses a probabilistic approach to determine numerous iterations of potential resource availability scenarios and whether those scenarios would result in an LOLE Event. The NYISO currently models around 2,500 iterations of potential resource availability to ensure a suitably robust representation of potential future outage condition possibilities. The NYISO combines the iterations of unit availability with a probabilistic

[2] A more complete description of GE-MARS and how the NYISO/NYSRC perform resource adequacy analysis is provided in New York Control Area Installed Capacity Requirement For the Period May 2018 to April 2019 (available at: http://www nysrc.org/pdf/Reports/2018%20IRM%20Study%20Report%20Final%2012-8-17[2098].pdf) and the reports technical appendices (available at: http://www.nysrc.org/pdf/Reports/2018%20IRM%20Study%20Appendices%20%20Final%2012_08_2017_V2.pdf)

representation of the impacts of load forecast uncertainty (i.e. weather uncertainty) covering the range of plus/minus three standard deviations from normal weather conditions.[3] The result is that the NYISO models approximately 17,500 different combinations of unit availability and weather conditions for each hour of the year.

7. The NYSRC and the NYISO perform the Resource Adequacy Analysis in a complementary manner. Each year, at the NYSRC performs the Resource Adequacy Analysis and publishes a report on the required minimum IRM for the NYISO system. The assumptions for the IRM are developed in a series of public ICS meetings that involve representatives of the NYSRC, the NYISO and interested parties. Ultimately, once approved by the NYSRC Executive Committee, the annual IRM results are filed at and approved by the Federal Energy Regulatory Commission ("FERC").

8. To set the LCRs for the defined ICAP Localities, the NYISO performs GE-MARS modeling based on the NYSRC's IRM base case study assumptions any applying needed updates.

9. The NYISO also uses the data utilized for the most recent IRM study as the starting point for its biennial Resource Needs Assessment ("RNA") as part of its reliability planning process. Any proposed revisions to the assumptions for the RNA are reviewed at the NYISO's publicly held Electric System Planning Working Group ("ESPWG") meetings.

10. Since the creation of the NYISO and NYSRC, the assumptions that have been used in the NYISO/NYSRC analysis and the modeling methodologies have been reviewed and

[3] See, NYISO Load Forecasting Uncertainty for the 2018 IRM Study presented to the June 27, 2017 Load Forecast Task Force. Available at: https://www.nyiso.com/documents/20142/1408371/2018_IRM_LFU_Models.pdf/a9354a55-3e5f-2b26-7ccd-62fb22a09de4

refined through the ICS and ESPWG meeting process to ensure that they provide the most accurate representation of factors that will affect the resource adequacy of the NYCA.

Valuing ICAP for Resources with Energy Duration Limitations

11. The NYISO hired General Electric Energy Consulting ("GE Energy Consulting") to perform a study of the ICAP value for resources with energy duration limitations (i.e. energy storage and other resources that, unlike traditional resources that currently predominate the system, cannot operate continuously for most or all of a day). GE Energy Consulting is the developer of the GE-MARS model. To evaluate the ICAP value for resources with energy duration limitations, GE started with the base case that the NYISO and NYSRC used to develop the 2018 IRM and LCRs. As a result, GE started with the full-complement of assumptions and modeling that the NYISO has developed over nearly two decades because it reflected the most thoroughly vetted and best representation of the NYISO's system.

12. GE-MARS cannot model energy duration limited resources directly so GE Energy Consulting developed a post processor that takes the results of each individual GE MARS simulation and "dispatches" the energy limited resources so that they have the maximum impact on LOLE Events identified in the GE-MARS runs. They then determined how many megawatts of non-duration limited resources would otherwise be needed to produce the same reliability benefit.[4]

[4] GE Energy Consulting's study entitled Valuing Capacity for Resources with Energy Limitations was presented to the September 24, 2018 Installed Capacity Working Group and then updated in October 9, 2018 and January 8, 2019

Joint Parties' Criticism of the GE Energy Consulting Study

13. The Joint Parties assert the NYISO's proposal understates the value of DERs – most specifically, 4-hour energy duration limited resources after the 1,000 MW penetration level of energy storage resources is reached -- which the Joint Parties assert creates new barriers to these resources by undercompensating them. The Joint Parties raise three main criticisms of the GE Study. First, they claim that the GE Study has identified too many reliability events that last more than 4 hours.[5] As a related concern, they claim that the load representation for the reliability analysis has too many high load hours. Second, they object to GE Energy Consulting's modeling approach of moving generators from one zone to another to balance the reliability metric.[6] Lastly, they claim that, with the addition of renewable generation, the reliability value of storage will increase.[7]

14. The Joint Parties' claims about reliability event duration/load shapes are incorrect. The NYISO's Special Case Resource ("SCR") calls provide an accurate representation of the likely duration of reliability events. Since 2010, the average SCR call has been for a period of time spanning 5.14 hours. Importantly, the calls averaged this long despite the fact that the NYISO had ICAP reserves during these calls that substantially exceeded the minimum requirements. The duration of the SCR calls is relevant because activation of the SCR program clips the top loads for the day, resulting in a flatter load shape for the

presentations. (the January 2019 presentation is available at: https://www.nyiso.com/documents/20142/4358080/01082019%20Capacity%20Value%20of%20Resources%20with%20Energy%20Limitations_v2.pdf/3499da16-12d8-16b7-b12f-be7650e64b63)

[5] Joint Parties Comments at 10-11.
[6] *Id.* at 11.
[7] *Id.* at 9-10.

remaining loads and therefore a requirement that other resources perform for longer periods of time. As was demonstrated on July 18 and 19 of 2013 when SCRs were called in all zones of the NYCA,[8] the remaining peak loads over the top 8 hours of the day fell within just several hundred MWs of the peak. This flattening of the load happened even though July 19, 2013 was the NYISO's all-time peak load. This point is critical to understand: the system results demonstrate that, under peak conditions and after SCR calls, the other resources that were being relied upon to operate the system would need to be able to operate for much longer than four hours to provide the same benefits as a resource without energy duration limitations. Equally important, the corollary point gleaned from this review is that the value of duration limited resources depends on the existence, performance and value of non-duration limited resources to meet most of the system load, and thus, maintaining the diversity of resources on the system is critical. This fact is most readily apparent by taking the point to the extreme case where it would be assumed all resources are duration limited and non-duration limited resources do not exist. At that point individual duration limited resources would have very little reliability value.

15. The Joint Parties' criticism of the GE Study's load shape assumptions is also flawed. The load shapes that have been used by the NYISO have been the subject of substantial review by the NYISO, NYSRC, and interested parties and were the basis of IRM filings

[8] See, Summer Operations: July 15-19, 2013 Heat Wave presentation to July 31, 2013 Management Committee Meeting, pages 9 – 10. (Available at: https://www.nyiso.com/documents/20142/1396445/July%20Heat%20Wave.pdf/30bb75b4-872a-f3b9-d969-b9b799e4c632)

reviewed by the Commission.[9] Indeed, these load shapes were considered an accurate depiction of system loads for purposes of modeling the 2020-2021 IRM analysis which began just over a month ago on June 26, 2019.[10] The load shapes used by the NYISO reflect the fact that in the years with the most extreme weather events the extreme weather is likely to impact only a small number of days.[11]

16. The treatment of Load Forecast Uncertainty is described in NYSRC Policy V as follows:

> The load forecast uncertainty (LFU) model captures the impacts of weather and economic conditions on future loads. The LFU gives the MARS program information regarding seven load levels (three loads lower and three loads higher than the median peak) and their respective probabilities of occurrence. Each modeled hour, the MARS program determines the resource adequacy and calculates an average for the year for all seven load levels. MARS uses this information to evaluate a probability weighted-average LOLE for each area. Recognizing the unique LFU nature of individual NYCA zones, the LFU model is subdivided into four separate areas: New York City, Long Island, Westchester, and the rest of New York State.
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> Preparation of the LFU model is coordinated by the NYISO in collaboration with the TOs. The process used to develop the LFU model generally follows the procedure used to calculate the forecasted NYCA ICAP peak as described in the NYISO Load Forecasting Manual. This process follows the development of the NYCA peak, insofar as the LFU is a distribution, not a point estimate. Following acceptance from the NYISO Load Forecasting Task Force, the NYISO submits the final LFU model to be used in MARS to ICS for review and approval.[12]

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[9] Historically, the NYISO also has submitted its IRM to the NYPSC so the load shapes underlying the IRM calculation each year have been before the NYPSC as well.

[10] See, 2020-2021 NYCA IRM Requirement Study Preliminary Base Case (PBC) Model Assumptions Assumption Matrix, page 2. (available at: http://www.nysrc.org/pdf/MeetingMaterial/ICSMeetingMaterial/ICS%20Agenda%20221/IRM_2020_Assumption_Matrix_PBC_V1.3[9025].pdf)

[11] See Daily & Hourly Load Duration Curve Review – 2002 to 2018, page 2, presented to the May 1, 2019 NYSRC Installed Capacity Subcommittee. (available at: http://www.nysrc.org/pdf/MeetingMaterial/ICSMeetingMaterial/ICS%20Agenda%20219/2018%20Review%20Load%20Duration%20Curve%20V5[8146].pdf

[12] See, NYSRC Policy No. 5-14, Procedure for Establishing NYCA ICAP Requirements (June 14, 2019) (available at: http://www nysrc.org/pdf/Policies/Policy%205-14%20Final[8967].pdf).

17. The relationship between projected load levels and modeled weather conditions is reviewed annually and updated if appropriate. It is based upon a regression of temperatures and load in different regions of the NYISO. This sophisticated representation of the relationship between temperature and load recognizes that loads increase as temperatures rise.

18. The combination of load shapes and temperature impacts is necessary for a full and accurate representation of the possible load levels facing the NYISO.

19. Astrapé, which performed an analysis in support of the Joint Parties filing, takes a different approach to modeling loads. It takes data from the last 38 years and attempts to separate temperature dependent load from non-temperature dependent load and then attempts to adjust the temperature dependent load for potential weather changes. This methodology has not been subject to the years of scrutiny that the NYISO method has had. Indeed, beyond the presentations as part of this effort, it has never even been put before New York market participants for consideration, much less subject to any kind of in-depth review.

20. The data that Astrapé provided to highlight the difference between the NYISO and Astrapé forecast loads actually reveals concerns with, and shortcomings inherent in, the Astrapé representation. To support the reasonableness of its load modelling representation, Astrapé presented a load duration curve showing the top 100 hours from: 1) the NYISO modeled loads; 2) historical loads for the past 10 years (presumably 2008 through 2017); and, 3) Astrapé's methodology.[13] This shows that the top 100 hours of

[13] See Figure 6, Load Shape Comparison, From Load Shape Development and Energy Limited Resource Capacity Valuation, Final Report, Astrapé Consulting, p. 9. This report is Appendix A to the Joint Parties filing.

the NYISO representation are higher than the 10-year historical loads while Astrapé's estimated loads are slightly lower than the historical values.

21. The flaw in this presentation is that the actual peak loads during the 10-year period that was used were generally substantially below forecast peak loads for the NYISO. This is demonstrated in the table below.

Year	NYCA Actual Peak	NYCA Forecast Peak	Actual Vs. Forecast	Actual as a Percent of Forecast
2008	32,433	33,809	Lower	95.9%
2009	30,845	33,930	Lower	90.9%
2010	33,453	33,025	Higher	101.3%
2011	33,867	32,712	Higher	103.5%
2012	32,439	33,295	Lower	97.4%
2013	33,956	33,279	Higher	102.0%
2014	29,782	33,666	Lower	88.5%
2015	31,139	33,567	Lower	92.8%
2016	32,075	33,359	Lower	96.2%
2017	29,699	33,178	Lower	89.5%
2018	31,861	32,903	Lower	96.8%
		Average 2008-2017		95.8%

22. Given that the loads for the ten years to which Astrapé compared its methodology were lower than normal, the Astrapé loads, which Astrapé claims can adequately represent the full range of potential loads the NYISO system might face, should have been higher, not lower, than the historic loads calculated under the NYISO's methodology to account for this differential and provide the appropriate correlation to actual events required for

reliability analyses of these kind. This indicates that Astrapé's load methodology significantly understates loads that the NYISO is likely to face.

23. The Astrapé load methodology should be rejected. Unlike the NYISO's methodology which has been subject to rigorous review over the past 20 years, its validity has not been demonstrated. Based on an initial review using the limited information provided in the Joint Parties Filing and in the two presentations given by Astrapé at working group meetings, it does not withstand scrutiny.

24. The second concern raised by Astrapé is that the GE Energy Consulting analysis moves generators from specific zones to balance the reliability metric. As noted in the Joint Parties' comments: "In small zones, removing a single generator can significantly increase the number and duration of reliability events, as fewer resources are available to prevent or end the reliability event."[14]

25. This mischaracterizes the NYISO/NYSRC's methodology for balancing the reliability metric. Under the NYISO/NYSRC's modeling, "[ICAP] is either added to or removed from zones west of the Total East Interface *that have excess capacity reserves* (capacity rich zones) so that the statewide capacity to peak load ratio equals the desired study reserve margin (SRM) point" (emphasis added). The methodology performs the adjustment to Zones A, C, and D. Contrary to Astrapé's characterization of these zones, each of them has ICAP that is greatly in excess of the zonal peak loads. Therefore, by definition, there are indeed ample resources available in these zones to prevent or end an LOLE Event. Because the NYISO/NYSRC's methodology removes ICAP from zones

[14] Joint Parties at 11.

with excess ICAP (i.e. potentially export constrained zones), Astrapé's second claimed basis for discarding the NYISO/NYSRC's methodology completely lacks basis.

26. The final concern presented by the Joint Parties is that they expect that the value of the energy duration limited resources will increase as the amount of intermittent renewable energy penetration increases. In support of their position they reference a study by the National Renewable Energy Laboratory ("NREL") that showed the value of 4-hour duration resources increased as solar-PV penetration levels increased.

27. The Commission should not rely on this study when assessing the NYISO's methodology. First, the solar penetration levels that NREL is modeling are very high. NREL evaluated penetration in terms of 5% increments. New York is forecasted to have load of about 154 TWh per year over the next ten years. A ten percent solar penetration would need to produce 15.4 TWh per year. The NYISO operations report provides data on the capacity factor for behind-the-meter solar in New York. The annual average estimate is about an 11.5% capacity factor. To reach solar penetration equal to 10% of the NYISO's energy requirements translates to requiring approximately 15,300 MW of solar resources once the capacity factor of these resources is taken into account. Correspondingly, a 5% solar penetration would require approximately 7,650 MW of solar resources.

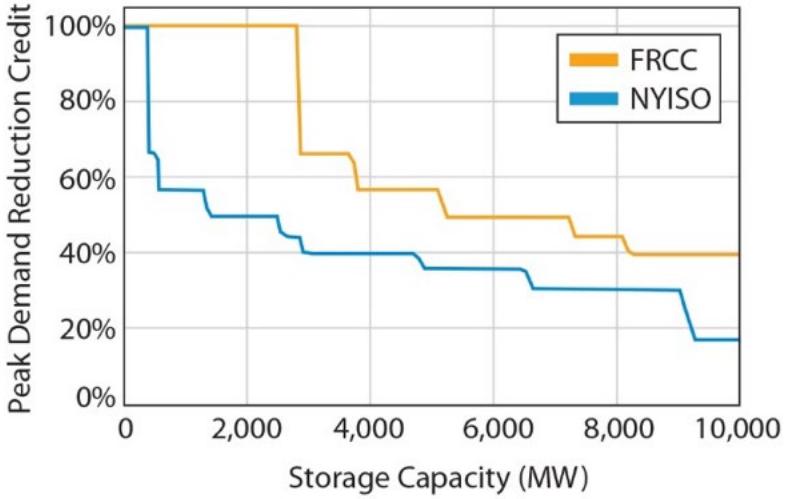
28. This is an extraordinarily high level of solar penetration for New York that goes well beyond any reasonable expectations anytime in the near future. Currently, the NYISO estimates that New York has 1,585 MW of behind the meter solar and there is 31.5 MW of wholesale level solar on its system. Under the recently enacted legislation in New York, the Climate Leadership and Community Protection Act ("Climate Act"), 6,000

MW of solar resources must be brought on line by 2025. Thus, even under this program which is expected to include subsidies to support the underlying public policy initiative, these levels are below the 5% penetration level that is the first step in the NREL data presented by Joint Parties.

29. Achieving solar penetration levels even equal to 5% -- much less 10% and beyond -- is so far out in the future, its potential impact on the reliability value of resources that have energy duration limitations cannot reasonably serve as a basis to set the derate values for energy duration limited resources in this proceeding. Thus, while the Joint Parties challenge the 2,000 MW wind and solar levels the NYISO used in their study assumptions as being inadequate to reflect future system conditions, Astrapé ignores the fact that the NREL Study is based on solar penetration levels that substantially exceed any reasonable near or even mid-term projection for New York State, even after taking into consideration the impacts of the Climate Act. It is important to note that the NYISO has proposed a review process to assess this design going forward contemporaneous with its ICAP Demand Curve reset process. This review process will provide an ample opportunity to compare achieved levels of solar penetration against the NREL Study assumptions.

30. In addition, while the Joint Parties rely on the NREL Study to support their claim that energy storage resources should be assigned a higher value, they fail to account for NREL's estimate of the value of 4-hour resources at this time. NREL estimated that, under current conditions, energy storage resources that have 4-hour energy duration

limitations are of much lower value than estimated by any party in this proceeding.[15] At 1,000 MW of penetration of 4-hour battery storage units in the NYISO, NREL estimates the ICAP value would be less than 60% of the total installed capability.



31. As with the methodology used in the Astrapé study, the NREL study has not been subject to the level of scrutiny and review as has been applied to the NYISO's own modeling with GE-MARS. Absent the same rigor of review, neither the Astrapé nor NREL studies should be accorded significant weight to determine derates to apply to duration limited resources.

32. Nor do Astrapé and the Joint Parties address the important reliability considerations presented by NYISO operations based on their experience operating the system. NYISO operations staff highlighted the substantial number of factors that they must manage to maintain reliability under expected and unexpected system conditions consistent with

[15] The Potential For Battery Energy Storage to Provide Peaking Capacity in the United States, Paul Denholm, Jacob Nunemaker, Pieter Gagnon, and Wesley Cole, NREL Technical Report TP-6A20-74184, page 5. (Available at: https://www.nrel.gov/docs/fy19osti/74184.pdf)

reliability criteria.[16] NYISO operations staff also pointed to the potential need to trigger manual out of market actions to manage a large number of energy duration limited resources and placed emphasis on the GE Study finding that the reliability value of shorter duration resources changes as their penetration level increases. As reflected in their presentation, these issues span beyond peak day operations and will challenge their ability to operate the system due to the simple fact that contingencies cannot be forecasted with perfect foresight in actual operations. In real world operations, these resources may already have used their limited energy before it was needed most on the system.

33. Taking into account the effect of expected and unexpected system conditions that occur in real-time operations is a critical factor, particularly in light of the fact that the Climate Act also mandates the installation of 3,000 MW of energy storage resources in New York by 2030 and focus has been placed on installing a large amount of energy storage resources in New York City, a highly congested area. Thus, while the Joint Parties claim they seek relief that will strengthen competition and reliability in the New York market, their proposal will expose the system to more significant reliability risks.

Conclusion

34. GE Energy Consulting's modeling using the GE-MARS model builds upon the reliability analysis that has been performed by the NYISO and NYSRC for the past two decades. Given that it has been subject to ongoing scrutiny by interested parties across all Market

[16] *See* NYISO Operations Analysis at 4 (specifying factors included expected peak load and duration, over and under forecast of load, over and under forecast of intermittent resources, changing weather conditions (*e.g.*, thunderstorms), forced outages of generators, forced outages of transmission equipment and fuel uncertainties).

Participant sectors over this time, it provides the most thoroughly vetted and fulsome representation of resource adequacy risks within the NYISO. The results of that modeling should be used to set the capacity eligibility for resources that have energy duration limitations. The model identified the value at, below, and above 1,000 MW of limited duration resource penetration, an adequate analysis given current system conditions. The modeling will be updated again in four years, and if conditions on the system or improvements in modeling warrant any changes to the capacity eligibility levels proposed by the NYISO, any such changes can be made then.

35. This concludes my affidavit.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

New York Independent System Operator, Inc., Proposed Tariff Revisions Regarding Establishment of Participation Model for Aggregations of Resources, Including Distributed Energy Resources, and Proposed Effective Dates	)	Docket No. ER19-2276-000

I declare under penalty of perjury that the forgoing is true and correct.

Executed on August 9, 2019.

Mark D. Younger
Mark D. Younger

MARK D. YOUNGER

Mr. Younger is President of Hudson Energy Economics, LLC and has over thirty-five years of experience in energy analysis.

EDUCATION

MBA, Cornell University, 1983

M.E., Operations Research
Cornell University, 1983

B.S., Engineering, Major - Operations Research
Cornell University 1981

PROFESSIONAL EXPERIENCE

President
Hudson Energy Economics, LLC (2012 - Present)
Specialist on electric deregulation, market structure issues and deregulated electric energy, ancillary service and capacity market design. Involved as an active participant in the working groups refining the New York Independent System Operator, Inc. ("NYISO") market structure and developing methods to improve the market design, including all aspects of its energy, ancillary services and capacity markets.

Vice President
Slater Consulting (1994 - 2012)
Involved as an active participant in the working groups refining the New York Independent System Operator, Inc. ("NYISO") market structure and developing methods to improve the market design, including all aspects of its energy, ancillary services and capacity markets. One of the original architects of New York's capacity demand curve.

Senior Project Manager
Morse, Richard, Weisenmiller & Associates, Inc. (1986-1994)
Responsible for directing MRW's projects on production cost modeling. Prepared extensive analysis and expert witness testimony on avoided costs in California, New York, Pennsylvania and New Jersey. Performed analyses of electric utility emissions reductions associated with cogeneration projects.

Energy Economist
Pacific Gas & Electric Company (1983-1986)
Responsible for developing models and methods for integrated supply and demand-side resource analysis. Developed and performed an analysis of resource planning under uncertainty using Monte Carlo techniques.

Research Specialist for Duane Chapman, Professor of Resource Economics
Cornell University (1982-1983)
Formulated the financial simulation section of the University Research Group on Energy's (URGE) integrated model of the electric utility industry. Performed an analysis of the impact on New York Pollution levels and New York utilities of proposed acid rain abatement strategies.

Mark D. Younger
Affidavits and Testimony

- Affidavit on behalf of the Independent Power Producers of New York on why allowing Linden VFT and the Hudson Transmission Project to continue to sell capacity in NYISO markets after converting their Transmission Withdrawal Rights from Firm to Non-Firm violates the NYISO and PJM tariffs. (FERC Docket No. EL18-189-000) July 31, 2018.
- Affidavit on behalf of the Independent Power Producers of New York on why allowing Linden VFT and the Hudson Transmission Project to continue to sell capacity in NYISO markets after converting their Transmission Withdrawal Rights from Firm to Non-Firm violates the NYISO and PJM tariffs. (FERC Docket No. EL18-54-000) February 23, 2018.
- Affidavit on behalf of the Independent Power Producers of New York on the dollars that gas local distribution companies would collect annually by charging electric generator gas interruptible transportation customers in New York City a $0.10 per Dth charge and the cost that would impose on electricity consumers in NYC. (NY PSC Docket No. 17-G-0011)
- Affidavit on behalf of Roseton Generating, LLC on the inappropriateness of blocking generators located in the NYISO Localities from selling capacity to the ISO-NE market during the 2017-2018 capability year (FERC Docket No. ER16-2451-000) September 23, 2016
- Affidavit on behalf of the Independent Power Producers of New York and the Electric Power Supply Association on the flaws in the NYISO's proposed implementation of a Renewable and Self Supply Exemption (FERC Docket No. ER16-1404-000) May 31, 2016.
- Affidavit on behalf of the Independent Power Producers of New York and the Electric Power Supply Association on the flaws in the NYISO's Information Response on the Deficiencies in Its Analysis of the Need for Uneconomic Retention Mitigation and NYCA wide Uneconomic Entry Mitigation (FERC Docket No. EL13-62-002) January 19, 2016.
- Affidavit on behalf of the Independent Power Producers of New York and the Electric Power Supply Association on the flaws in the NYISO's proposed Reliability Must Run compliance filing (FERC Docket No. ER16-120-000) November 30, 2015.
- Affidavit on behalf of the Independent Power Producers of New York regarding the flaws in claims that lightly regulated utilities claimed confidential information is already in the public domain and in the harm from releasing such data. (NY PSC Matter No. 13-01288) September 3, 2015.
- Affidavit on behalf of the Independent Power Producers of New York regarding the flaws in the NYISO Evaluation of the Need for Uneconomic Retention Mitigation in NYCA Rest of State Market. (FERC Docket No. EL13-62-002) July 17, 2015.
- Affidavit on behalf of the Independent Power Producers of New York regarding the flaws in the NY PSC, NYPA and NYSERDA proposed fundamental revisions to the NYISO's Buyer-Side Mitigation Rules. (FERC Docket No. EL15-64-000) June 29, 2015.
- Affidavit on behalf of the Independent Power Producers of New York regarding the need to maintain confidentiality for certain data submitted to the New York Public Service Commission by lightly regulated utilities. (NY PSC Matter No. 13-01288) June 17, 2015.
- Affidavit on behalf of the PSEG Companies regarding how market rules that affect price formation have developed within the NYISO and how those rules should be incorporated into

PJM Interconnection L.L.C.'s ("PJM") market design. (FERC Docket No. AD14-14-000) March, 6, 2015.

- Affidavit on behalf of the Independent Power Producers of New York regarding the failure of TDI to show that they Champlain Hudson Power Express should be given a line specific exemption from Buyer-Side uneconomic entry mitigation and the failure of TDI to demonstrate that the existing NYISO tariff's application of mitigation to its project was not Just and Reasonable (FERC Docket No. EL15-33-000), January 15, 2015.
- Affidavit on behalf of the Independent Power Producers of New York regarding flaws in the NYISO's and Transmission Owners proposals for a Competitive Entry Exemption from Buyer-Side uneconomic entry mitigation and the failure of the Transmission Owners to demonstrate that the existing NYISO tariff was not Just and Reasonable (FERC Docket No. EL15-25-000), January 15, 2015.
- Affidavit on behalf of the Independent Power Producers of New York regarding the flaws in the NYISO's proposal to define generator outage states and associated requirements and calculations (FERC Docket No. ER14-2518-000), September 2, 2014.
- Affidavit on behalf of the Independent Power Producers of New York regarding the need to maintain confidentiality for certain data submitted to the New York Public Service Commission by lightly regulated utilities. (NY PSC Matter No. 13-01288) August 6, 2014.
- Second Supplemental Affidavit on behalf of the Independent Power Producers of New York regarding the need to mitigate the uneconomic retention of the Dunkirk Power Plant which is being retained pursuant to a 10 year out-of-market contract (FERC Docket No. EL13-62-000), March 25, 2014.
- Supplemental Affidavit on behalf of Entergy rebutting the claimed rate impacts associated with the implementation of the NYISO Lower Hudson Valley capacity zone. (FERC Docket No. ER14-500-000), January 6, 2014.
- Affidavit on behalf of Entergy regarding the need to reject a phase in for implementing the NYISO Lower Hudson Valley capacity zone Demand Curve. (FERC Docket No. ER14-500-000), December 20, 2013.
- Affidavit on behalf of the Independent Power Producers of New York regarding the appropriate values for determining the NYISO Installed Capacity Demand Curves. (FERC Docket No. ER14-500-000), December 20, 2013.
- Second Supplemental Affidavit on behalf of Entergy regarding why it is inappropriate to phase in capacity prices for the NYISO New Capacity Zone for the Lower Hudson Valley region and why the new information that the NYISO relied upon for their filing is neither new nor correct. (FERC Docket No. ER13-1380-000), November 12, 2013.
- Affidavit on behalf of the Independent Power Producers of New York before the Board of the NYISO regarding the proposed demand curves being set at too low a level to adequately address the risk of entering the New York electricity markets as a merchant facility. October 2, 2013.

Mark D. Younger
Affidavits and Testimony

- Supplemental Affidavit on behalf of the Independent Power Producers of New York regarding the why regulated RMR contracts must bid into the NYISO Installed Capacity Market at their full going forward costs. (FERC Docket No. EL13-62-000), June 14, 2013.
- Supplemental Affidavit on behalf of Entergy regarding the need to not delay in implementing a New Capacity Zone for the Lower Hudson Valley region and the flaws in arguments that a New Capacity Zone is not needed at this time. (FERC Docket No. ER13-1380-000), June 5, 2013.
- Affidavit on behalf of Entergy regarding the need to implement a New Capacity Zone for the Lower Hudson Valley region. (FERC Docket No. ER13-1380-000), May 21, 2013.
- Affidavit on behalf of the Independent Power Producers of New York regarding the need to revise the NYISO tariff to assure that generators with regulated RMR contracts bid into the NYISO Installed Capacity Market at their going forward costs. (FERC Docket No. EL13-62-000), May 10, 2013.
- Affidavit on behalf of the Independent Power Producers of New York to the NYISO Board of Directors regarding why a peaking unit should continue to be used as the Demand Curve Proxy Unit. April 17, 2013.
- Affidavit on behalf of the Independent Power Producers of New York regarding the inappropriate requirement that Cayuga bid into the NYISO Installed Capacity Market at a de minimis price while recovering its costs from a regulated RMR contract. (FERC Docket No. ER13-405-000), January 7, 2013.
- Affidavit on behalf of the New York City Suppliers rebutting Hudson Transmission Partners claims that their Buyer-Side Mitigation examination by the NYISO had been performed in a manner inconsistent with the NYISO Service Tariff Requirements. (FERC Docket No. EL12-98-000), November 13, 2012.
- Affidavit on behalf of Entergy Nuclear Power Marketing, LLC and the GenOn Parties concerning the NYISO's June 29, 2012 Compliance Filing proposing tariff revisions to its Market Administration and Control Area Services Tariff ("Services Tariff") to implement both buyer-side and supplier-side mitigation measures for New Capacity. (FERC Docket No. ER12-360-001), July 20, 2012.
- Rebuttal Testimony on behalf of the Independent Power Producers of New York on the flaws in the project sponsor's and the New York Department of Public Service's evaluation of the economics of the Champlain Hudson Power Express. (NYPSC Docket No. 10-T-0139), June 28, 2012.
- Testimony on behalf of the Independent Power Producers of New York on the economics of the Champlain Hudson Power Express. (NYPSC Docket No. 10-T-0139), June 7, 2012.
- Third Supplemental Affidavit on behalf of the New York City Suppliers rebutting Bayonne Energy Center's claims regarding their gas pricing advantage and the value of TCCs for their project. (FERC Docket No. EL11-50-000), October 10, 2011.
- Second Supplemental Affidavit on behalf of the New York City Suppliers on the New York Independent System Operator's flawed analysis in its mitigation determination for Astoria

Energy II and the Bayonne Energy Center. (FERC Docket No. EL11-50-000), September 23, 2011.

- Supplemental Affidavit on behalf of the New York City Suppliers on the New York Independent System Operator's failure to properly apply its capacity market mitigation rules to Astoria Energy II and the Bayonne Energy Center. (FERC Docket No. EL11-50-000), July 11, 2011.
- Second Supplemental Affidavit on behalf of the New York City Suppliers on the tight correlation between natural gas pricing and LBMPs and the inability of the NERA model to represent this relationship. (FERC Docket No. EL11-42-000), July 21, 2011.
- Affidavit on behalf of the New York City Suppliers on the New York Independent System Operator's failure to properly apply its capacity market mitigation rules to Astoria Energy II and the Bayonne Energy Center. (FERC Docket No. EL11-50-000), July 11, 2011.
- Supplemental Affidavit on behalf of the New York City Suppliers on the flaws and inconsistencies shown in the New York Independent System Operator release of data to use for the New York City uneconomic entry mitigation exemption test. (FERC Docket No. EL11-42-000), June 15, 2011.
- Affidavit on behalf of the New York City Suppliers on the proper way to apply the New York City uneconomic entry mitigation exemption test. (FERC Docket No. EL11-42-000), May 31, 2011.
- Affidavit on behalf of the Independent Power Producers of New York in response to the NYISO's Compliance Filing on the Capacity Demand Curve on the appropriate level of average excess to assume in setting the Capacity Demand Curve. (FERC Docket No. ER11-2224-004), April 19, 2011.
- Affidavit on behalf of New York City Suppliers on the need to revise the Baseline for Special Case Resources. (FERC Docket No. ER11-2906-000). March 4, 2011.
- Reply Affidavit on behalf of the Independent Power Producers of New York on New York Installed Capacity Demand Curve on the arguments against including System Deliverability Upgrade costs in the Demand Curves, on the inappropriateness of using a Long Island unit as a proxy for the NYCA demand curve and set the Demand Curve based upon inaccurately and the flaws of using historic auction results to determine the amount of excess capability due to winter unit ratings. (FERC Docket No. ER11-2224-000), January 7, 2011.
- Affidavit on behalf of the Independent Power Producers of New York on New York Installed Capacity Demand Curve on the need for accurate representation of the average excess capacity levels, System Deliverability Upgrade costs and New York City interconnection costs in the development of the Demand Curves. (FERC Docket No. ER11-2224-000), December 21, 2010.
- Affidavit on behalf of New York City Suppliers on the New York Independent System Operator's proposed revisions to the New York City Installed Capacity Mitigation measures on the impact of the NYISO's changes on reducing the effectiveness of the mitigation. (FERC Docket No. ER10-3043), November 22, 2010.

Mark D. Younger
Affidavits and Testimony

- Affidavit on behalf of the Independent Power Producers of New York in response to the Comments of the New York Transmission Owners on the NYISO's Second Tariff Compliance Filing ad Request for Waiver of the NYISO on the inappropriateness of using the price at the 104% point on the New York City Demand Curve as the Net CONE value. (FERC Docket No. ER08-695-001), June 21, 2010.
- Affidavit on behalf of AES Eastern Energy, L.P., Constellation Energy Nuclear Group, LLC, Empire Generating Co., LLC, GDF SUEZ Energy North America, NRG Companies, PSEG Companies, Shell Energy North America (US), L.P., and TC Ravenswood, LLC on the New York Independent System Operator and New York Transmission Owner compliance filing to implement the Comprehensive Deliverability Plan on the need to apply a deliverability test to capacity imports. (FERC Docket No. ER04-449-019), May 18, 2009.
- Affidavit on behalf of the Independent Power Producers of New York on the NYISO's October 30, 2008 Tariff Compliance Filing on the In-City Capacity Mitigation on the inappropriateness of the NYISO's proposed Special Case Resource uneconomic entry mitigation and test for uneconomic exports. (FERC Docket No. EL07-39), December 2, 2008.
- Affidavit on behalf of the In City Capacity Suppliers in support of their Section 206 filing to restate the New York City Installed Capacity Demand Curve pursuant to expiration of the New York City ICIP Tax Abatement Program. (FERC Docket No. EL09-4), October 14, 2008.
- Affidavit on behalf of the Independent Power Producers of New York in support of their motion for leave to file answer, and answer to the New York Transmission Owner's Comments on the Commission decision implementing New York City Capacity Market Mitigation on the appropriateness of using the Net CONE as shown at 100% of the minimum capacity requirement as the basis for the mitigation offer floor. (FERC Docket No. ER08-695), June 11, 2008.
- Affidavit in support of the limited protest being submitted by Astoria Generating Company, L.P to address the New York Independent System Operator's ("NYISO") Second Tariff Compliance Filing of and Request for Waiver of the New York Independent System Operator Inc. Implementing New York City ICAP Market Mitigation Measures ("NYISO Compliance Filing") to address appropriate recognition of opportunity costs associated with exports and appropriate thresholds and penalties for determining mitigation. (FERC Docket No. ER08-695-001), May 27, 2008.
- Testimony on behalf of the Independent Power Producers of New York on the Vertical Market Power concerns on the Acquisition of Energy East Corporation by Iberdrola, S.A. (NY PSC Case 07-M-0906). January 11, 2008.
- Affidavit on behalf of AES Eastern Energy, L.P., Astoria Generating Company, L.P., a US Power Generating Company, Entergy Nuclear Power Marketing, LLC and the Mirant Parties on New York Installed Capacity Demand Curve on the appropriate values for the Demand Curve. (FERC Docket No. ER08-283-000), December 31, 2007.
- Affidavit on behalf of AES Eastern Energy on the New York State Department of Environmental Conservation's and New York State Energy Research Development

Authority's proposed regulations to implement the Regional Greenhouse Gas Initiative (6 NYCRR Part 242, 6 NYCRR Part 200 and 21 NYCRR Part 507), December 19, 2007

- Affidavit on behalf of Astoria Generating Company, L.P., a U.S. Power Generating Company on the NYISO's proposed Capacity Market Mitigation Measures on the appropriate design of New York City Installed Capacity mitigation measures. (FERC Docket No. EL07-39-000), December 10, 2007.
- Affidavit on behalf of Astoria Generating Company, L.P., a U.S. Power Generating Company on the NYISO's proposed Capacity Market Mitigation Measures. (FERC Docket No. EL07-39-000), November 19, 2007.
- Affidavit on behalf of AES Eastern Energy, LP,, Astoria Generating Company, L.P., a U.S. Power Generating Company, Dynegy Northeast Generation, Inc., Entergy Nuclear Power Marketing, LLC, the Indeck Companies, and the Mirant Parties to NYISO Board of Directors on NYISO Staff proposed Installed Capacity Demand Curves on the appropriate values for the Demand Curves. October 1, 2007.
- Affidavit on behalf of the Independent Power Producers of New York to NYISO Board of Directors on NYISO Staff proposed Installed Capacity Demand Curves on the appropriate values for the Demand Curves. October 1, 2007.
- Affidavit on behalf of the Independent Power Producers of New York on the Vertical Market Power concerns in the Merger of National Grid PLC and KeySpan Corporation. (NY PSC Case 06-M-0878), July 11, 2007.
- Affidavit on behalf of the Independent Power Producers of New York on the proper determination of Location Based Marginal Costs on May 8 and 9, 2000 (FERC Docket No. EL01-19-006), July 8, 2005.
- Affidavit on behalf of Entergy Corporation, Mirant Bowline, LLC, Mirant Lovett, LLC, Mirant NY-Gen, LLC, Mirant Americas Energy Marketing, and Sithe Energies, Inc. to NYISO Board of Directors on NYISO Staff proposed Installed Capacity Demand Curves. October 15, 2004
- Affidavit on behalf of the Independent Power Producers of New York to NYISO Board of Directors on NYISO Staff proposed Installed Capacity Demand Curves. October 15, 2004
- Affidavit on behalf of the Independent Power Producers of New York on New York Installed Capacity Demand Curve (FERC Docket No. ER03-647-000) on the need to implement an Installed Capacity Demand Curve for the NYISO. April 10, 2003.
- Affidavit on behalf of AES, Mirant & Sithe to NYISO Board of Directors on Appeal of the Management Committee Decision on the ICAP Demand Curve on the need to implement an Installed Capacity Demand Curve for the NYISO. March 7, 2003.
- Affidavit on behalf of the Independent Power Producers of New York to NYISO Board of Directors on Appeal of the Management Committee Decision on the ICAP Demand Curve on the need to implement an Installed Capacity Demand Curve for the NYISO. March 7, 2003.
- Affidavit on behalf of the Independent Power Producers on the ICAP Demand Curve under Appeal of the NYISO Business Issues Committee decision at the NYISO Management

Committee on the need to implement an Installed Capacity Demand Curve for the NYISO. December 27, 2002.

- Affidavit on behalf of Reliant Energy Power Generation on Setting the Conduct and Impact Thresholds for in-City Generating Units. (FERC Docket No. ER01-3155-002 et. al.), May 15, 2002.
- Testimony on behalf of TransGas Energy Systems in their Article 10 Citing proceeding (NY PSC Case 01-F-1276) on the energy and pollutant savings associated the TransGas Energy Systems proposed 1000 MW Combined Cycle facility.
- Affidavit on behalf of Reliant Energy Power Generation on New York Independent System Operator's Compliance Filing Regarding Comprehensive Market Mitigation Measures. (FERC Docket No. ER01-3155-002 et. al.), April 23, 2002
- Testimony on behalf of Orion Power New York GP, Inc. on Con Edison Company of New York, Inc.'s Proposal to Revise the Localized Market Power Mitigation Measures (FERC Docket No. ER98-3169-000), April 3, 2001.
- Affidavit on behalf of Southern Energy North America, Inc., AES NY, L. L. C, , Sithe Power Marketing, L. P., & FPL Energy LLC on the need to retain the PJM Installed Capacity Market. (FERC Docket No. EL01-3-000), October, 25, 2000.
- Testimony on behalf of the Mid-Atlantic Power Supply Association on the Baltimore Gas & Electric Company stranded costs. (Maryland PSC Case No. 8794), December 22, 1998.
- Testimony on behalf of Enron Power Marketing, Inc on New York Electricity Companies' request for market-based rate authority. (FERC Docket No. ER97-1523 et al.), October 31, 1997.
- Testimony on behalf of Sithe Energies, Inc on Petition of Niagara Mohawk Power Corporation to Employ 1996 Fuel Adjustment Clause Targets in 1997 (NY PSC Case 96-E-0928) on the inappropriateness of using the outdated targets to determine the 1997 avoided costs.
- Testimony on behalf of the Independent Power Producers of New York and Enron Capital & Trade Resources on Central Hudson Gas & Electric Corporation rate/restructuring proceeding (NY PSC Case 96-E-0909) on the problems with the proposed settlement associated with the proposal that Central Hudson continue to be a vertically integrated utility holding company and to propose interim rate treatment until the time that Central Hudson divests its generation assets.
- Testimony on behalf of the Independent Power Producers of New York and Enron Capital & Trade Resources on Orange & Rockland Utilities, Inc. rate/restructuring proceeding (NY PSC Case 96-E-0900) on the problems in the proposed settlement associated with Orange and Rockland continuing to own generation resources in the deregulated competitive generation market, propose incentives for Orange and Rockland to divest, and, to propose interim rate treatment until the time that Orange and Rockland divests its generation assets..
- Testimony on behalf of the Independent Power Producers of New York and Enron Capital & Trade Resources on Consolidated Edison Company of New York, Inc. rate/restructuring

proceeding (NY PSC Case 96-E-0897) on the problems in the propose settlement associated with Con Edison continuing to be a vertically integrated utility owning generation resources in the developing competitive generation market, to propose stronger incentives for divestiture of Con Edison's fossil generation and to propose interim regulatory treatment until the time that Con Edison divests its generation assets.

- Testimony on behalf of the Independent Power Producers of New York and Enron Capital & Trade Resources on New York State Electric & Gas Corporation rate/restructuring proceeding (NY PSC Case 96-E-0891) on the problems with NYSEG's proposal to continue owning generation under a utility holding structure, the manner in which the proposed structure shielded the generating company from competition, and the need to divest the generating assets.

- Testimony on behalf of Sithe Energies, Inc on Consolidated Edison Company of New York, Inc. rate proceeding (NY PSC Case 96-E-0798) on the appropriate bases for calculating the short run avoided energy costs for Qualifying Facilities for Con Ed.

- Testimony on behalf of California Cogeneration Council on Southern California Edison 1995 Energy Cost Adjustment Clause (CPUC Application No. 95-05-049) on the value of Qualifying Facilities for SCE

- Testimony on behalf of California Cogeneration Council on Pacific Gas & Electric Company 1995 Energy Cost Adjustment Clause (CPUC Application No. 95-04-002) on the value of Qualifying Facilities for PG&E and the O&M costs avoided by QFs

- Testimony on behalf of Sithe Energies, Inc on Consolidated Edison Company of New York, Inc. rate proceeding (NY PSC Case 94-E-0334) on the appropriate bases for calculating the short run avoided energy costs for Qualifying Facilities for Con Ed.

- Testimony on behalf of the Independent Power Producers of New York on Niagara Mohawk Power Corporation rate proceeding, (NY PSC Cases 94-E-0098 and 94-E-0099) on need to retire certain generating units that are part of their portfolio or in the alternative to introduce rate making that puts Niagara Mohawk at risk for the units being economic.

- Testimony on behalf of California Cogeneration Council on San Diego Gas & Electric Company 1994 Energy Cost Adjustment Clause (CPUC Application No. 94-10-023) on the value of Qualifying Facilities for SDG&E and the O&M costs avoided by QFs

- Testimony on behalf of California Cogeneration Council on Pacific Gas & Electric Company 1994 Energy Cost Adjustment Clause (CPUC Application No. 94-04-002) on the value of Qualifying Facilities for PG&E and the O&M costs avoided by QFs

- Testimony on behalf of Sithe Energies, Inc on Combined Long Run Avoided Cost and Generic Fuel Adjustment Clause proceeding (NY PSC Cases 93-E-0912 and 93-E-1075) on the appropriate long and short run avoided energy costs for Qualifying Facilities.

Mark D. Younger
Affidavits and Testimony

- Testimony on behalf of Sithe Energies, Inc on Niagara Mohawk Power Corporation 1993 Rate Case (NY PSC Cases 93-E-0376, et al.) on the appropriate bases for calculating the short run avoided energy costs for Qualifying Facilities for NMPC.

- Testimony on behalf of Kamine and Besicorp Companies on New York Public Service Commission Curtailment Proceeding (NY PSC Case Nos. 92-E-0814 and 88-E-081) on the need for Niagara Mohawk Power Corporation to curtail Qualifying Facilities

- Testimony on behalf of KELCO Division of MERCK & Co., Inc. on San Diego Gas & Electric Company 1992 Energy Cost Adjustment Clause (CPUC Application No. 92-09-078) on the value of Qualifying Facilities for SDG&E and the O&M costs avoided by QFs

- Testimony on behalf of California Cogeneration Council on Southern California Edison 1992 Energy Cost Adjustment Clause (CPUC Application No. 92-05-047) on the value of Qualifying Facilities for SCE

- Testimony on behalf of California Cogeneration Council on Pacific Gas & Electric Company 1992 Energy Cost Adjustment Clause (CPUC Application No. 92-04-001) on the value of Qualifying Facilities for PG&E and the O&M costs avoided by QFs

- Testimony on behalf of KELCO Division of MERCK & Co., Inc. on San Diego Gas & Electric Company 1991 Energy Cost Adjustment Clause (CPUC Application No. 91-09-059) on the value of Qualifying Facilities for SDG&E and the O&M costs avoided by QFs

- Testimony on behalf of California Cogeneration Council on Pacific Gas & Electric Company 1991 Energy Cost Adjustment Clause (CPUC Application No. 91-04-003) on the value of Qualifying Facilities for PG&E

- Testimony on behalf of California Cogeneration Council on Pacific Gas & Electric Company 1990 Energy Cost Adjustment Clause (CPUC Application No. 90-04-003) on the value of Qualifying Facilities for PG&E

- Testimony on behalf of California Cogeneration Council on San Diego Gas & Electric Company 1989 Energy Cost Adjustment Clause (CPUC Application No. 89-09-031) on the value of Qualifying Facilities for SDG&E

- Testimony on behalf of California Cogeneration Council on Pacific Gas & Electric Company 1989 Energy Cost Adjustment Clause (CPUC Application No. 89-04-001) on the value of Qualifying Facilities for PG&E (1989, Phases I and II)

- Testimony on behalf of California Cogeneration Council on Pacific Gas & Electric Company 1990 Test Year General Rate Case (CPUC Application No. 88-12-005) on the amount of utility operations and maintenance costs avoided by the presence of QF generation.

- Testimony on behalf of California Cogeneration Council on San Diego Gas & Electric Company 1988 Energy Cost Adjustment Clause (CPUC Application No. 88-07-003) on the value of Qualifying Facilities for SDG&E.

Mark D. Younger
Affidavits and Testimony

- Testimony on behalf of California Cogeneration Council on Pacific Gas & Electric Company 1988 Energy Cost Adjustment Clause (CPUC Applications Nos. 88-04-020 and 88-04-057) on the value of Qualifying Facilities for PG&E (1988, Phases I and II).

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

New York Independent System Operator, Inc.) Docket No. ER19-467-000

COMMENTS OF INDEPENDENT POWER PRODUCERS OF NEW YORK, INC.

On December 3, 2018, the New York Independent System Operator, Inc. ("NYISO") filed proposed revisions to its Market Administration and Control Area Services Tariff ("Services Tariff") and Open Access Transmission Tariff ("OATT") (collectively, the "NYISO Tariffs") with the Federal Energy Regulatory Commission ("Commission")[1] in compliance with the Commission's Order No. 841, *Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators*, which was issued by the Commission on February 15, 2018.[2] The NYISO's proposed revisions to the NYISO Tariffs consist of new and amended market rules to facilitate the participation of Energy Storage Resources ("ESRs") in the NYISO-administered Energy, Ancillary Services, and Installed Capacity ("ICAP") markets.[3]

In its December Filing, the NYISO stated that it is not proposing any substantive changes to its Buyer Side Market Power Mitigation Measures for ICAP (the "BSM Rules"), and, thus, "[t]he current BSM Rules would apply to the entry of new Energy Storage Resources that are

[1] Docket No. ER19-467-000, *N.Y. Indep. Sys. Operator, Inc.*, Compliance Filing (Dec. 3, 2018) (the "December Filing").

[2] *Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Order No. 841, 162 FERC ¶ 61,127 (2018); Docket Nos. RM16-23-000 et al., Errata Notice (Feb. 28, 2018); 83 Fed. Reg. 9580 (Mar. 6, 2018) ("Order No. 841").

[3] Capitalized terms that are not otherwise defined in this filing shall have the meaning specified in the NYISO Tariffs.

larger than 2 MW."[4] The NYISO did propose to reinstate a specific provision of its BSM Rules that would apply certain aspects of such rules to the entry in Mitigated Capacity Zones of new ESRs and other Generators that are 2 MW or less unless otherwise exempt from such rules under the Services Tariff (the "BSM Rules Proposal").[5]

Pursuant to the Commission's Notice of Extension of Time, issued on December 14, 2018, in the above-captioned docket, Independent Power Producers of New York, Inc. ("IPPNY") hereby comments in support of the NYISO's BSM Rules Proposal.[6] The Commission should accept the NYISO's BSM Rules Proposal because it removes uncertainty as to the process for determining Offer Floors and exemptions from Offer Floors under the BSM Rules with respect to Generators that are not required to satisfy a deliverability requirement, which include Generators less than or equal to 2 MW. As the NYISO establishes, this revision is required to reinstate tariff language that the NYISO mistakenly removed in its 2016 tariff filing proposing rules to govern the participation of Behind-the-Meter Net Generation Resources (the "BTM:NG Filing") in the NYISO's markets and is necessary to ensure that the BSM Rules operate as intended.

I. BACKGROUND

A. The BSM Rules

The BSM Rules, which have been in place for more than a decade, are the NYISO's primary tool to ensure that uneconomic ICAP supply that enters the market in the Mitigated Capacity Zones does not artificially suppress ICAP prices to the detriment of the competitive markets and the investors that rely on such markets. To prevent artificial price suppression, the

[4] December Filing at 51.

[5] *Id.* at 51–54.

[6] IPPNY filed a doc-less motion to intervene in this docket on December 14, 2018.

NYISO's Services Tariff sets an Offer Floor on the Unforced Capacity ("UCAP") offers of new Generators entering Mitigated Capacity Zones equal to the lesser of 75% of Mitigated Net Cost of New Entry ("CONE") or the new entrant's own Unit Net CONE. Pursuant to Section 23.4.5.7 of the Services Tariff, offers to supply UCAP from all new ICAP Suppliers in Mitigated Capacity Zones must equal or exceed the applicable Offer Floor unless the ICAP Supplier is eligible for one of the exemptions specified in Section 23.4.5.7.2.

Two of the exemptions apply if the NYISO determines that the new entrant will be economic based on a forecast of future ICAP prices performed under Section 23.4.5.7.2, and a third exemption applies if the new entrant qualifies for the Competitive Entry Exemption pursuant to Section 23.4.5.7.9.[7] The BSM Rules explicitly provide that an Offer Floor applies to UCAP offers from all new Generators unless exempt. The NYISO must evaluate Generators that are "Examined Facilities" to determine whether they are eligible for one of the exemptions listed in the Services Tariff, and if not exempt, the Offer Floor that will apply.

Prior to 2016, Section 23.4.5.7.3 of the Services Tariff defined three specific categories of Examined Facilities. Category I and II facilities included proposed new Generators that are members of a Class Year and that had requested Capacity Resource Interconnection Service ("CRIS") or new or existing Generators that expected to receive CRIS rights from another

[7] The Commission directed the NYISO to implement an exemption for intermittent renewable generators and generators that are self-supplied. *N.Y. Pub. Serv. Comm'n v. N.Y. Indep. Sys. Operator, Inc.*, 153 FERC ¶ 61,022, at PP 51, 62 (2015), *reh'g denied*, 154 FERC ¶ 61,088 (2016). The Commission has not accepted the NYISO's proposed tariff language regarding these exemptions.

Generator.[8] Category III facilities included, in relevant part, "each proposed new Generator that is . . . not subject to a deliverability requirement (and therefore, is not in a Class Year)."[9]

B. The BSM Rules Proposal

As the NYISO explained in its December Filing, it mistakenly removed the reference to Category III facilities from Section 23.4.5.7.3 of the Services Tariff in its BTM:NG Filing.[10] The NYISO stated that it removed Category III facilities as a "housekeeping" revision because the NYISO believed at the time that "it was 'no longer possible for a proposed new project to be a Category III facility.'"[11]

However, as the NYISO established in its December Filing, efforts involving ESRs have caused the NYISO to reassess its conclusions in this regard since the BTM:NG Filing. Specifically, it has become evident that a new Generator 2 MW or less interconnecting in a Mitigated Capacity Zone could be a Category III facility because Generators 2 MW or less are not subject to the deliverability requirement.[12] The NYISO stated that such Generators would not fall within the currently effective definitions of Category I or Category II facilities under the BSM Rules.[13] Therefore, the NYISO stated that its treatment of such Generators 2 MW or less under the BSM Rules would be unclear.[14] The NYISO stated that "there would have been no

[8] Pursuant to the Services Tariff, a Generator must have CRIS rights to qualify as an Installed Capacity Supplier. Pursuant to the OATT, Generators larger than 2 MW must satisfy a deliverability requirement to obtain CRIS. *See* OATT § 25.3.1.

[9] December Filing at 51–53.

[10] *Id.* at 52.

[11] *Id.* (citations omitted).

[12] *Id.* Pursuant to the OATT, Generators 2 MW or less are eligible to obtain CRIS, and therefore eligible to supply UCAP, without having to enter a Class Year and satisfy a deliverability requirement. *See* OATT § 25.3.1.

[13] December Filing at 52.

[14] *Id.*

ambiguity concerning their status prior to the BTM:NG Filing's elimination of Category III."[15] Thus, the NYISO proposed in its December Filing "to return the relevant portion of the Category III language to the tariff" and make other limited additions to the tariff to include relevant and necessary references to Category III facilities.[16]

II. THE COMMISSION SHOULD ACCEPT THE BSM RULES PROPOSAL AS JUST AND REASONABLE

The Services Tariff does not provide, the NYISO has not made a tariff filing intending to provide, and the Commission has not directed the NYISO to propose, an exemption from the imposition of an Offer Floor to new entrants in Mitigated Capacity Zones that are 2 MW or less or are not required to satisfy a deliverability requirement to be eligible to supply ICAP. As the NYISO indicated in its December Filing, its BTM:NG Filing did not intend to exempt Generators 2 MW or less from the imposition of an Offer Floor. There was no discussion whatsoever in the BTM:NG Filing, nor in any of the comments and protests that were filed in response thereto, regarding an exemption for Generators 2 MW or less.[17] Nor did the Commission even mention in its order accepting the NYISO's proposed tariff revisions in its BTM:NG Filing that the effect of removing the Category III language would result in exempting Generators 2 MW or less in Mitigated Capacity Zones from the imposition of an Offer Floor.[18]

The Commission should reject any potential arguments that the NYISO's BTM:NG Filing exempted Generators 2 MW or less from the imposition of an Offer Floor as the currently effective BSM Rules clearly impose an Offer Floor on all new Generators entering Mitigated

[15] *Id.*

[16] *Id.* at 53.

[17] *See generally* Docket No. ER16-1213-000.

[18] *See generally N.Y. Indep. Sys. Operator, Inc.*, 155 FERC ¶ 61,166 (2016).

Capacity Zones, regardless of their size, unless exempt pursuant to the exemptions listed in the Services Tariff. These exemptions are unrelated to Generator size. The BTM:NG Filing merely removed language concerning a category of Examined Facilities mistakenly believed to have been eliminated from the NYISO markets, not whether an Offer Floor applies. As noted above, neither the BTM:NG Filing nor the Commission's order accepting the BTM:NG Filing intended to provide an exemption from imposition of an Offer Floor.

Further, applying an exemption to Generators less than or equal to 2 MW from imposition of an Offer Floor would violate the Commission's order expressly rejecting a request in a complaint filed under Section 206 of the Federal Power Act against the NYISO seeking, *inter alia*, to exempt Generators less than or equal to 20 MW from the BSM Rules.[19] In that order, the Commission ruled that "[t[he proposed 20 MW cut-off would exempt several types of projects that may have the incentive and ability to exercise buyer-side market power to artificially suppress capacity prices . . . ."[20] While the Commission permitted a narrow exemption from the BSM Rules for intermittent renewable resources with low capacity factors, subject to a cap, on the grounds that such "resources have limited capacity factors and are therefore a poor choice to suppress market prices,"[21] the Commission ruled that resources with relatively higher capacity factors that are under 20 MW should not be exempted because they could artificially suppress ICAP prices.[22]

ESRs are not intermittent resources like wind and solar resources with low capacity factors. To the contrary, they are fully controllable and can be dispatched during peak periods.

[19] *N.Y. Pub. Serv. Comm'n et al. v. N.Y. Indep. Sys. Operator, Inc*., 153 FERC ¶ 61,022 (2015), at PP 78–79.

[20] *Id.* at P 78.

[21] *Id.* at P 79.

[22] *Id.*

ESRs, like relatively higher capacity factor gas and oil facilities, are thus capable of artificially suppressing ICAP prices regardless of their size and, therefore, must be subject to Offer Floor mitigation. Thus, IPPNY fully supports the NYISO's proposal to restore to the Services Tariff the Category III language clarifying the NYISO must apply the BSM Rules to determine exemptions and Offer Floors for Generators that are not required to satisfy a deliverability requirement.

During the stakeholder process, certain parties asserted that the NYISO could not include this revision in its Order No. 841 compliance filing because it was beyond the scope of the NYISO's compliance obligation in this proceeding. The NYISO fully reviewed this position and ultimately rejected it as should the Commission if it is raised in this proceeding. As the NYISO stated in its December Filing, it is appropriate and consistent with Commission precedent that the BSM Rules apply to all Generators to ensure consistent and equitable treatment across all generation types.[23]

III. CONCLUSION

As discussed above, the Commission should accept the NYISO's BSM Rules Proposal.

Respectfully submitted,

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Dated: February 7, 2019

[23] December Filing at 51 (citing *N.Y. Indep. Sys. Operator, Inc*., 125 FERC ¶ 61,206 (2008), *reh'g*, 127 FERC ¶ 61,042 (2009)).

CERTIFICATE OF SERVICE

I hereby certify that on this day, I served the foregoing document by electronic mail or first-class mail upon each person designated on the official service list compiled by the Secretary to the Commission in this proceeding.

David B. Johnson
David B. Johnson

Dated: February 7, 2019

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

New York Independent System Operator, Inc.) Docket No. ER19-467-000

MOTION FOR LEAVE TO ANSWER AND ANSWER OF INDEPENDENT POWER PRODUCERS OF NEW YORK, INC.

Pursuant to Rules 212 and 213 of the Federal Energy Regulatory Commission's (the "Commission") Rules of Practice and Procedure,[1] Independent Power Producers of New York, Inc. ("IPPNY") hereby moves for leave to file this answer to the February 7, 2019, protest of the City of New York ("NYC")[2] and the joint protest of the New York State Public Service Commission ("NYPSC") and the New York State Energy Research and Development Authority ("NYSERDA", collectively, the "State Entities")[3] in response to the New York Independent System Operator, Inc.'s ("NYISO") proposed revisions to its Market Administration and Control Area Services Tariff ("Services Tariff") and Open Access Transmission Tariff ("OATT") (collectively, the "NYISO Tariffs") to comply with FERC Order No. 841, filed on December 3, 2018, in the above-captioned docket.[4] IPPNY also moves for leave to file this answer to the

[1] 18 C.F.R. §§ 385.212, 385.213 (2019).

[2] Docket No. ER19-467-000, *N.Y. Indep. Sys. Operator, Inc.*, Protest of the City of New York (Feb. 7, 2019) ("NYC Protest").

[3] Docket No. ER19-467-000, *supra*, Protest and Intervention of the New York State Public Service Commission and the New York State Energy Research and Development Authority (Feb. 7, 2019) ("February 7 Protest").

[4] Docket No. ER19-467-000, *supra*, Compliance Filing (Dec. 3, 2018) (the "December Filing"). The December Filing, which the NYISO filed in compliance with the Commission's Order No. 841, proposed revisions to the NYISO Tariffs that consist of new and amended market rules to facilitate the participation of Energy Storage Resources ("ESRs") in the NYISO-administered Energy, Ancillary Services, and Installed Capacity ("ICAP") markets. *Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Order No. 841, 162 FERC ¶ 61,127 (2018); Docket Nos. RM16-23-000 et al., Errata Notice (Feb. 28, 2018); 83 Fed. Reg. 9580 (Mar. 6, 2018) ("Order No. 841"). Capitalized terms that are not otherwise defined in this filing shall have the meaning specified in the NYISO Tariffs. This pleading represents the

State Entities' motion for leave to answer and answer, filed on February 22, 2019, in the above-captioned docket.[5]

The NYISO's Buyer Side Market Power Mitigation Measures for ICAP (the "BSM Rules") apply to all new Generators in Mitigated Capacity Zones unless the Generator can demonstrate it meets the requirements to secure an exemption. In their February 7 Protest, the State Entities argued, among other things, that the Commission should reject the NYISO's proposal to treat ESRs in the same manner and apply the BSM Rules to all new ESRs.[6] NYC made similar arguments in its Protest.[7] In addition, the State Entities' February 22 Answer attempted to rebut IPPNY's comments, filed on February 7, 2019, which supported the NYISO's proposed tariff revision to clarify its tariff by reinstating a specific provision of its BSM Rules. As established by the NYISO, this revision is necessary to avoid any confusion that the BSM Rules apply to the entry in Mitigated Capacity Zones of all Generators that are 2 MW or less, including ESRs, unless otherwise exempt from such rules under the Services Tariff (the "BSM Rules Proposal").[8]

As discussed below, the Commission should reject NYC's and the State Entities' arguments in their protests and the February 22 Answer opposing the application of the BSM

position of IPPNY as an organization but not necessarily the views of any particular member with respect to any issue.

[5] Docket No. ER19-467-000, *supra*, Motion for Leave to Answer and Answer of the New York State Public Service Commission and the New York State Energy Research and Development Authority (Feb. 22, 2019) (the "February 22 Answer").

[6] February 7 Protest at 2.

[7] NYC Protest at 9-15.

[8] Docket No. ER19-467-000, *supra*, Comments of Independent Power Producers of New York, Inc. (Feb. 7, 2019) ("IPPNY Comments"); *see also* December Filing at 51-55 (establishing clarification is required to "ensure that Market Participants and investors have clear notice of the BSM Rules' applicability to, and possible impact on, an Energy Storage Resource in Mitigated Capacity Zones.").

Rules to ESRs.[9] The NYISO's proposal to apply the BSM Rules to all ESRs is fully consistent with the Commission's orders directing the NYISO and other independent system operators and regional transmission organizations to implement rules that protect markets from artificial price suppression of ICAP prices resulting from subsidized, uneconomic new entry. Indeed, the Commission previously has rejected proposals to grant exemptions for small resources (*e.g.*, 20 MW or less). Nothing has changed since that determination that warrants reversal. In fact, the facts specific to ESRs demonstrate the need for these rules. And the State Entities have failed to demonstrate that ESRs fall within the category of resources that the Commission has determined should be exempt from the BSM Rules.

I. MOTION FOR LEAVE TO ANSWER

IPPNY requests leave to file this Answer because it will help to clarify the issues before the Commission, provide additional information that will assist the Commission, or will otherwise be helpful in the development of the record in this proceeding. Although Rule 213(a)(2) generally prohibits certain types of answers, including answers to protests and answers, the Commission has discretion to waive that prohibition for good cause shown. The basis for such waiver has included whether the answer leads to a more accurate and complete record, helps the Commission understand the issues, clarifies matters in dispute or errors, responds to new issues raised, or provides information that will assist the Commission in its decision-making

[9] Other parties made arguments opposing the NYISO's proposed application of the BSM Rules to ESRs equal to or less than 2 MW. As those arguments are largely the same as the arguments made by the State Entities, for efficiency, IPPNY specifically addresses and cites to only the arguments raised in the State Entities' February 7 Protest and February 22 Answer. IPPNY anticipated and rebutted this point in its Comments and will not repeat those arguments here. IPPNY's silence with respect to other arguments that were made in the State Entities' February 7 Protest and the other protests and answers filed in this docket should not be construed as IPPNY's acquiescence to such arguments.

process.[10] IPPNY's answer corrects misstatements, mischaracterizations and omissions in NYC's and the State Entities' pleadings regarding the NYISO's BSM Rules and associated Commission orders and points to dispositive rulings NYC and the State Entities failed to address and will, therefore, assist the Commission in reaching its decision. If the Commission grants the State Entities' motion requesting leave to file an answer,[11] it should similarly grant IPPNY's request to answer. Accordingly, the Commission should accept IPPNY's answer.

II. ANSWER

A. The NYISO's Proposed Application of the BSM Rules to All ESRs Is Just and Reasonable.

In pleadings that largely mirror each other, NYC and the State Entities argued that application of the BSM Measures to ESRs impedes market entry and participation by ESRs, interferes with state policy objectives and is, therefore, unjust, unreasonable and unduly discriminatory.[12] NYC and the State Entities also contended that ESRs lack the incentive and ability to artificially suppress ICAP prices.[13] Therefore, NYC and the State Entities requested that the Commission reject the NYISO's December Filing and order the NYISO to exempt all ESRs from the BSM Rules. NYC and the State Entities proposed that, if the Commission does not direct such an exemption, it should either exempt all ESRs smaller than 20 MW or exempt all ESRs entering the market (irrespective of their individual size) up to an annual megawatt cap.[14]

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[10] *See, e.g.*, *Mirant Energy Trading et al. v. PJM Interconnection, LLC*, 122 FERC ¶ 61,007 at P 33 (2008); *BP West Coast Prods. LLC et al. v. SFPP, L.P. et al*., 121 FERC ¶ 61,239 at P 34 (2007); *PJM Interconnection, L.L.C.*, 110 FERC ¶ 61,254 at P 13 (2005); *Pinnacle West Energy Corp. v. Nevada Power Co. et al.*, 105 FERC ¶ 61,053 at P 34 (2003); *PJM Interconnection, L.L.C.*, 104 FERC ¶ 61,309 at P 18 (2003).

[11] February 22 Answer at 4.

[12] February 7 Protest at 12-13; NYC Protest at 9-10.

[13] February 7 Protest at 13; NYC Protest at 9-10.

[14] February 7 Protest at 25-26; NYC Protest at 12. The State Entities and other parties also argued that the NYISO failed to justify its proposal to reinstate a specific provision of its BSM Rules, which was previously approved by

Contrary to these claims, application of the BSM Rules to ESRs does not interfere with State policy goals. To the contrary, it is necessary to ensure that these programs are implemented in a manner that will effectively harmonize with the ongoing development of the wholesale markets. Subsidized, uneconomic ESRs, no matter the size, are an effective tool to artificially suppress ICAP prices and must be subject to mitigation under the BSM Rules like all other similarly situated resources.

1. Application of the BSM Rules to ESRs Does Not Interfere with State Policy Goals.

The State Entities asserted that New York laws obligate them to promote ESRs and direct the NYPSC to develop an energy storage deployment policy.[15] The State Entities pointed to the NYPSC's recently adopted statewide ESR deployment goal of up to 3,000 MW by 2030, with an interim deployment target of 1,500 MW by 2025.[16] The State Entities argued that the NYISO's proposal to subject ESRs to mitigation under the BSM Rules would interfere with these goals by making it more difficult for ESRs to participate in the wholesale market.[17]

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the Commission, that would apply certain aspects of such rules to the entry in Mitigated Capacity Zones of new ESRs and other Generators that are 2 MW or less unless otherwise exempt from such rules under the Services Tariff. IPPNY anticipated this argument and demonstrated in its Comments that the current Services Tariff subjects all Generators, including ESRs 2 MW or smaller, to the BSM Rules unless specifically exempted. IPPNY Comments at 5-6. IPPNY further demonstrated that no such exemption exists for ESRs of any size. The Commission should reject the State Entities' argument that the Commission's earlier approval of this provision as just and reasonable "is irrelevant . . . because its judgment of tariff language evolves over time." February 7 Protest at 31. As IPPNY explained, neither the NYISO's BTM:NG Filing nor the Commission's order accepting the BTM:NG Filing provided an exemption from the BSM Rules for resources 2 MW or smaller. IPPNY Comments at 5-6. To suggest that the Commission's order accepting the BTM:NG Filing "reversed" its earlier decision accepting this provision is absurd.

[15] February 7 Protest at 7.

[16] *Id.* (citing Case 18-E-0130, *Energy Storage Goal and Deployment Policy*, Order Establishing Energy Storage Goal and Deployment Policy (Dec. 13, 2018) ("ESR Order"), available at: http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={FDE2C318-277F-4701-B7D6-C70FCE0C6266}).

[17] *Id.* at 18–20.

The State Entities have failed to demonstrate that the BSM Rules are a barrier to the State's ESR policies and goals. The BSM Rules impose no requirements whatsoever on the State with respect to policies promoting certain types of generating technology. With or without the BSM Rules, the State remains free to permit or not to permit new ESRs, or to choose some particular type of facility to further State policy objectives, including the reduction of greenhouse gas emissions. The sole effect of a fair, universal, and even-handed application of the BSM Rules is to ensure the price paid for ICAP remains just and reasonable once these resources enter the market—a matter undisputedly within the Commission's exclusive jurisdiction.

The NYPSC has argued before that the BSM Rules interfere with State energy policies and therefore should not be adopted. In its protest of the NYISO's proposed BSM Rules more than 10 years ago, the NYPSC argued that the Commission should reject the NYISO's proposed BSM Rules for new ICAP supplies "on the basis that they could interfere with New York's standards for resource adequacy and the ability to self-supply ICAP."[18] The NYPSC also argued that BSM Rules "undermine[] the public interest" by "prevent[ing] new resources, which are preferable from a public policy perspective (*e.g.*, increased fuel diversity or improved environmental characteristics), from . . . receiving ICAP payments when excess capacity causes clearing prices to fall below the minimum offer requirement."[19] After carefully considering this argument, the Commission rejected it as an attack on the NYISO's BSM Rules as a whole:

> Because uneconomic entry could produce unjust and unreasonable capacity prices by artificially depressing those prices, and NYISO's proposal provides a reasonable means to deter uneconomic entry in the in-City market, we deny NYPSC's request that the Commission reject the proposed minimum bid requirements for new capacity suppliers. Contrary to NYPSC's claim, we find that granting its request would adversely impact

[18] *N.Y. Indep. Sys. Operator, Inc*., 122 FERC ¶ 61,211, at P 92 (2008).

[19] *Id.*

> matters within the Commission's jurisdiction—in particular, the establishment of just and reasonable wholesale electric energy rates. Adoption of NYPSC's proposal would lead to artificially depressed capacity prices, thus both causing existing generators to be undercompensated and also directly and adversely impacting the Commission's ability to set just and reasonable rates for capacity sales in the in-City market. . . .
>
> The NYISO's offer floor proposal is an integral part of NYISO's proposal, which the Commission is adopting, needed to "promote long-term reliability while neither over-compensating nor undercompensating generators." The issue before us in this proceeding is not how to meet the resource adequacy requirements of New York State, but how prices for capacity in the wholesale markets should be determined in order to remedy identified flaws in the ICAP market. As we have found previously, issues of resource adequacy are important to the Commission in meeting our statutory mandate under the [FPA] to ensure that the rates, terms and conditions of jurisdictional transmission and sales of electric energy are just, reasonable, and not unduly discriminatory, or preferential.
>
> Further, we find that our action in approving NYISO's minimum bid proposal does not adversely affect NYPSC's regulation of resource adequacy in NYC. This new pricing methodology does not prescribe whether or what types of generation facilities should be built, contrary to NYPSC's concerns.[20]

Despite this earlier rejection of the NYPSC's same argument, the State Entities now ask the Commission to reverse its settled position and allow the State a means of distorting the competitive price levels in New York's ICAP markets at will to achieve the State's ESR goals. The Commission should reaffirm its determination in approving the BSM Rules and reject the State Entities' argument. Under the BSM Rules, the State Entities retain the power to pursue whatever lawful initiatives they wish, so long as they, not the market, subsidize any uneconomic designs that may be chosen. If they choose to bear these costs themselves, without distorting

[20] *Id*. at PP 110–112.

prices under the Commission's jurisdiction, they can do so. But they are not entitled to use subsidized entry to distort prices in the Commission's jurisdictional markets.

2. Subsidized, Uneconomic ESRs, No Matter Their Size, Are an Effective Tool to Artificially Suppress ICAP Prices.

The State Entities argued that ESRs lack the incentive and ability to exercise market power to artificially suppress ICAP prices because they are unlikely to benefit from such suppression.[21] They asserted that many ESRs entering the market are likely to be smaller than 20 MW and that, due to volatility in the amount of unsold ICAP in Mitigated Capacity Zones, it will be impossible to know whether a small ESR will be able to suppress ICAP prices.[22] The State Entities asserted that "ESRs do not buy capacity, and thus do not have an incentive to pursue cost savings by suppressing capacity prices" because "lower prices degrade profitability."[23]

As a fundamental matter, these arguments disregard the purpose of the BSM Rules. The BSM Rules are designed to ensure that resources that are otherwise uneconomic *but for* their receipt of out-of-market compensation are not allowed to submit offers into the ICAP market that are below their going forward costs. To do so would artificially suppress ICAP prices for, and potentially cause the premature retirement of, resources that do not receive out-of-market compensation. Neither NYC nor the State Entities provide any evidence to rebut the fundamental design of these rules. In addition, their arguments are fundamentally flawed in several other critical respects.

[21] February 7 Protest at 21.

[22] *Id.* at 20-21.

[23] February 22 Answer at 6.

a. ESR Programs Provide the Opportunity to Suppress Prices.

The crucial flaw in the State Entities' argument is that it ignores the ability of a small, subsidized ESR to be combined with many other small ESRs that are subsidized with out-of-market compensation thereby artificially suppressing ICAP market prices materially. The issue is not the size of the individual resource but rather the aggregate impact of many individual subsidized resources. It is irrelevant whether the entry is the result of one subsidized 3,000 MW resource, 30 one-hundred MW resources or 3,000 one MW resources. The result is still 3,000 MW of subsidized uneconomic entry. As IPPNY established in its Comments, the Commission rejected the NYPSC's request in a complaint filed under Section 206 of the Federal Power Act against the NYISO, inter alia, to exempt Generators 20 MW or smaller from the BSM Rules for this very reason.[24] In that order, the Commission found "that the cumulative effect of several 20 MW units at a single station could have a significant impact on ICAP market prices."[25] Applying an exemption to ESRs smaller than 20 MW would contravene the Commission's order expressly rejecting this request.

As noted above, the NYPSC in its ESR Order set a goal of encouraging the deployment of 1,500 MW of energy storage by 2025 and 3,000 MW by 2030. To achieve these levels, it is important to note that the NYPSC, in part, ordered each of the state's investor owned utilities ("IOUs") to hold competitive procurements for ESRs to procure a minimum amount of storage to be operational by December 31, 2022.[26] The NYPSC required Consolidated Edison Company of New York, Inc. ("Con Edison"), the IOU that serves the Zone J Mitigated Capacity Zone, to

[24] *N.Y. Pub. Serv. Comm'n et al. v. N.Y. Indep. Sys. Operator, Inc*., 153 FERC ¶ 61,022, at PP 78–79 (2015).

[25] *Id.* at P 79.

[26] ESR Order at 53.

procure dispatch and scheduling rights through contracts with at least 300 MW of ESRs located in its service territory and each of the other IOUs to procure such service from at least 10 MW each in their respective service territories.[27] The NYPSC directed that the bids shall not exceed a utility-specific defined ceiling but did not publish the ceiling due to the competitive nature of the solicitations.[28] Con Edison will recover its contract costs from all of its delivery customers through cost-of-service ratemaking, meaning such costs are non-bypassable and it will receive a return of and on such costs, net of the wholesale market revenues Con Edison earns from the NYISO markets by offering the ESRs' output into the NYISO's Energy, Ancillary Services and ICAP markets.[29]

Importantly, the NYPSC required that the IOUs "request bids for contracts for up to seven years, during which the utility will have *full dispatch rights* to the assets" to procure a combination of the following: "(1) local reliability services; (2) local load relief; (3) local environmental benefits derived by reducing use of peaking units for contingency purposes; and, (4) wholesale services (*e.g.* capacity, spinning reserves, frequency regulation)."[30] As the IOUs will control the scheduling and dispatch of the ESRs, Con Edison has the same ability to exercise buyer-side market power whether it contracts with one 300 MW ESR, 30 ten MW ESRs or builds an entirely new generation facility. The impact of a total of 300 MW of uneconomic entry into NYC is substantial. It would reduce capacity clearing prices by 1.87/kW-month in Zones G-

[27] *Id.* at 55.

[28] *Id.* at 55 & n.49.

[29] Case 18-E-0130, *supra*, Implementation Plan of Consolidated Edison Company of New York, Inc. and Orange and Rockland Utilities, Inc. for a Competitive Direct Procurement of Scheduling and Dispatch Rights from Qualified Energy Storage Systems (Feb. 11, 2019) at 12-13, available at: http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={516A0B55-DF3D-4807-8256-1DAACCFD6186}.

[30] ESR Order at 54 (emphasis added).

J and 3.17/kW-month in Zone J based on the current Demand Curve levels.[31] This calculation assumes that the entrants are ESRs capable of injecting power for only 4 hours per charge cycle. If they were able to inject power for 8 hours per charge cycle, they would qualify for a full capacity payment under the NYISO's proposed valuation for ESRs, and the result would be a reduction of 2.49/kW-month in Zones G-J and 4.23/kW-month in Zone J.[32]

In addition, NYC and the State Entities conveniently omitted from their arguments in their protests that the NYPSC authorized a $310 million "market acceleration bridge incentive" which is intended to "accelerate the cost decline curve by almost two years and save approximately $200 million from the projected cost of deploying 1,500 MW of energy storage by 2025, and more than $400 million from the projected cost of deploying 3,000 MW by 2030."[33] The NYPSC stated in its ESR Order that:

> A bridge incentive is a proven approach, successfully applied in NY-Sun, that provides revenue certainty to the market for a defined duration and level of deployment. Such an approach provides that funding at levels of "missing money" to enable markets to work in the near term, and tapers this level of missing money predictably and transparently so as costs decline and values improve, to arrive at a point of cost reduction and economic

[31] This was calculated using the same methodology employed by the State Entities. The Demand Curves are available at https://www nyiso.com/documents/20142/2953344/Demand-Curve2019-2020.pdf/fbe06a61-0578-d056-5c78-dfab5b9ae74b. Based on the current Demand Curves, each 1 MW change in supply changes the price of capacity by $0.0141/kW-month and $0.0083/kW-month in Zone J and Zones G-J, respectively. The indicated impacts were estimated as follows: (a) for Zones G-J, ($0.0083/kW month per MW)*(300 MW ESR)*(0.75 partial capacity value) = $1.87/kW-month; (b) for Zone J, ($0.0141/kW-month)*(300 MW ESR)*(0.75 partial capacity value) = $3.17/kW-month.

[32] The NYISO is currently reviewing rule changes with its Market Participants to value capacity resources with tariff revisions expected to be submitted to the Commission in the near term. The NYISO is proposing that capacity resources must be capable of providing service for eight hours to reliably operate the New York system. Zachary T. Smith, *Expanding Capacity Eligibility*, NYISO (Jan. 22, 2019), at 13, https://www.nyiso.com/documents/20142/4582875/Expanding%20Capacity%20Eligibility.pdf/b5923eb9-aa87-ed0f-1b2f-7600c2e4016c ("Smith Presentation").

[33] ESR Order at 65.

> deployment where incentives are no longer needed or appropriate.[34]

The NYSERDA program is expected to expend roughly $350 million and bring approximately 500 MW of additional ESRs onto the system.[35] The NYPSC's policy providing for seven-year contracts with IOUs and the "missing money" through its market acceleration bridge incentive for ESRs that cannot earn adequate revenues from the market is exactly the type of out-of-market subsidy that the BSM Rules are designed to mitigate.

Thus, the State Entities' are incorrect to assert that small ESRs will have only a *de minimis* impact on ICAP prices in the Mitigated Capacity Zones.[36] Further, as indicated in the ESR Order, one of the NYPSC's policies is to reduce the use of fossil peaking facilities by using ESRs. The NYPSC ordered its staff to perform a study which includes, among other things, a determination of "how many MWs of peaking units could be replaced or repowered economically with energy storage at varying durations without threatening reliability."[37] As such, ESRs participating in the NYISO's ICAP market are directly competing with fossil peaking facilities. It would be discriminatory, unjust and unreasonable to exempt ESRs from the BSM Rules while imposing such rules on fossil peaking facilities.[38]

[34] *Id.* at 62.

[35] *Id*. at 66. NYSERDA obtained a filing extension so the parameters of its implementation plan are not yet known.

[36] February 22 Answer at 7.

[37] ESR Order at 90.

[38] That ESRs are like peaking facilities is demonstrated by a recent application filed with the NYPSC for a certificate to construct a 316 MW ESR project which is intended to replace 316 MW of fossil peaking plants on the same site. Case 19-E-0122, *Ravenswood Development, LLC*, Petition for an Order Granting a Certificate of Public Convenience and Necessity and Establishing a Lightened Regulatory Regime (Feb. 21, 2019), available at: http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={1F6E91EA-70B8-4C7D-B1E7-6E286898DC71}.

b. The Competitive Entry Exemption Provides ESRs With an Effective Mechanism to Obtain an Exemption Where Warranted.

NYC and the State Entities failed to recognize the significance of the ability of a new entrant to receive a competitive entry exemption ("CEE") from the BSM Rules. Under the CEE, any new entrant that does not receive support for its project, directly or indirectly, from either a New York State governmental entity or a NYPSC-regulated transmission and distribution utility is exempt from application of the BSM Rules. As the CEE exempts all projects that do not have such support, and the BSM Rules exempt projects that pass the Mitigation Exemption Test ("MET") and thus are economic, the obvious result of the State Entities' requested exemption is to limit the NYISO's ability to impose offer-floor mitigation on State- or utility-subsidized, uneconomic new entry of ESRs.[39] As explicitly recognized by the Commission in its order directing the NYISO to implement the CEE, however, this is exactly the type of new entry that should trigger the highest level of scrutiny to protect the market and market participants that rely on it against buyer-side market power whether intended or not.[40]

c. Resources Receiving Out of Market Support Should Be Subject to Mitigation Regardless of Intent

The State Entities' argument also disregards Commission rulings that "resources receiving out-of-market support are capable of suppressing market prices, regardless of intent."[41]

[39] The State Entities argued that application of the BSM Rules to small ESRs would "entangle those resources in the Class Year Process" because ESRs would not be able to obtain their mitigation determinations and enter the market until the Class Year process is concluded. February 7 Protest at 24. As resources 2 MW or less are not subject to the Class Year process to obtain Capacity Resource Interconnection Service, IPPNY does not object to the NYISO Services tariff being revised to provide that projects 2 MW or smaller be eligible to receiving a CEE before the completion of the Class Year process. However, it would be discriminatory to completely exempt small ESRs from the BSM Rules because of potential delays in the Class Year process when all other similarly situated resources are subject to the BSM Rules and must wait for the completion of the Class Year process to obtain their MET determinations.

[40] *Consol. Edison Co. of N.Y., Inc. et al. v. N.Y. Indep. Sys. Operator, Inc*., 150 FERC ¶ 61,139, at PP 2, 64 (2015).

[41] *Calpine Corp. v. PJM Interconnection, L.L.C.*, 163 FERC ¶ 61,236, at P 155 (2018) (citation omitted).

In its order last year determining that PJM's tariff is unjust and unreasonable and unduly discriminatory because its Minimum Offer Price Floor ("MOPR") is limited to new natural gas-fired resources, the Commission ruled that PJM's tariff:

> fails to protect the integrity of competition in the wholesale capacity market against unreasonable price distortions and cost shifts caused by out-of-market support to keep existing uneconomic resources in operation, or to support the uneconomic entry of new resources, regardless of the generation type or quantity of the resources supported by such out-of-market support.[42]

The Commission ruled that:

> Price suppression stemming from state choices to support certain resources or resource types is indistinguishable from that triggered through the exercise of buyer-side market power. Under these circumstances, we no longer can assume that there is any substantive difference among the types of resources participating in PJM's capacity market with the benefit of out-of-market support.[43]

In reaching its determination, the Commission pointed to the programs enacted in a number of PJM states that provide or require out-of-market support for thousands of megawatts of nuclear, solar, and wind resources and ruled mechanisms were required to address their impacts on the competitive markets.[44]

d. Past Commission Determinations Focused on the Nature of Intermittent Resources and their Associated Low Capacity Values, Not Low Capacity Factors.

Finally, as IPPNY anticipated in its Comments, the State Entities argued in their February 22 Answer that ESRs have lower capacity factors than the intermittent wind and solar resources

[42] *Id.* at P 150.

[43] *Id.* at P 155.

[44] *Id.* at P 151-152. Review of the mechanisms to be implemented in the PJM market remains pending before the Commission at this time.

that the Commission determined should be exempt from the BSM Rules, up to a MW cap, in its order addressing the NYPSC complaint in 2015.[45] The State Entities implied that, because ESRs have low capacity factors, they should be similarly exempt from the BSM Rules. However, the State Entities have sought to extract one aspect of the Commission's holding to the exclusion of other relevant aspects. Specifically, the State Entities disregarded the crucial part of the Commission's order which provided that only *intermittent* resources with low capacity factors are eligible for the exemption.[46] The Commission determined that intermittent renewable resources with low capacity factors and high development costs have little or no incentive and ability to exercise buyer-side market power.[47] This is because an intermittent resource does not have the capability to reliably operate its facility to provide energy during peak periods when energy is most valuable.

The State Entities also mischaracterized the Commission's reference to low capacity factor in its NYPSC Complaint Order. The Commission's use of the term low capacity factor in that order referenced the NYPSC's complaint that intermittent resources have a low capacity contribution, *i.e.*, a low value in the capacity market relative to the MW size of the facility.[48] For example, a 100 MW, land-based wind facility would only be permitted to sell 20 MW of capacity.

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[45] February 22 Answer at 9-10.

[46] *N.Y. Pub. Serv. Comm'n et al. v. N.Y. Indep. Sys. Operator, Inc*., 153 FERC ¶ 61,022, at P 47 (2015) ("NYPSC Complaint Order").

[47] *Id.*

[48] *Id.* at P 40 (citing Docket No. EL15-64-000, *N.Y. Pub. Serv. Comm'n et al. v. N.Y. Indep. Sys. Operator, Inc.*, Complaint (May 8, 2015), at 19-20, 24-25 ("NYPSC Complaint"), Affidavit of Thomas S. Paynter at 18:1-5 (attached as Exhibit A to the NYPSC Complaint). The complaint stated that "renewable resources usually operate intermittently, resulting in a lower than average contribution to meeting capacity requirements, making it even more unlikely that a buyer could use such a resource to drive down the capacity market price sufficient to recover the substantial development costs." NYPSC Complaint at 25 (citing Affidavit of Thomas S. Paynter, at 19:1–5 (attached as Exhibit A to the NYPSC Complaint)).

It is the amount of capacity that the resource would qualify to offer that thus determines whether the resource can be used effectively to suppress prices. While intermittent resources generally have a low capacity value, ESRs are expected to have a relatively high capacity value. Under the NYISO's proposal, an ESR that can sustain injection for 4 hours would be able to have up to 75% of the capacity value of a resource without limitations in its duration of operations, and an ESR that can sustain injection for 8 hours would have up to 100% of the capacity value of a resource without limitations in its duration of operations.[49] For example, a 100 MW ESR with a 4-hour duration would be permitted to sell 75 MW of capacity (as compared to a 100 MW fossil-generator which would be able to sell 100 MW without taking derating into account), and a 100 MW ESR with an 8-hour duration would be permitted to sell 100 MW of capacity. An installed MW of ESR would clearly be expected to have a much bigger impact on suppressing capacity prices than an installed MW of intermittent generation.

Indeed, based on the State Entities' faulty reasoning, fossil peaking plants, which, like ESRs, have low capacity factors but high capacity values, should also be exempt from the BSM Rules. This is absurd. As discussed above and in IPPNY's Comments, ESRs are not intermittent resources like wind and solar resources with low capacity values as they are fully controllable and can be dispatched during peak periods.[50] ESRs as a resource type, like fossil peaking facilities, are thus capable of artificially suppressing ICAP prices regardless of their individual size and, therefore, must be subject to the BSM Rules.

[49] *See* Smith Presentation at 13.

[50] IPPNY Comments at 6.

Thus, for these reasons, the Commission should reject NYC's and the State Entities' alternative request to order the NYISO to exempt ESRs smaller than 20 MW or provide an exemption for ESRs entering the market up to an annual megawatt cap.

III. CONCLUSION

WHEREFORE, for the foregoing reasons, IPPNY respectfully requests that the Commission grant its motion for leave to answer in the above-captioned proceeding, reject NYC's arguments in its Protest, reject the State Entities' arguments in both their February 7 Protest and February 22 Answer opposing the application of the BSM Rules to ESRs, and accept the NYISO's BSM Rules Proposal in its entirety.

Respectfully submitted,

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Dated: February 27, 2019

CERTIFICATE OF SERVICE

I hereby certify that on this day, I served the foregoing document by electronic mail or first-class mail upon each person designated on the official service list compiled by the Secretary to the Commission in this proceeding.

David B. Johnson
David B. Johnson

Dated: February 27, 2019