

Attachment I

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

New York Independent System Operator, Inc. Docket No. ER26-1431-000

AFFIDAVIT OF YAN HUANG

Ms. Yan Huang declares:

1. I have personal knowledge of the facts and opinions herein and if called to testify could and would testify competently hereto.
2. The purpose of this affidavit is to provide further support for the New York Independent System Operator, Inc.’s (“NYISO”) proposal to require holders of Unforced Capacity Deliverability Rights (“UDRs”) and External-to-Rest of State Deliverability Rights (“EDRs”) to submit two distinct seasonal elections for the upcoming Capability Year, one for the Summer Capability Period and one for the Winter Capability Period, with an accompanying must offer requirement.¹ This affidavit provides (i) a description of the resource adequacy model that the New York State Reliability Council, L.L.C. (“NYSRC”) uses in its technical study to inform establishment of the annual New York Control Area (“NYCA”) Installed Reserve Margin (“IRM”) (“IRM study”) and that the NYISO uses in its annual Locational Minimum Installed Capacity Requirement (“LCR”) study, (ii) a description of the manner in which elections made by holders of UDRs and EDRs are accounted for in parameters for administering the Installed Capacity (“ICAP”) market, (iii) an explanation of the potential misalignment between the resource adequacy modeling of the UDR and EDR rights holders’ seasonal elections and actual supply conditions addressed by the proposed must offer requirement, and (iv) the reasons that correcting this misalignment outweighs alleged adverse impacts raised in the protest submitted by H.Q. Energy Services (U.S.) Inc. (“HQUS”) in the above-referenced proceeding.²

I. Qualifications

3. My name is Yan Huang. I am currently the Senior Manager, Installed Capacity Market Operations for the NYISO. My business address is 10 Krey Boulevard, Rensselaer, New York 12144. In this position, I am directly responsible for overseeing the development of minimum capacity procurement requirements (“minimum capacity requirements”) for the NYCA, each Locality, and each Transmission District as well as the administration of the

¹ Capitalized terms not otherwise defined herein shall have the meaning specified in the NYISO Market Administration and Control Area Services Tariff (“Services Tariff”).

² HQUS March 11, 2026 Protest, Docket No. ER26-1431-000 (“HQUS Protest”).

ICAP market auctions (i.e., the Capability Period Auctions, the Monthly Auctions and the ICAP Spot Market Auctions) conducted by the NYISO.

4. I joined the NYISO's Market Operations department as a Senior Specialist in Installed Capacity Market Operations in 2020 and was promoted to Manager of Resource Adequacy in the Market Operations department in 2022. In both roles, my primary focus was establishing minimum capacity requirements and evolving the NYISO's resource adequacy model to capture emerging reliability risks in the NYCA. Specifically, I assisted with developing a resource adequacy modeling improvement strategic plan and led the efforts to develop and implement various modeling enhancements, including a new Energy Limited Resources model, an enhanced dynamic external area emergency assistant model, and the introduction of a winter fuel availability constraints model.
5. Prior to joining the NYISO, I worked in the electricity sector in Ontario, Canada for 13 years. During that time, I held positions at Hydro One Inc., an electricity transmission and distribution utility; Ontario Power Authority, an independent, non-profit corporation created to oversee Ontario's long-term electricity planning and resource management; and the Independent Electricity System Operator (IESO), responsible for managing Ontario's electricity system. My experience covered a wide range of issues, including electricity conservation program design and delivery, renewable generation procurement, transmission system planning, and capacity market design.
6. I received a Master in Business Administration from Brock University in Canada and a Bachelor of Arts from Guangdong University of Foreign Studies in China.

II. Background

7. The two tenets of power system reliability are resource adequacy and transmission security. Resource adequacy is "the ability of the electric system to supply the aggregate electrical demand and energy requirements of the customers at all times, taking into account scheduled and reasonably expected unscheduled outages of system elements."³ Transmission security is "the ability of the electric system to withstand disturbances such as electric short circuits or unanticipated loss of system elements."⁴
8. The ICAP market is designed to maintain resource adequacy through the availability of sufficient generating capacity available to supply energy needs while providing adequate operating reserves. The product bought and sold in the ICAP market is called Unforced Capacity ("UCAP"). UCAP represents the amount of ICAP that is available at a particular time, adjusted for periods when a resource is not available due to a forced outage or other limitations on a resource's operating capability.
9. Resource adequacy in New York State is maintained through a series of related processes administered by the NYSRC and the NYISO. Annually, the NYSRC conducts a rigorous study to inform its establishment of an IRM for the upcoming Capability Year. The IRM

³ See NYSRC Reliability Rules & Compliance Manual, § 3.2, <https://nysrc.org/wp-content/uploads/2023/07/RRC-Manual-V46-final.pdf>.

⁴ *Id.*

represents an additional quantity of capacity that must be procured above the NYISO's forecasted peak load to meet the NYSRC-established resource adequacy criterion of a loss of load expectation ("LOLE") no greater than 0.1 loss of load event days per year.

10. The IRM and the associated study serve as foundational inputs to the NYISO's administration of its ICAP market. More specifically, the NYISO's forecasted peak load, plus the additional capacity required to meet the IRM, establish the minimum capacity requirements for the NYCA. These inputs also serve as the starting point for deriving various other ICAP market parameters, including LCRs for certain transmission-constrained areas (i.e., Localities), Load Serving Entity ("LSE") minimum capacity requirements, and the translation of the ICAP Demand Curves to UCAP terms. Notably, because the NYCA forecasted peak load has historically occurred in the summer period, the minimum capacity requirements have reflected summer peak conditions. In recognition of the ongoing changes to New York's electric grid and system reliability risk profile, the NYISO implemented seasonal ICAP Demand Curves, starting with the 2025-2026 Capability Year.⁵ In this proceeding, the NYISO has proposed further enhancements to better account for seasonal differences through the establishment of discrete seasonal minimum capacity requirements and corollary supporting adjustments including seasonal elections for UDRs and EDRs that are subject to a must offer requirement.

III. Description of the NYISO Resource Adequacy Model Used in the IRM Study and LCR Study and Its Relationship to NYISO ICAP Market Parameters

a. IRM Study Model

11. Annually, the NYISO conducts a probabilistic assessment of resource adequacy for the upcoming Capability Year, which the NYSRC uses to inform its establishment of the IRM. The NYISO uses the GE Multi-Area Reliability Simulation software program ("MARS"), which uses a full sequential Monte Carlo simulation, to perform a chronological simulation of the NYCA system—comparing the hourly load demand to the total available generation in the NYCA—adjusted to account for outages and derates.⁶ The model captures assumptions for the NYCA system, including the annual load forecast developed by the NYISO (including consideration of forecast uncertainties), generation capability and performance, system topology and limitations, firm external transactions, and available emergency operating procedures. The model also includes neighboring Control Areas and their interconnection capability primarily for reflecting the availability of emergency assistance⁷ to support the NYCA in meeting its resource

⁵ See *N.Y. Indep. Sys. Operator, Inc.*, Docket No. ER24-701-000 (Feb. 15, 2024) (delegated order) (accepting revisions to the calculation of the reference point price and maximum allowable clearing price of the ICAP Demand Curves to account for seasonal reliability risks).

⁶ See <https://www.governova.com/consulting/planos/resource-adequacy>.

⁷ Emergency assistance refers to the capacity a neighboring Control Area may have and can flow over the facilities when the NYCA system is experiencing an Emergency (i.e., "[a]ny abnormal system condition that requires immediate automatic or manual action to prevent or limit loss of transmission facilities or Generators that could adversely affect the reliability of an electric system"). See NYISO Open Access Transmission Tariff, § 1.5 (Definitions – E).

adequacy criterion. The MARS representation of the neighboring Control Areas consists of four interconnected External Control Areas that are contiguous with the NYCA: PJM Interconnection (“PJM”) and the Northeast Power Coordinating Council (“NPCC”) members ISO New England (“ISO-NE”), Ontario IESO (“Ontario”), and Hydro-Quebec.⁸

12. After establishing the study model reflecting the assumed NYCA system conditions, capacity is either added to or removed from zones west of the Total East Interface that have excess capacity reserves so that the statewide capacity to peak load ratio equals a desired study reserve margin point. A portion of this capacity is added to or removed from such zones throughout the year in order to establish the IRM that meets the NYSRC-established resource adequacy criterion of 0.1 LOLE per year.⁹ Based on current and historically persistent system conditions, capacity is removed from these zones to meet the annual 0.1 LOLE criterion.

- i. **Modeling Winter Reliability Risks**

13. The ICAP market has historically been designed around summer peak demand; however, increasing winter reliability risks driven primarily by electrification and fuel security concerns have brought increased attention to the seasonal structure of the ICAP market. For example, Winter Storm Elliot and subsequent cold weather operating periods have highlighted the NYCA system vulnerabilities with the dependence on non-firm gas supplies to support electric generation. Unlike summer peaks, winter reliability risks often stem from fuel supply constraints, resource and facility outages, and extreme cold weather events. The NYCA is expected to become a winter peaking system in the late 2030s.¹⁰
14. Due to emerging winter reliability risks, starting with the 2026-2027 Capability Year, the NYSRC enhanced the IRM study to include winter fuel availability constraints modeling.¹¹ This modeling represents varying resource capacities that are constrained during different winter conditions.¹² The objective of the winter fuel availability constraints modeling is to account for fuel availability constraints potentially impacting

⁸ See NYSRC, 2026-2027 IRM Technical Study Report, § 5.4, <https://www.nysrc.org/wp-content/uploads/2025/11/Technical-Study-Report-clean.pdf> (“2026-2027 IRM Technical Study Report”).

⁹ See NYSRC Policy No. 5-19, Appendix A (describing the methodology and procedure for adding or removing capacity from each zones to develop the IRM), <https://www.nysrc.org/wp-content/uploads/2025/06/NYSRC-Draft-Policy-5-19-Final-6-13-2025.pdf> (“NYSRC Policy No. 5-19”).

¹⁰ See NYISO, 2025 Load & Capacity Data Report, at 17, <https://www.nyiso.com/documents/20142/2226333/2025-Gold-Book-Public.pdf>.

¹¹ NYSRC Policy No. 5-19, § 3.5.2.

¹² Gas Constraints Modeling Whitepaper (approved at June 14, 2025 NYSRC Executive Committee meeting), <https://www.nysrc.org/wp-content/uploads/2024/06/Gas-Constraints-Modeling-Whitepaper-Final.pdf>; Winter Fuel Availability Constraint Model Whitepaper - Phase 2 (approved at Nov. 14, 2025 NYSRC Executive Committee meeting), <https://www.nysrc.org/wp-content/uploads/2026/02/Winter-Fuel-Availability-Constraints-Modeling-Whitepaper-Phase-2-11-14-2025-approval.pdf> (“Winter Fuel Availability Constraint Model Whitepaper Phase 2”).

the availability of thermal generating units in Load Zones F-K during peak winter periods (December-February).¹³

15. Historically, the IRM study has shown that all loss of load risks occurred during the summer season. With the adoption of the winter fuel availability constraints model, loss of load risks during the winter season were identified for the first time in the 2026-2027 IRM study, particularly during the peak winter periods (December-February).¹⁴

ii. Modeling of UDRs and EDRs

16. The MARS model incorporates several types of resource capacity used to serve Load in the NYCA, including UDRs and EDRs.¹⁵
17. UDRs are capacity rights that allow the holder/owner to receive the locational capacity benefit derived from the addition of a new incremental controllable transmission project that provides a transmission interface to a Locality.¹⁶ The holder of UDRs has the option, on an annual basis, to elect the MW quantity of the UDR (ICAP) it plans on utilizing for capacity contracts over its controllable line.¹⁷ The capacity supplied using UDRs (i.e., the elected MW quantity) is typically modeled as a firm capacity import. Any remaining capability on the transmission line associated with the UDR can be used to support emergency assistance, which may reduce the IRM and minimum capacity requirements. This annual election informs how UDR transfer capability will be represented in the MARS model. The IRM modeling accounts for both the availability of the Resource that is identified for each UDR as well as the availability of the UDR facility itself.¹⁸ The amount of emergency assistance allowed to flow through each of the UDR lines in the MARS simulation is also subject to the overall emergency assistance limit established by the NYSRC.¹⁹
18. EDRs are capacity rights, as measured in megawatts, that are associated with certain new incremental transmission projects that increase transfer capability over an existing transmission interface between the Rest of State region of the NYCA and an External Control Area.²⁰ Consistent with UDRs, the holder/owner of the EDR facility also has the option on an annual basis of selecting the MW quantity it plans on utilizing for capacity

¹³ Winter Fuel Availability Constraint Model Whitepaper Phase 2 at 1.

¹⁴ See NYISO, *2026-2027 IRM Study Special Sensitivities* (presented at Sept. 3, 2025 NYSRC Installed Capacity Subcommittee meeting), at Slide 4, <https://www.nysrc.org/wp-content/uploads/2025/08/2026-2027-IRM-Special-Sensitivities-09032025-ICS.pdf>.

¹⁵ NYSRC Policy No. 5-19, § 3.5.2.

¹⁶ *Id.*

¹⁷ In this filing, the NYISO has proposed language in Services Tariff Section 5.12.2.5 regarding this process.

¹⁸ 2026-2027 IRM Technical Study Report, § 5.2.6.

¹⁹ EOP Review Whitepaper, https://www.nysrc.org/wp-content/uploads/2023/10/EOP-Review-Whitepaper-Report_FINAL_For_Posting.pdf. See also NYSRC Policy No. 5-19.

²⁰ See NYSRC Policy No. 5-19, § 3.5.2.

contracts over facility.²¹ Such elected MW count towards meeting the NYCA minimum capacity requirements, with any remaining capability on the facility used to support emergency assistance.²²

19. The modeling assumptions for emergency assistance (including consideration of any returned UDRs and EDRs) are determined by the NYSRC in its establishment of the appropriate assumptions for each IRM study. These study assumptions are then carried forward into the NYISO's LCR study.
20. Starting with the 2026-2027 Capability Year, the IRM model included the modeling of the UDRs awarded to the Champlain Hudson Power Express project ("CHPE"). For the 2026-2027 IRM study, due to the lack of historical operating data and tight winter operating margins in Hydro Quebec, the NYSRC modeled the CHPE UDRs with a 0 MW transfer capability assumption during the winter months to align with expected operating conditions and available emergency assistance across all Hydro Quebec interfaces (Chateauguay-Massena, Cedars-Dennison, and CHPE) during the winter months (November – April).²³
21. The 2026-2027 IRM study indicates a notable shift in the seasonal distribution of reliability risk toward winter. In fact, the study identified that about 14.0% of loss of load risk occurred in winter, compared to 0% in the 2025-2026 IRM study.²⁴ Two key modeling changes contributed to this shift: (1) the inclusion of winter fuel availability constraints and (2) the inclusion of CHPE modeling assumptions. The introduction of winter fuel availability constraints modeling results in the derating of fossil-fired thermal units in Load Zones F-K during winter peak periods to account for potential limitations on natural gas and/or oil fuel availability. The introduction of the winter fuel availability constraints modeling leads to loss of load risk occurring in the peak winter months of December, January and February.²⁵ The addition of the CHPE project does not increase total reliability risk but shifts its seasonal allocation. Because CHPE is modeled in the 2026-2027 IRM study as a summer-only resource, it only improves summer risk and when capacity is removed annually to achieve the 0.1 LOLE criteria, available winter

²¹ In this filing, the NYISO has proposed language in Services Tariff Section 5.12.2.5 regarding this process.

²² NYSRC Policy No. 5-19, § 3.5.2.

²³ See NYISO, *Champlain Hudson Power Express (CHPE): 2026-2027 IRM Study Modeling Assumptions* (presented at June 4, 2025 NYSRC Installed Capacity Subcommittee meeting), at Slide 9 (describing CHPE winter availability considerations) and Slide 12 (describing HQ emergency assistance considerations), <https://www.nysrc.org/wp-content/uploads/2025/05/CHPE-Modeling-Assumptions-06042025-ICS.pdf>; see also 2026-2027 IRM Technical Study Report, § 5.2.6.

²⁴ 2026-2027 IRM Technical Study Report, § 5.6. See NYISO, *2026-2027 IRM Study Special Sensitivities* (presented at Sept. 3, 2025 NYSRC Installed Capacity Subcommittee meeting) (describing interaction between winter fuel availability constraints and CHPE on 2026-2027 preliminary base case), <https://www.nysrc.org/wp-content/uploads/2025/08/2026-2027-IRM-Special-Sensitivities-09032025-ICS.pdf>

²⁵ 2026-2027 IRM Technical Study Report, § 5.6. See NYSRC 2026-2027 IRM Technical Study Report Appendices, Table B.5, <https://www.nysrc.org/wp-content/uploads/2025/12/2026-IRM-Study-Technical-Report-Appendices.pdf> ("2026-2027 IRM Technical Study Report Appendices").

capacity in the IRM study model is reduced resulting in a higher share of LOLE events occurring in winter.

iii. External Control Area Load and Capacity Models

22. Maintaining reliability of NYCA includes consideration of emergency assistance from the External Control Areas.²⁶ The load and capacity models for PJM, ISO-NE, Ontario, and Hydro-Quebec are based on data received directly from these External Control Areas, as well as the modeling assumptions from the MARS database used in NPCC studies.
23. For the IRM studies, the development of appropriate load and capacity models for the External Control Areas seeks to avoid overdependence by the NYCA on the External Control Areas for emergency capacity support.²⁷ For this reason, a limit is placed on the amount of emergency assistance relied upon by the NYCA in maintaining resource adequacy. Along with considering other factors, the NYSRC currently establishes these limits primarily based on consideration of the amount of ten-minute reserves that are assumed to be available in an External Control Area above its required reserve level. Emergency assistance assumptions are reviewed annually by the NYSRC and refined over time. For example, the NYSRC implemented more dynamic modeling of emergency assistance to better align with evolving grid conditions.²⁸
24. Once the IRM and LCRs are set for the Capability Year, the NYISO conducts a separate study utilizing the LCR study case to evaluate whether additional capacity import rights, in addition to the already modeled firm capacity imports via the UDRs and EDRs, may be made available to external resources while preserving the necessary amount of emergency assistance available over the inter-control area ties to maintain the IRM and corresponding LOLE.

b. LCR Study Model

25. LCRs require LSEs serving customers within a Locality to procure a portion of their capacity purchase obligations from capacity supply resources electrically located within such Locality (including capacity supplied by UDRs that sink in each Locality).²⁹ These locational requirements (1) recognize limitations on the system's ability to flow power from less constrained areas into the Localities and (2) seek to safeguard that meeting the minimum capacity requirements does not result in reliance on power flows in excess of Locality-specific transmission security constraints. There are currently three Localities located in the southeastern/downstate region of New York: (1) the G-J Locality (i.e., Load Zones G, H, I, and J); (2) New York City (i.e., Load Zone J); and (3) Long Island (i.e., Load Zone K). As described in Services Tariff Section 5.11.4, among other

²⁶ NYSRC Policy 5-19, § 3.5.6.

²⁷ *Id.*

²⁸ EOP Review Whitepaper, https://www.nysrc.org/wp-content/uploads/2023/10/EOP-Review-Whitepaper-Report_FINAL_For_Posting.pdf. See also NYSRC Policy No. 5-19.

²⁹ See Services Tariff, §§ 2.12 (Definitions – L), 5.11.4.

considerations, the NYISO uses transmission security limit (“TSL”) floor values represent the minimum capacity requirement for each Locality necessary to respect such Locality-specific transmission security constraints.

26. After the IRM is finalized, the NYISO proceeds with the LCR determination process.³⁰ The NYISO determines the LCRs for the upcoming Capability Year using MARS, the same modeling software used for the IRM study, with inputs that include the applicable IRM study database, the NYSRC-approved IRM, the NYISO-determined TSL floor values, and net cost of new entry (“Net CONE”) curves.
27. For all LCR determinations, the NYISO must satisfy the requirement of a LOLE that is the lesser of (a) 0.100 event-days/year and (b) the LOLE that results from the final IRM database representing the IRM approved by the NYSRC.³¹ This LOLE is referred to as the “target LOLE.” The NYISO conducts the LCR study using the applicable NYCA Minimum Installed Capacity Requirement set using the IRM approved by the NYSRC.³²
28. The LCR study also uses Net CONE curves established based on the applicable ICAP Demand Curves in conducting the study’s economic optimization of capacity supply among capacity regions.³³
29. The LCR economic optimization software determines LCRs that minimize the cost of capacity, while at the same time holding unchanged the NYSRC-approved IRM, maintaining a LOLE of less than or equal to the target LOLE, and maintaining minimum capacity requirements greater than or equal to the applicable TSL floor values.³⁴
30. While the LCR study must ensure that its results do not exceed the target LOLE, the study results may represent a lower LOLE than the final IRM case. However, the reliability risk posture of the system (i.e., when loss of load risk occurs) typically remains consistent between the IRM and the LCR studies.

c. Calculation of Other ICAP Market Parameters

31. After the LCRs are finalized, the NYISO uses the final LCR study model results for the upcoming Capability Year to calculate the Capacity Accreditation Factors (“CAFs”). CAFs reflect the marginal reliability contribution of the ICAP Suppliers within each Capacity Accreditation Resource Class (“CARC”) toward meeting the NYSRC-

³⁰ See Locational Minimum Installed Capacity Requirements Determination Process, <https://www.nyiso.com/documents/20142/21537892/LCR-Determination-Process-Triggering-Resource-Revisions.pdf> (“LCR Determination Process Document”); *N.Y. Indep. Sys. Operator, Inc.*, 140 FERC ¶ 61,110 (2012); see also Services Tariff, §§ 5.11.4, 5.11.7, (establishing that the NYISO will determine the LCRs).

³¹ LCR Determination Process Document, § 2.2.

³² *Id.*

³³ *Id.* § 2.3.3.

³⁴ *Id.* §§ 2.3-2.3.1.

established resource adequacy criterion of 0.1 LOLE per year for the upcoming Capability Year.³⁵

32. CAFs and unit-specific derating factors are used to calculate the UCAP that an ICAP Supplier is qualified to supply. Because UCAP is the metric transacted in the ICAP market, the minimum capacity requirements and ICAP Demand Curves are converted to UCAP values for the purposes of conducting the ICAP Spot Market Auctions. The NYISO also uses the CAFs to determine the available capacity from generating resources and the UCAP requirement for LSEs, as well as the ICAP Demand Curves and UCAP translation thereof.
33. The final LCR study model is also used to determine the amount of additional capacity import rights that may be made available to External Installed Capacity Suppliers to support offering UCAP from an External Control Area to the NYCA.

d. Timeline for Developing IRM Study, LCR Study, and Setting IRM, LCRs and Other ICAP Market Parameters

34. The IRM model and the study input assumptions are updated annually, based on the most recent available information. Starting in February in the calendar year preceding the subject Capability Year, the NYISO presents updated study assumptions and associated impacts to the NYSRC. The NYSRC officially approves the study assumptions for a “preliminary base case” in July preceding the applicable Capability Year³⁶ and the study assumptions for the “final base case” in October preceding the subject Capability Year.³⁷ Based on the final based case assumptions and results, the NYSRC Executive Committees finalizes the IRM for the upcoming Capability Year. The NYSRC Executive Committee’s approval of the IRM value typically occurs in December prior to the start of the applicable Capability Year.
35. In the fourth quarter of the calendar year preceding the upcoming Capacity Year, the NYISO presents to stakeholders informational/preliminary LCRs and accompanying preliminary input information, as available (such as the peak load forecast, bulk power transmission capability, derating factors, TSL floor values, and Net CONE curves).³⁸ This includes a discussion of the factors causing year-over-year changes in TSL floor values and preliminary LCRs.³⁹ Typically, in January of the subject Capability Year, the

³⁵ Services Tariff, § 2.3 (Definition – C).

³⁶ The preliminary base case is developed by starting with the previous year’s final base case and inputting base case changes one parameter at a time. The preliminary base case is used to conduct sensitivity studies, which provide a mechanism for illustrating “cause and effect” of how some performance and/or operating parameters and study assumptions can impact reliability and the study outcomes.

³⁷ The final base case is prepared following receipt of the NYISO’s fall load forecast update that provides the most current information available at such time regarding projections for the upcoming Capability Year. The final base case may also include data/assumptions changes and updates since the approval of preliminary base case assumptions, such as the UDR and EDR elections received by August 1.

³⁸ See LCR Determination Process Document, § 4.

³⁹ See *id.*

LCR study results are presented for stakeholder approval at the NYISO Operating Committee. During January through March, the NYISO develops the remaining ICAP market parameters for the upcoming Summer Capability Period (i.e., the first Capability Period encompassed by the upcoming Capability Year). Such additional information includes, but is not limited to CAFs, resource capacity supply ratings, LSE minimum capacity requirements, and the UCAP translation of the ICAP Demand Curves.

36. Based on the milestones to develop the IRM and associated ICAP market parameters for each Capability Year, the August 1 deadline for submitting elections the year preceding the subject Capability Year is necessary. The timeline is as follows:

February-July	Development of IRM study preliminary base case assumptions commences
July	IRM study preliminary base case assumptions finalized
August 1	Deadline for submitting annual elections (including UDR and EDR elections)
September	IRM study preliminary base case results finalized
October	IRM study final base case assumptions finalized
November/December	IRM study final base case results finalized and NYISO determines preliminary LCRs
December	NYSRC Executive Committee approves final IRM
January	LCR study results finalized
March	Final CAFs are available
May 1	Start of the Capability Year

Annual elections are submitted by August 1 for a variety of Resources in addition to the elections by UDR and EDR rights holders. Additional elections required by August 1 include:

- Duration limit elections for Resources with a limited daily run-time less than 24 hours that qualify to participate as ICAP Suppliers with an Energy Duration Limitation;
- Resources that seek to switch from a retail load modifier to NYISO wholesale market participation or vice versa at the beginning of the upcoming Capability Year;
- Resources that plan to engage in dual participation in the ICAP market and retail programs operated to meet the needs of local distributions systems during the upcoming Capability Year;

- An existing Distributed Energy Resource seeking to change from an Aggregation with a specific participation model to an Aggregation using a different participation model;
- A Behind-the-Meter Net Generation (“BTM:NG”) Resource electing not to participate in the NYISO-administered markets as a BTM:NG Resource for the upcoming Capability Year; and
- An ICAP Supplier that elects to enter the firm fuel CARC for the upcoming Capability Year.

37. During the development of the enhancements proposed in this proceeding, the NYISO in collaboration with its stakeholders evaluated the potential for collecting the elections on a semi-annual basis (i.e., having separate timelines for elections made for the summer and winter seasons).⁴⁰ Ultimately, such a construct was not included in the NYISO’s proposal because it would have required changes to the NYSRC process for determining the IRM, which is outside of the NYISO’s purview. To support the timeline of the IRM study, the NYISO proposed to maintain the current August 1 deadline for submitting elections prior to the subject Capability Year, including elections by UDR and EDR rights holders.⁴¹

IV. Description of Manner in which Elections by Holders of UDRs and EDRs are Reflected in the ICAP Market Parameters Including ICAP Demand Curves

38. The NYISO conducts monthly ICAP Spot Market Auctions to meet the minimum capacity requirements for each delivery month. LSEs are required to purchase any capacity procurement deficiencies and excess in each ICAP Spot Market Auction. The ICAP Demand Curves are used to clear the ICAP Spot Market Auctions.⁴²

39. With the emergence of winter reliability risks, the NYISO has proposed in this proceeding a number of enhancements to its capacity market to better account for such

⁴⁰ See NYISO, *Winter Reliability Capacity Enhancements: Seasonal Election* (presented at Apr. 9, 2025 NYISO Installed Capacity Working Group (“ICAPWG”) meeting), at Slide 15, <https://www.nyiso.com/documents/20142/50769536/2025%20Winter%20Reliability%20-%20Seasonal%20Elections%204.9.25%20Final.pdf>

⁴¹ See NYISO, *Winter Reliability Capacity Enhancements: Concept Proposal* (presented at July 29, 2025 ICAPWG meeting), at Slide 8, https://www.nyiso.com/documents/20142/52778669/2025%20Winter%20Reliability%20-%20July%2029%20ICAPWG%20MDC_Final.1.pdf

⁴² The ICAP Demand Curves are designed to provide sufficient revenue to cover the estimated cost to construct and operate a hypothetical new capacity supply resource in various locations throughout New York. This cost is offset by an estimate of the potential revenues the hypothetical resource could earn from participating in the NYISO-administered Energy and Ancillary Services markets. The resulting net value determines the revenue the hypothetical resource would need to receive from the ICAP market to obtain sufficient revenues to support market entry under the system conditions postulated for determining the ICAP Demand Curves (i.e., supply conditions equal to the applicable minimum capacity requirement plus the MW value of the hypothetical new capacity supply resource).

risks and align capacity market price signals with seasonal resource adequacy risk. The proposed market design enhancements include:⁴³

- Using the modeled capacity in the peak months for each season (including the modeling of capacity supply from UDRs and EDRs), as reflected in the annual IRM study, to establish seasonal minimum capacity requirements;
- Introducing seasonal UDR and EDR elections with an accompanying must offer requirement;
- Removing the winter-to-summer ratio from the determination of the ICAP Demand Curve parameters due to the development of distinct seasonal minimum capacity requirements;
- Determining the winter zero crossing points of the ICAP Demand Curves using the ratio of available capacity that would be used to set the minimum ICAP requirements for the Summer Capability Period of the upcoming Capability Year to the available capacity that would be used to set the minimum ICAP requirements for the Winter Capability Period of the upcoming Capability Year based on the NYSRC's most recently approved assumptions for the IRM study; and
- Updating the determination of the prescribed level of excess annually for the seasonal ICAP Demand Curves based on use of the minimum capacity requirements in effect for the like Capability Period from the immediately preceding Capability Year.

40. When there is substantial difference in the elected MW for a UDR or EDR between each season, it will change the amount of modeled ICAP and hence set different minimum capacity requirements between the seasons. Such differences will impact the resulting seasonal reference price values for the ICAP Demand Curves. The difference in the amount of modeled ICAP will also change the zero crossing points on the seasonal ICAP Demand Curves.

41. As evidenced by the development of ICAP market parameters for the 2026-2027 Capability Year, the introduction of the CHPE UDRs changes the contingency considered for the TSL floor value into Load Zone J and hence materially impacts the minimum capacity requirements for Load Zone J.⁴⁴ The NYISO's proposal seeks to ensure alignment between the seasonal elections of UDR and EDR rights holders and the resulting seasonal minimum capacity requirements through, in part, use of must offer

⁴³ For further discussion of the proposed Winter Reliability Capacity Enhancements, see NYISO Feb. 18, 2026 Filing, Docket No. ER26-1431-000, at 3-11.

⁴⁴ See NYISO, *2026-2027 Locational Minimum Installed Capacity Requirements (LCRs) Study: Final Results* (presented at Jan. 15, 2026 NYISO Operating Committee meeting), https://www.nyiso.com/documents/20142/56359673/06a_2026-2027%20Final%20LCR%20Results%20-%20001152026.pdf; NYISO Locational Minimum Installed Capacity Requirements Study for the 2026-2027 Capability Year, at 6-7, https://www.nyiso.com/documents/20142/56359673/06b_2026-2027%20LCR%20Report%20Final.pdf; NYISO 2026-2027 Locality Bulk Power Transmission Capability Report at 7-8, https://www.nyiso.com/documents/20142/56359673/06c_2026%20Locality%20Bulk%20Power%20Transmission%20Capability%20Report.pdf (discussing CHPE's impact in reducing the New York City Locality TSL floor value by 400 MW).

requirements to facilitate reliance on seasonal elections to provide a credible and reasonable expectation of capacity availability from UDRs and EDRs for the upcoming Capability Year.

V. Explanation of the Potential Misalignment Addressed by the Proposed Must Offer Requirement for UDR and EDR Right Holders' Elections

42. The capacity supply from UDRs and EDRs (as informed by their seasonal elections) is modeled as firm capacity imports in the IRM study. The modeled capacity in the IRM study for each season (including firm capacity imports associated with UDRs and EDRs) will be used to calculate summer and winter minimum capacity requirements. The modeled capacity in each season will also be used to establish the zero crossing points for the winter ICAP Demand Curves. The season-specific minimum capacity requirements and the seasonal ICAP Demand Curves, along with many other ICAP market parameters, are applied for the entire duration of the applicable Capability Period, without monthly adjustments.
43. A misalignment could occur between (1) the modeled capacity in each season that is used to determine the seasonal minimum capacity requirements and the seasonal ICAP Demand Curves derived therefrom and (2) the actual resources available in the ICAP Spot Market Auctions. Any such misalignment may impact the accuracy of the resulting market clearing prices determined by the ICAP Spot Market Auctions. Take for example a given Capability Period during which the seasonal minimum capacity requirement and the ICAP Demand Curves are based on a UDR election of 1,000 MW. If only 500 MW of UDR capacity is actually available in a given delivery month, the minimum capacity requirement for the ICAP Spot Market Auction would be too high, placing upward pressure on the market clearing price and potential divergence from a price signal that more accurately reflects actual supply conditions and system risks. Conversely, if 2,000 MW of UDR capacity is actually available in a given month, the minimum capacity requirement for the ICAP Spot Market Auction would be too low, resulting downward pressure on capacity price signals from the divergence between the supply assumptions used to develop the seasonal minimum capacity requirements and actual supply availability. The proposed seasonal UDR and EDR election requirements with a must offer obligation seek to minimize this misalignment by better aligning the ICAP market price signals and actual market conditions.
44. The annual IRM studies demonstrate that reliability risks are not evenly distributed across all months within each season. As shown in the table below, reliability risk is most evident in the peak months of both the summer and winter periods. The results of the 2026-2027 IRM study identified that the monthly Expected Unserved Energy (“EUE”) value was highest in the month of July with notable EUE also present in August.⁴⁵ Also, the study found the presence of notable EUE in December and January, indicating the emergence of winter resource adequacy risks. Conversely, minimal (if any) impactful reliability risk is present in the shoulder months. The absence of reliability risks in the shoulder periods indicates that capacity supply during such periods provides

⁴⁵ 2026-2027 IRM Technical Study Report Appendices.

comparatively lower reliability value than supply available during the critical risk periods.

Table B.5 Monthly EUE

		Monthly EUE (MWh/month)											
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
NYCA		14.110	0.272	0.000	0.000	0.000	0.159	140.340	7.712	1.530	0.000	0.000	5.384
ROS		4.953	0.105	0.000	0.000	0.000	0.000	25.503	0.015	0.000	0.000	0.000	1.928
GHI		3.907	0.080	0.000	0.000	0.000	0.000	28.062	0.014	0.000	0.000	0.000	1.405
J		5.251	0.087	0.000	0.000	0.000	0.057	43.824	0.643	0.828	0.000	0.000	2.050
K		0.004	0.000	0.000	0.000	0.000	0.103	43.084	7.039	0.701	0.000	0.000	0.004

45. The following table provides additional details on EUE from the 2026-2027 IRM study.⁴⁶ As demonstrated by the table, the study identified the risk hours are concentrated during the peak months of the summer and winter periods.⁴⁷

Table B.6 Monthly EUE Values by Hour

		NYCA EUE per month and hour (MWh/hr)																							
HB		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
JAN		0.000	0.000	0.000	0.000	0.000	0.000	0.213	1.494	0.537	0.131	0.063	0.045	0.041	0.030	0.001	0.222	1.520	7.299	0.823	0.372	1.246	0.075	0.000	0.000
FEB		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.017	0.017	0.030	0.002	0.004	0.001	0.000	0.000	0.000	0.073	0.064	0.005	0.055	0.000	0.000	0.000
MAR		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
APR		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MAY		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
JUN		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.043	0.029	0.026	0.017	0.021	0.010	0.005	0.003	0.000	0.000	0.000
JUL		0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.048	0.804	1.882	3.129	5.264	12.259	11.901	6.081	19.723	23.737	22.911	14.029	5.764	9.075	3.471	0.257	0.003
AUG		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.158	0.257	0.709	0.776	1.261	1.617	1.238	1.020	0.555	0.113	0.006	0.000	0.000
SEP		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.000	0.118	0.197	0.230	0.537	0.394	0.042	0.000	0.000	0.000	0.000	0.000
OCT		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NOV		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DEC		0.000	0.000	0.000	0.000	0.000	0.020	0.547	0.884	0.057	0.014	0.019	0.005	0.005	0.011	0.000	0.139	1.153	1.690	0.119	0.042	0.667	0.011	0.001	0.000

46. The seasonal UDR and EDR elections with a must offer obligation are an important element of the NYISO’s proposal in this proceeding. These proposed market enhancements are intended to more accurately account for emerging winter reliability risks in the NYISO-administered capacity market. This component of the NYISO’s proposal supports the establishment of appropriate seasonal minimum capacity

⁴⁶ 2026-2027 IRM Technical Study Report Appendices.

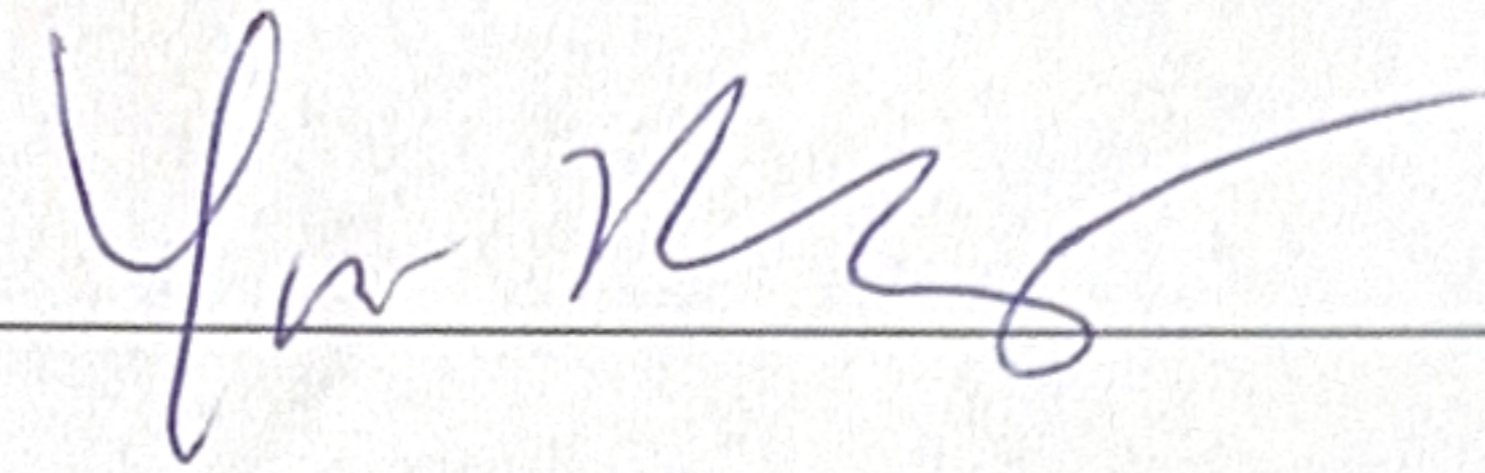
⁴⁷ *Id.*

requirements and seasonal ICAP Demand Curves to ensure that the capacity market can provide price signals aligned with the system risks.

47. As winter reliability risks emerge on the NYCA system and are captured in the IRM study, resources that are not available during the winter peak months (December, January, and February) will have a significant impact on the reliability risk posture of the system. These impacts are seen in the increasing penetration of winter LOLE and resulting ICAP market parameters, such as CAFs, LSE minimum UCAP requirements, and ICAP Demand Curves. Focusing solely on monthly variations in availability of capacity supply, as appears to be the primary concern discussed in the HQUS Protest, provides an incomplete assessment of the ICAP market implications that the NYISO's proposal seeks to address in a comprehensive and wholistic manner.
48. This concludes my affidavit.

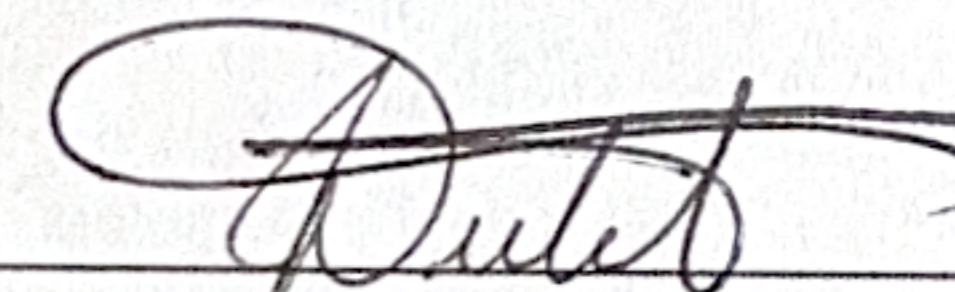
ATTESTATION

I am the witness identified in the foregoing affidavit. I have read the affidavit and am familiar with its contents. The facts set forth therein are true to the best of my knowledge, information, and belief.



Yan Huang
March 31, 2026

Subscribed and sworn to before me
this 31 day of March 2026


Notary Public

My commission expires: 07/24/2026

