

# DRAFT STATEMENT OF WORK (“SOW”)

## 1. OBJECTIVE

Consultant shall serve as the “Independent Consultant” referred to in Section 5.14.1.2.2 of the NYISO’s Market Administration and Control Area Services Tariff (MST). In such role, the Consultant shall, consistent with the requirements of Section 5.14.1.2.2 of the MST, conduct a study of the parameters, assumptions, and methodologies used as the basis to set the NYISO’s Installed Capacity (ICAP) Demand Curves beginning with the 2025/2026 Capability Year, which commences on May 1, 2025. The Consultant will propose and evaluate methodologies to enhance the projection of net energy and ancillary services (EAS) revenues used to determine the net cost of new entry (CONE) of the “peaking plant” used for each ICAP Demand Curve, including approaches to reflect impacts from recently implemented, as well as expected, market rule changes. Such methodologies will need to ensure compliance with the requirements set forth in Section 5.14.1.2.2 of the MST and consider that there may not be robust historical data regarding the impact of more recently implemented market rule changes. Further details are set forth below, and certain background facts are described in Exhibit A. The anticipated timeline for developing the ICAP Demand Curves for the 2025/2026 Capability Year, as well as the methodologies and assumptions to be used in the annual updates to determine the ICAP Demand Curves for the subsequent three Capability Years (2026/2027, 2027/2028, and 2028/2029) is set forth in Exhibit B.

## 2. SERVICES TO BE PERFORMED

Consultant shall be responsible for the following services (the “**Services**”) to produce the Deliverables (as hereinafter defined). Capitalized terms used herein but not defined herein shall have the meanings given to them in the MST. Such Services shall consist of the following tasks and activities:

### Task 1: Determine Levelized Cost of New Entrant Peaking Plant

This task will involve the determination of the localized, levelized cost (Gross CONE) of a new entrant “peaking plant” (as further defined below) for the first Capability Year covered by the periodic review, which begins on May 1, 2025 (Year 1), for each of the following locations: (a) the New York City Locality (Zone J), (b) the Long Island Locality (Zone K), (c) various points in the G-J Locality (specifically, locations within Load Zones G-I), (d) Load Zones A through E, and (e) Load Zone F. If the NYISO proposes one or more new Localities in its required New Capacity Zone (NCZ) study report filing with the Federal Energy Regulatory Commission on or before March 31, 2024, that is not one of the Localities identified above, Consultant shall perform this task for any such new Localities as well. The NYISO tariff defines a “peaking unit” as “the unit with technology that results in the lowest fixed costs and highest variable costs among all other units’ technology that are economically viable.” A “peaking plant” may consist of one or more of such units. Consultant shall perform a screening analysis that assesses various technology types and designs that are “economically viable” (as such term is utilized in Section 5.14.1.2.2 of the MST and interpreted in prior FERC orders) as part of identifying the recommended peaking plant for each ICAP Demand Curve as part of Task 4. Technology types ~~that should to~~ be considered for this analysis include are combustion turbines (including consideration as to the viability to operate using fuels to comply with the 2040 zero-emission requirement for electricity generation specified in New York’s Climate Leadership and Community Protection Act) and energy storage resources

with the capability of producing energy for four (4) ~~or more~~ six (6), and eight (8) consecutive hours.

With consideration of the estimated marginal reliability contribution provided by the peaking plant, the selected peaking unit technology will result in the lowest net CONE, derived from the Gross CONE, less an offset for the estimated EAS revenues, net of the variable operating costs (Net EAS Revenues, as further described in Task 2 below), under conditions in which the available capacity is equal to the sum of (a) the minimum ICAP requirement for each Locality, any New Capacity Zone, and the New York Control Area (NYCA) and (b) the applicable peaking plant's Megawatt (MW) capacity (referred to as the "Prescribed Level of Excess"). The requirement is to carry the lowest cost technology for each Locality, any New Capacity Zone, and the NYCA, through the entire analysis and final proposed curves for the first Capability Year encompassed by the periodic review.

This task involves estimating the installed costs, transmission and deliverability costs, the annual fixed charge rate, and fixed operations and maintenance (O&M) costs. Factors impacting total installed costs will include but are not limited to:

1. Regulatory requirements (including, but not limited to, environmental and permitting requirements)
2. Minimum capacity of each unit and/or the total plant
3. Utility scale – the MW size or footprint of the plant,
4. Ability to be called upon or dispatched with short notice. The technology requirements are as specified in this SOW.
5. Capability to operate on more than one fuel source – note that for certain technologies, primary fuel sources, and locations there may be requirements to include alternate fuel operating capability; if such requirements apply, such capability should be included in the evaluation.
6. Commercial availability of the technology

This task will also involve recommending financial parameters that include, but are not limited to, an escalation factor, short-term inflation rate, debt-to-equity ratio, cost of debt and cost of equity, composite tax and insurance rates used to calculate the after-tax weighted average cost of capital (ATWACC) and annual carrying charge for recovery of each peaking plant's installed costs. These parameters should also seek to account for applicable market and regulatory risks.

This task also includes recommending the necessary methodologies and assumptions to be used as part of the annual updates to determine the ICAP Demand Curves for the remaining three Capability Years encompassed by the periodic review.

## **Task 2: Project Energy and Ancillary Services Revenues**

This task will involve estimating the Net EAS Revenue offset associated with the respective new entrant units identified in Task 1. Estimation will be derived for the representative units in (a) New York City (Zone J), (b) Long Island (Zone K), (c) G-J Locality (specifically, locations within Load Zones G-I), (d) Load Zones A through E, (e) Load Zone F, and (f) any new Locality proposed by the NYISO in its NCZ study report filing (as further described in Task 1). Consultant will provide recommendations to enhance the projection of Net EAS Revenues, if necessary, adhering to the requirements of the MST and the goals of maintaining openness, transparency, and replicability. Different approaches for estimating the Net EAS Revenue offset may be needed for different peaking unit technologies (e.g., different approaches for a combustion turbine versus an energy storage system). Approaches should account for the expected operation of the peaking plant

based on the peaking plant's technology, access to fuel, fuel costs, and the NYISO's existing market rules.

Subsequent to filing the ICAP Demand Curves for Year 1, the Net EAS Revenue offset associated each ICAP Demand Curve will be recalculated as part of the annual update process to determine the ICAP Demand Curves for each of the subsequent three Capability Years encompassed by the periodic review (Capability Years 2026/2027, 2027/2028, and 2028/2029). The Consultant will be responsible for recommending the necessary methodologies and assumptions to be used in updating the Net EAS Revenue offset values as part of these annual updates.

### **Task 3: Conduct an Analysis for Level of Excess – Adjustment Factors**

Consultant shall develop and recommend an appropriate analysis for adjusting historical energy and ancillary services prices to reflect the Prescribed Level of Excess described in Task 1 above (referred to herein as “Level of Excess – Adjustment Factors”). For example, in the last periodic review a production cost analysis was undertaken to determine this adjustment with the NYISO contracting with General Electric International, Inc. (GE) to perform the analysis using the database from the NYISO's economic planning process study work as the starting point for the analysis.

### **Task 4: Recommend Demand Curve Parameters**

This task involves using the values derived in Tasks 1, 2, and 3 to determine the net CONE for each peaking plant at the Prescribed Level of Excess in order to calculate the reference point values for each ICAP Demand Curve. In addition, the Consultant shall evaluate the appropriateness of the zero-crossing point of the ICAP Demand Curves, as well as the shape and slope of each curve, and identify changes if necessary. Consultant shall develop recommended ICAP Demand Curves for Year 1 based on these parameters and provide the rationale for the recommended parameters.

### **Task 5: Prepare Reports, Presentations, and Affidavits**

This task includes the preparation of the various reports and presentations associated with the Project. Consultant will be required to prepare presentations and present to stakeholders during stakeholder working group and/or committee sessions throughout the process – this typically ranges from 12-18 meetings over the course of the engagement, but may vary depending on the proposed project work plan and requests from stakeholders for additional analysis. All presentation materials must be submitted to the NYISO for review at least five business days prior to being posted on the public NYISO website (such public postings occur three business days in advance of working group meetings or five business days in advance of voting committee meetings). In addition to stakeholder working group/committee meetings, the Consultant shall participate in additional meetings and conversations with stakeholders, the NYISO's Market Monitoring Unit, and the NYISO, as requested.

The Consultant's reports, findings, and recommendations shall include at least the following, with a description and analysis of the basis thereof:

- A. Total installed costs as of May 2025: the localized, levelized, embedded cost of a peaking plant including transmission/interconnection and any deliverability costs, in Zone J, Zone K, various locations within the G-J Locality, any other Locality(ies) proposed by the NYISO in its NCZ study report filing (as further described in Task 1), and in various locations within Zones A through F (the Rest of State or “ROS” region). Peaking plants ~~that should to~~ be considered for analysis ~~include are~~ combustion turbines (including consideration as to the

viability to operate using fuels to comply with the 2040 zero-emission requirement for electricity generation specified in New York's Climate Leadership and Community Protection Act) and energy storage resources (considering resources with the capability of producing energy for four (4), ~~six (6), or and eight (8) more~~ consecutive hours).

- B. Comparison of the Gross CONE and net CONE (values calculated in Tasks 1, 2, and 3 above) to assess which peaking plant has the lowest net CONE of each ICAP Demand Curve. The comparison shall also determine which peaking plant would result in the lowest UCAP reference point value for each ICAP Demand Curve, given the estimated Capacity Accreditation Factor for the peaking plant.<sup>1</sup>
- C. Associated Net EAS Revenue offset value for Year 1 for each plant (as further specified in Tasks 1, 2, and 3 above).
- D. Recommended shape and slope for each ICAP Demand Curve. ICAP Demand Curves' shape and slope should seek to minimize market power, minimize price volatility, recognize the value of extra capacity, and minimize impacts on customers.
- E. Recommended "zero-crossing points" (i.e., the quantity of capacity beyond which the price of additional capacity is zero) for each ICAP Demand Curve.
- F. Financial parameters, including but not limited to the amortization period, escalation factor, short-term inflation rate, debt-to-equity ratio, cost of debt and cost of equity, composite tax rates and insurance rate, used to calculate ATWACC and annual carrying charge. These parameters should also consider how to account for applicable market and regulatory risks.
- G. Approach (modeling/simulation methodology) used to determine Net EAS Revenue offset values by area/Locality. The approach should account for the expected operation of the peaking plant based on the peaking plant's technology, access to fuel, fuel costs, and the NYISO's existing market rules.
- H. Determination of the lowest net CONE (totalized installed costs less Net EAS Revenues) peaking plant in each Locality (including any proposed new Localities) and ROS region for Year 1, given consideration of the marginal reliability contribution provided by the peaking plant as reflected in the estimated Capacity Accreditation Factor of the peaking plant.
- I. Recommended methodologies and assumptions to be used in conducting the annual updates to determine the ICAP Demand Curves for the subsequent three Capability Years encompassed by the periodic review.
- J. Comparison of costs to historical values and those in similar and previous studies.
- K. Point above the applicable minimum ICAP requirement equal to the MW value of the identified peaking plant proposed to establish each ICAP Demand Curve.

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<sup>1</sup> As detailed in Section 5.5 of the NYISO's ICAP Manual, the Capacity Accreditation Factor of the peaking plant will be utilized in the ICAP to UCAP translation of the ICAP reference point prices, beginning with Capability Year 2024/2025.

- L. Rationalize recommendations with previous ICAP Demand Curve studies<sup>2</sup> and the NYISO's Market Monitoring Unit's State of the Market reports.<sup>3</sup>
- M. Recommended methodologies, assumptions and data used to determine the appropriate adjustments to prices to reflect the Prescribed Level of Excess (Level of Excess – Adjustment Factors as further described in Task 3 above)

All sources of data and assumptions used in the report shall be clearly identified in the report. The above elements shall recognize and incorporate locational/regional capacity requirements in the ICAP Demand Curve analysis.

#### **Task 6: Support Filing with Federal Energy Regulatory Commission (FERC)**

Consultant shall provide all necessary affidavits of Consultant and/or subcontractors as requested by Client to support Client's filing with FERC proposing the ICAP Demand Curves for Year 1, as well as the methodologies and assumptions to be used as part of the annual updates for the subsequent three Capability Years ("Initial FERC Filing"), as well as all other support required by Client in connection with the Initial FERC Filing. Unless otherwise directed by FERC, Client is required to file the Initial FERC Filing by no later than November 30, 2024.

#### **Task 7: Upon request by Client, Time, and Material Demand Curve-Related Support**

Preparation and review of additional testimony and/or affidavits (i.e., supplemental, reply, or other filings) by Consultant and/or subcontractors filed after the completion of Client's Initial FERC Filing in relation to, and participate in proceedings and meetings before FERC and/or support Client's analysis, testimony, and other work related to the ICAP Demand Curves resulting from the Services.

#### **Task 8: Support Annual Updates of ICAP Demand Curve**

Through a separate SOW, the Consultant will also support the NYISO, as necessary, in its annual updating of the ICAP Demand Curves for Capability Year 2026/2027, 2027/2028, and 2028/2029.

### **3. DELIVERABLES**

Consultant's deliverables (the "Deliverables") under this SOW shall include:

- a. Final development and presentation to stakeholders of the Net EAS Revenue model – January 2024
- b. Preliminary cost information for potential viable plant technology(ies) by Locality and the ROS region – March 2024
- c. Final development and presentation to stakeholders of the Demand Curve model used to determine the reference point values for the ICAP Demand Curves – May 2024
- d. Final development of Level of Excess - Adjustment Factors to be applied to historical prices to account for the Prescribed Level of Excess – June 2024
- e. Draft Report – June 2024
- f. Final Report – August 2024 (subject to subsequent updating of values to reflect data through August 31, 2020)

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<sup>2</sup> Available on NYISO website: <https://www.nyiso.com/installed-capacity-market>

<sup>3</sup> Available on NYISO website: <https://www.nyiso.com/library>

- g. Presentations, additional analysis, and support of the NYISO Board of Directors' review of NYISO staff recommendations and stakeholder input – September/October 2024
- h. Any required affidavits or other supporting material for the Initial FERC Filing – October/November 2024.

Consultant will also be required to prepare presentations and present to stakeholders during stakeholder working group and/or committee sessions throughout the process. All presentation materials must be submitted to the NYISO for review at least five business days prior to being posted on the public NYISO website (such public postings occur three business days in advance of working group meetings or five business days in advance of voting committee meetings). Refer to Exhibit B for the timeline of expected Consultant presentations to stakeholder working group sessions based on the information available at the time of the NYISO's issuance of this SOW.

## Exhibit A

### BACKGROUND

The NYISO administers a series of periodic ICAP auctions. In these NYISO-administered auctions, Load Serving Entity(ies) (LSEs) have the opportunity to purchase UCAP necessary to meet their Locational and NYCA Minimum UCAP Requirements, ICAP Suppliers (which include ICAP Marketers) have the opportunity to sell and buy UCAP, and the NYISO has the ability to ensure all UCAP requirements are met. The auctions are six (6) month Capability Period Auctions (commonly referred to as “Strip Auctions”), Monthly Auctions, and ICAP Spot Market Auctions (commonly referred to as “Spot Auctions”).

The ICAP Demand Curves are used only in the Spot Auctions. In the Spot Auction, the NYISO submits monthly bids on behalf of all LSE UCAP requirements that have not been satisfied prior to the Spot Auction. The price per MW is determined by the applicable ICAP Demand Curve. Each LSE’s Unforced Capacity Obligation (UCAP obligation) is determined each month. LSEs pay to the NYISO the product of the applicable Market-Clearing Price (MCP) of UCAP determined in the Spot Auction and the amount of its UCAP obligation. The NYISO pays ICAP Suppliers whose offers clear the MCP per MW offered into the market.

Prior to each Spot Auction, LSEs certify all UCAP to be counted toward their respective minimum UCAP requirements (obtained through bilateral transactions, self-supply or in the Capability Period and/or Monthly Auctions). Each entity that has previously committed to supply UCAP for the Obligation Procurement Period also certifies to the NYISO before the Spot Auction the specific resource from which it is providing UCAP to meet its commitments. ICAP Suppliers can offer into the Spot Auction UCAP that they have not previously certified. LSEs can offer into the Spot Auction UCAP that they have in excess of their UCAP requirements.

Four (4) ICAP Demand Curves are currently used in the Spot Auction to set the MCP and to determine the LSE UCAP obligation for each of G-J Locality, New York City (NYC), Long Island (LI), and for all LSEs in the NYCA.

The key parameters necessary for establishing the ICAP Demand Curves are: (i) the maximum allowable price of capacity; (ii) the reference point price; and (iii) the point at which the price of capacity declines to zero (commonly referred to as the “zero-crossing point”). The maximum allowable price of capacity is established at 1.5 times the applicable monthly localized levelized embedded cost of the relevant peaking plant. The reference point price is determined, in part, based on the net CONE value, derived by subtracting the relevant net energy and ancillary services revenue estimate for a peaking plant from the levelized embedded cost value of the same plant. Beginning with Capability Year 2024/2025, the maximum allowable price of capacity and reference point price of each ICAP Demand Curve will be translated from ICAP to UCAP terms by dividing the prices by the product of: (a) the Capacity Accreditation Factor of the peaking plant used to establish the applicable ICAP Demand Curve, and (b) one minus the applicable derating factor of such peaking plant.

The MST contains the rules by which a New Capacity Zone (NCZ) is identified and proposed (once established, a Locality). As applicable to the timing of the ICAP Demand Curve reset pertinent to this request for proposals (and as is indicated in the schedule provided in Exhibit B), the boundaries and characteristics of any NCZ would be identified and proposed to FERC in a filing on or before March 31, 2024. A proposed new Locality may consist of one or more of the existing Load Zones, and may include an existing Locality.

The requirements that the ICAP Demand Curves for the existing and any proposed new Localities, and NYCA be reviewed every four years are set forth in Section 5.14.1.2.2 of the MST.



## Exhibit B

### Demand Curve Reset Schedule

<b>Demand Curve Reset Schedule</b>	
<b>Dates with an * indicate a tariff/manual specified date</b>	<b>Date</b>
NYISO posts draft Schedule for ICAP Demand Curve Reset and draft RFP for ICAP Demand Curve Independent Consultant for review	February 15, 2023
<i>Installed Capacity Working Group Meeting</i>	<i>February 21, 2023</i>
(If revised) NYISO posts second draft RFP for ICAP Demand Curve Independent Consultant	March 2, 2023
<i>Installed Capacity Working Group Meeting</i>	<i>March 7, 2023</i>
NYISO posts final RFP for ICAP Demand Curve Independent Consultant to the NYISO's website and sends it to potential bidders	March 27, 2023
(If revised) NYISO posts second draft Schedule for ICAP Demand Curve Reset	March 28, 2023
<i>Installed Capacity Working Group Meeting</i>	<i>March 31, 2023</i>
<b>Deadline for interested persons to notify the NYISO of their intent to bid for ICAP Demand Curve Independent Consultant</b>	<b>April 3, 2023 by 2:00 PM EST</b>
Deadline for Receipt of Written Questions to the RFP for ICAP Demand Curve Independent Consultant	April 12, 2023 by 2:00 PM EST
Deadline for NYISO to Respond to Questions to the RFP for ICAP Demand Curve Independent Consultant	April 24, 2023
<b>Due date for responses to RFP for ICAP Demand Curve Independent Consultant</b>	<b>May 8, 2023 by 2:00 PM EST</b>
<b>Finalize contract between NYISO and Independent Consultant</b>	<b>June 30, 2023</b>
*NYISO New Capacity Zone Study Start Date *Review inputs and assumptions for NCZ Study for review with stakeholders <i>Installed Capacity Working Group Meeting</i>	September 1, 2023*  <i>Prior to October 1, 2023*</i>
Independent Consultant presents proposed DCR principles and framework for stakeholder review and comment <i>Installed Capacity Working Group Meeting</i>	<i>August 9, 2023</i>
Additional discussion of proposed guiding principles and framework Independent Consultant develops proposals to address agreed upon principles Independent Consultant provides materials for proposed approaches to enhance the Net EAS model Determine whether a 205 filing is required for this DCR in advance of potential March BIC/MC vote <i>Installed Capacity Working Group Meeting</i>	<i>September 26, 2023</i>
Final discussion of proposed guiding principles and framework Independent Consultant presents on initial assumptions and methodology Additional discussion of proposed approaches to enhance the Net EAS model Additional discussion on any identified process changes <i>Installed Capacity Working Group Meeting</i>	<i>November 8, 2023</i>
<b>Notional dates are used below for 2024 as the working groups are not yet scheduled</b>	
*NYISO written report to stakeholders on NCZ study results	January 15, 2024*
Additional discussion regarding assumptions and methodology Additional discussion of proposed approaches to enhance the Net EAS model Additional discussion on any identified process changes <i>Installed Capacity Working Group Meeting</i>	<i>January 9, 2024</i>
Final discussion regarding assumptions and methodology Final discussion of proposed approaches to enhance the Net EAS model	

Final discussion on any identified process changes NYISO posts tariff revisions associated with any identified process changes, if necessary <i>Installed Capacity Working Group Meeting</i>	January 30, 2024
Discussion on development of Level of Excess Adjustment Factors Posting <del>of</del> for March BIC of NYISO recommended tariff changes for any identified process changes, if necessary. <u>The March BIC is the last opportunity for the BIC to consider process-related tariff changes intended to apply to this Demand Curve reset.</u> <i>BIC - MP vote on DCR 205 filing to amend tariff, if necessary</i>	February 27, 2024 March 5, 2024
*NYISO determines indicative LCR for NCZ, if necessary	March 1, 2024*
Additional discussion on development of Level of Excess Adjustment Factors Posting for March MC of NYISO recommended tariff changes for any identified process changes, if necessary. <u>The March MC is the last opportunity for the MC to consider process-related tariff changes intended to apply to this Demand Curve reset.</u> <i>MC - MP vote on DCR 205 filing to amend tariff, if necessary</i>	March 12, 2024 March 19, 2024
Independent Consultant provides preliminary cost information for potential viable proxy plant technology by Locality and ROS. <i>Installed Capacity Working Group Meeting</i>	March 28, 2024
*NYISO files tariff changes with FERC to establish NCZ, NCZ Study Results, revise Locality definition to include NCZ boundary, if necessary	March 31, 2024*
Independent Consultant provides preliminary Demand Curve model for potential viable proxy plant technology by Locality and ROS. <i>Installed Capacity Working Group Meeting</i>	April 18, 2024
Independent Consultant discusses any issues and feedback associated with cost data and Demand Curve model <i>Installed Capacity WG Meeting</i>	May 16, 2024
Final development of Level of Excess Adjustment Factors Independent Consultant issues draft report <i>Installed Capacity WG Meeting</i>	June 11, 2024
Independent Consultant receives written comments from stakeholders on draft report <i>Installed Capacity WG Meeting</i>	June 27, 2024
Independent Consultant discusses any issues and feedback associated with draft report, cost information and Demand Curve model <i>Installed Capacity WG Meeting</i>	July 16, 2024
Independent Consultant provides final report (subject to an updated posting with final model inputs, reflecting data through August 31, 2024) NYISO posts draft staff recommendations <i>Installed Capacity WG Meeting</i>	August 2, 2024
NYISO receives written comments from stakeholders on draft staff recommendations <i>Installed Capacity WG Meeting</i>	August 16, 2024
NYISO posts final staff recommendations (subject to an updated posting with final model inputs, reflecting data through August 31, 2024) <i>Installed Capacity WG Meeting</i>	September 5, 2024 September 10, 2024
NYISO posts updated final staff recommendations with final model inputs Independent Consultant provides updated final report with final model inputs <i>Installed Capacity WG Meeting</i>	September 19, 2024 September 24, 2024
Submission of stakeholder written comments/briefs to NYISO Board	October 9, 2024
Presentations to BOD of stakeholder views on proposed curves	October 14, 2024
*NYISO FERC filing of ICAP Demand Curves as approved by the Board of Directors, incorporating the results of the periodic review	November 30, 2024*

