

Capacity Accreditation: Implementation Details

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Business Issues Committee

December 14, 2022

Agenda

- **Background**
- **Capacity Accreditation Overview**
- **Implementation Details Summary**
- **Next Steps**
- **Appendix**

Background

Background

- On May 10th, 2022, the FERC approved the market design for Capacity Accreditation as part of the NYISO's Comprehensive Mitigation Review filing
- The goal of this year's Capacity Accreditation project was to (1) develop the implementation details and technical specifications for the market design and (2) propose necessary ICAP Manual revisions
 - The NYISO is seeking approval of the ICAP Manual revisions, which incorporate the Capacity Accreditation implementation details, and a recommendation to the Management Committee of an associated tariff revision

Capacity Accreditation Overview

Capacity Accreditation Overview

- **As approved by FERC and detailed in MST 2.3 and MST 5.12.14:**
 - Capacity Accreditation Factors (CAFs) will reflect the marginal reliability contribution of the ICAP Suppliers within each Capacity Accreditation Resource Class (CARC) toward meeting NYSRC resource adequacy requirements for the upcoming Capability Year, starting with the Capability Year that begins in May 2024
 - A CARC is a defined set of Resources and/or Aggregations with similar technologies and/or operating characteristics which are expected to have similar marginal reliability contributions toward meeting NYSRC resource adequacy requirements for the upcoming Capability Year
 - The NYISO will annually review and establish the CARCs and applicable CAFs for the upcoming Capability Year
 - Each ICAP Supplier will be assigned to a CARC and receive the applicable CAF for its assigned CARC and capacity zone
 - An ICAP Supplier's assigned CAF will be used in calculating its Adjusted ICAP and, in turn, the UCAP the Supplier is qualified to supply to the NYCA
 - A Supplier's CAF will replace its Duration Adjustment Factor (DAF) in the calculation of Adjusted ICAP
 - Starting with the Capability Year that begins in May 2024, the NYISO will annually review the Peak Load Window associated with the bidding requirements for Resources with Energy Duration Limitations and modify the Peak Load Window accordingly, pursuant to ISO Procedures

Implementation Details Summary

Capacity Accreditation Resource Classes

Capacity Accreditation Resource Classes

- **The NYISO will annually review the list of CARCs and the assignment of Resources to CARCs for the upcoming Capability Year**
 - The NYISO will establish CARCs for the upcoming Capability Year based on the resource types that may participate in the ICAP Market in the upcoming Capability Year and initial CAF testing
 - The NYISO will post the final list of CARCs for the upcoming Capability Year to the NYISO Installed Capacity Market web page by November 30th of the year preceding the upcoming Capability Year
 - The CARC list will identify what combinations of participation models, elected Energy Duration Limitations, and resource characteristics will lead to the assignment of a Resource to a specific CARC
 - Each Resource will be assigned to a specific CARC for the upcoming Capability Year based on the combination of the Resource's participation model, elected Energy Duration Limitation, and resource characteristics for the upcoming Capability Year
 - Each Resource's CARC assignment will be finalized after the posting of the final list of CARCs for the upcoming Capability Year and prior to the posting of the CAFs for the upcoming Capability Year (see slide 13 for the CARC and CAF assignment timeline)
 - Each Resource will have the opportunity to review its CARC assignment before it is finalized by a deadline identified in the ICAP Event Calendar
- **As additional resource characteristics are incorporated into the IRM/LCR model and found to have an identifiable impact on a Resource's marginal reliability contribution, those characteristics will be used in establishing CARCs and determining a Resource's CARC assignment**
 - Possible examples include, but are not limited to, firm fuel status and start-up notification time requirements

Preliminary Capacity Accreditation Resource Classes

- Solar
- Onshore Wind
- Offshore Wind
- Landfill Gas
- 2-hour Energy Duration Limited¹
- 4-hour Energy Duration Limited^{1,2}
- 6-hour Energy Duration Limited¹
- 8-hour Energy Duration Limited¹
- Limited Control Run-of-River Hydro
- Large Hydro³
- Unlimited Conventional Resource⁴
- Conventional Resource with Non-Firm Fuel⁴
- Startup Notification Limited Conventional Resource⁴
- Startup Notification Limited Conventional Resource with Non-Firm Fuel⁴

¹ Energy Duration Limited CARCs will apply to resources with Energy Duration Limitations, such as Energy Storage Resources, Energy Limited Resources, and dispatchable Distributed Energy Resources, that do not belong to another CARC

² Special Case Resources (SCRs) will be assigned to the 4-hour Energy Duration Limited CARC for initial implementation of Capacity Accreditation. As modeling of SCRs in the IRM/LCR model changes to reflect the expected operations of SCRs in the NYISO market, a separate SCR CARC will be established

³ The Large Hydro CARC will apply to resources powered by hydraulic turbines that are not Limited Control Run-of-River Hydro or standalone pumped storage

⁴ Conventional resources will be separated into these classes as firm fuel and start-up notification requirement characteristics are incorporated into the IRM/LCR model. Next year's Modeling Improvements for Capacity Accreditation project will evaluate how to incorporate these characteristics into the IRM/LCR model and the criteria for assigning each conventional resource to the appropriate CARC based on its firm fuel status and start-up notification requirement characteristics

Capacity Accreditation Factors

Capacity Accreditation Factors

- **The NYISO will annually calculate the CAFs for each CARC for the upcoming Capability Year**
- **The NYISO will use the Locational Minimum Installed Capacity Requirement study model (“LCR model”) used to calculate the Locational Minimum Installed Capacity Requirements for the upcoming Capability Year, as the starting model to calculate the CAFs for the upcoming Capability Year**
 - The CAFs for each CARC for the upcoming Capability Year will be posted to the NYISO Installed Capacity Market web page by March 1st preceding the upcoming Capability Year
 - A CAF will be calculated for each CARC and each capacity zone (ROS, GHI, J, and K) to the extent an Installed Capacity Supplier in the CARC exists or is projected to exist in the capacity zone in the upcoming Capability Year
 - Each ICAP Supplier will be assigned the corresponding CAF for the Supplier’s assigned CARC and capacity zone in which the ICAP Supplier is qualified to supply Unforced Capacity to the NYCA
 - Each ICAP Supplier will be provided its CAF assignment by a deadline identified in the ICAP Event Calendar (see slide 13 for the CARC and CAF assignment timeline)
- **Utilizing the LCR model, the ISO will calculate each CAF using the Marginal Reliability Improvement (MRI) technique**
 - Through extensive testing, the NYISO determined the MRI technique sufficiently approximates the Effective Load Carrying Capability (ELCC) technique for calculating marginal reliability contributions and requires a fraction of the computational time

CARC and CAF Assignment Timeline

CARC and CAF Assignment Timeline^{1,2}

- **By August 1st**
 - A Resource can elect to change its Energy Duration Limitation and/or participation model for the upcoming Capability Year
 - The August 1 deadline for electing a different Energy Duration Limitation and/or participation model for the upcoming Capability Year exists in the ICAP Manual today
- **By September 30th**
 - The NYISO will post the preliminary CARC list for the upcoming Capability Year to the NYISO's website
- **By November 30th**
 - After receiving stakeholder feedback on the preliminary CARC list, the NYISO will post the final CARC list for the upcoming Capability Year to the NYISO's website
- **Approximately November 30th – March 1st**
 - The NYISO will assign each Resource to the applicable CARC for the upcoming Capability Year based on its Energy Duration Limitation, participation model, and resource characteristics for the upcoming Capability Year
 - During this window, each Resource will have the opportunity to review its CARC assignment before it is finalized by a date that will be identified in the ICAP Event Calendar

¹This annual timeline would begin August 2023 for implementation of Capacity Accreditation in the Capability Year starting May 2024

² Each Resource's derating factor will continue to be available to the Resource by the applicable date Identified in the ICAP Event Calendar for the upcoming Capability Period. Derating factors are calculated on a Capability Period basis in accordance with Section 4.5 of the ICAP Manual

CARC and CAF Assignment Timeline^{1,2}

- **By March 1st**
 - The NYISO will post the CAFs for each CARC for the upcoming Capability Year to the NYISO's website
- **By Mid-March**
 - The corresponding CAF will automatically be assigned to each Resource based on the Resource's assigned CARC for the upcoming Capability Year and capacity zone in which the Resource is qualified to supply Unforced Capacity to the NYCA
 - Each Resource will have the opportunity to review its assigned CAF before it is finalized by a date that will be identified in the ICAP Event Calendar
- **End of March**
 - The first auction for the upcoming Capability Year begins

¹This annual timeline would begin August 2023 for implementation of Capacity Accreditation in the Capability Year starting May 2024

² Each Resource's derating factor will continue to be available to the Resource by the applicable date Identified in the ICAP Event Calendar for the upcoming Capability Period. Derating factors are calculated on a Capability Period basis in accordance with Section 4.5 of the ICAP Manual

Resource Specific Derating Factors

Resource Specific Derating Factors

- **Generally, a Resource's UCAP will be determined by combining the Resource's ICAP, CAF, and resource specific derating factor as illustrated below**
 - $UCAP = \text{Adjusted ICAP} \times (1 - \text{resource specific derating factor})$
 - Where:
 - $\text{Adjusted ICAP} = \text{ICAP} * \text{CAF}$
 - $\text{ICAP} = \min(\text{DMNC}, \text{CRIS})$
 - So, $UCAP = \min(\text{DMNC}, \text{CRIS}) * \text{CAF} * (1 - \text{resource specific derating factor})$
- **Because the representative unit used to calculate the CAFs for CARCs comprised of availability-based Resources will be modeled with no random forced outages or forced derates, availability-based Resources can continue to utilize their existing resource specific derating factor calculations without any adjustment or double accounting of unavailability due to the introduction of CAFs**
 - Availability-based Resources include Resources participating in the ICAP Market as Generators, Control Area System Resources, Energy Limited Resources, Capacity Limited Resources, Behind-the-Meter Net Generation Resources, Energy Storage Resources, and dispatchable Distributed Energy Resources
- **Because the representative unit used to calculate the CAFs for CARCs comprised of IPRs or LCROR Hydro Resources will be modeled using weighted-average historic hourly production profiles, the resource specific derating factor calculation for IPRs and LCROR will be updated, as shown on the following slide, to avoid double accounting of unavailability due to the introduction of CAFs**

Resource Specific Derating Factors

- The resource specific derating factors for IPRs and LCROR Hydro Resources will be based on a comparison of the Resource's applicable average capacity factor for the Capability Period to the applicable average capacity factor for the same Capability Period of the representative unit used to calculate the Resource's CAF
 - The resource specific derating factor will be calculated according to a ratio-based approach or a difference-based approach, depending on which approach will result in the smallest difference between a Resource's effective capacity value and CAF¹
 - Ratio-based approach:
 - $UCAP = ICAP * CAF * (1 - \text{resource specific derating factor})$
 - $\text{Resource specific derating factor} = 1 - \text{Average Capacity Factor Ratio}$
 - $\text{Average Capacity Factor Ratio} = \frac{\text{Average Capacity Factor of Resource}}{\text{Average Capacity Factor of Representative Unit}}$
 - Difference-based approach:
 - $UCAP = ICAP * (CAF + \text{Average Capacity Factor Difference})$
 - $\text{Average Capacity Factor Difference} = \text{Average Capacity Factor of Resource} - \text{Average Capacity Factor of Representative Unit}$
 - Please refer to the revisions to Attachment J of the ICAP Manual for the detailed formulation of the resource specific derating factor calculation

¹ For background information on the new resource specific derating factor calculation, please refer to the [09/30/2022 ICAPWG presentation](#)

Annual Peak Load Window Review

Proposal for Annual Peak Load Window Review

- **MST 5.12.14.3 requires the NYISO to annually review the PLWs for the upcoming Capability Year and modify the PLWs if necessary**
- **The proposal for annually reviewing the Summer PLW involves analysis of the hourly LOLE for the upcoming Summer Capability Period, as calculated by the LCR model. If the PLW from the prior Summer Capability Period does not capture at least 90% of the hourly LOLE for the upcoming Summer Capability Period, the process requires a new Summer PLW to be established that would capture at least 90% of the hourly LOLE**
- **The NYISO proposes to maintain the existing Winter PLW (HB 16-21) until winter modeling approaches and assumptions are incorporated into the IRM/LCR model**
 - Once winter modeling approaches and assumptions are incorporated into the IRM/LCR model, the NYISO will re-evaluate utilizing the proposed Summer PLW process to determine the Winter PLW
- **The Summer and Winter PLWs will also be subject to review for consistency with expected hours of reliability risk based on NYISO operating experience and/or expected grid conditions**
 - If either PLW is inconsistent with the expected hours of reliability risk based on ISO review, the ISO will advise the NYISO Business Committee and the NYISO Operating Committee it has determined that a new Peak Load Window must be set. The new Peak Load Window must be approved by the NYISO Operating Committee and posted to the NYISO Installed Capacity Market web page by March 1 preceding the upcoming Capability Year.
- **The final PLWs for the upcoming Capability Year will be posted to the NYISO Installed Capacity Market web page by March 1st**

Energy Duration Limitation Proposal

EDL Proposal for Capacity Accreditation

- **The existing EDL options currently detailed in MST 5.12.14 sunset with the Capability Year that begins in May 2024**
- **The NYISO is proposing to continue to allow Resources with a limited daily run-time less than 24 hours to elect a 2-, 4-, 6-, or 8-hour EDL, as described in Section 4.1.1 of the ICAP Manual**
 - If the NYISO observes reliability needs extending past 8 hours, the NYISO will consider adding a 10-hour EDL election option
- **Because the annually determined PLW may be shorter than the maximum allowable EDL, the NYISO is proposing corresponding bidding, scheduling, and notification requirements and initial DMNC testing requirements for Resources with EDLs longer than the PLW**
 - Revisions to MST 5.12.7 are necessary to incorporate the bidding, scheduling, and notification requirements for Resources with EDLs longer than the PLW. The corresponding revisions to MST 5.12.7 are included with today's meeting materials for recommendation to the Management Committee for approval
- **Derating factors for Resources with EDLs will continue to be calculated over the hours corresponding to each Resource's bidding, scheduling, and notification requirements**

CAF Interaction with ICAP Demand Curves

CAF Interaction with ICAP Demand Curves

- Section 5.5 of the ICAP Manual details the current calculation of the ICAP Demand Curve reference point prices as follows:

$$RP_z = \frac{ARV_z * AssmdCap_z}{6 * DAF_z * [SDMNC_z * \left(1 - \frac{LOE_z - 1}{ZCPR_z - 1}\right) + WDMNC_z * \left(1 - \frac{LOE_z - 1 + WSR_z - 1}{ZCPR_z - 1}\right)]}$$

- The NYISO is proposing to remove the applicable DAF from the ICAP Demand Curve reference point price calculation formula in the ICAP Manual
 - With implementation of Capacity Accreditation in Capability Year 2024-2025, DAFs will no longer apply. Additionally, the applicable DAF for the current ICAP Demand Curves is 1. Therefore, removing the DAF will not impact the current ICAP Demand Curve reference point prices
- Given that Capacity Accreditation Factors (CAFs) will not be determined until March for the upcoming Capability Year and ICAP Demand Curves are required to be posted by (or, in the case of the first year of each reset, filed by) November 30th prior to the start of each Capability Year, the NYISO does not propose to include use of the applicable CAF in determining the ICAP Demand Curve reference point prices
 - For example, the CAFs for Capability Year 2024-2025 will be determined in March 2024
- Instead, the NYISO proposes to account for the applicable CAF as part of translating the ICAP Demand Curves to UCAP terms
 - Incorporating the CAF into the ICAP to UCAP translation will produce the same UCAP reference point prices that would result if the CAF had been incorporated into the ICAP Demand Curve reference point prices but avoids any potential for adverse impacts to the November 30th deadline to post (or file) updated (or new) curves

Translation Factors for IRM/LCR Studies and Deliverability Testing

Translation Factors

- Translation factors are currently used as part of the ICAP-to-UCAP translation for 1) the shifting methodology carried out in the IRM/LCR studies and 2) modeling resources for deliverability studies
- The NYISO calculates translation factors for both Intermittent Power Resources and non-Intermittent Power Resources following ISO procedure and NYSRC Policy
- The current ISO procedure to calculate translation factors for Intermittent Power Resources utilizes the existing market UCAP calculation (detailed in Section 4.5 of the ICAP Manual) applied to the 5-year-historical production of the resource
- With the implementation of Capacity Accreditation, the market UCAP calculation for all Resources will reflect the use of marginal CAFs
 - Therefore, a separate ISO procedure will be required to calculate the translation factors for Intermittent Power Resources for use in the IRM/LCR and deliverability studies
 - The current ISO procedure for calculating translation factors for non-Intermittent Power Resources (i.e., using a blended average of the derating factors of non-Intermittent Power Resources) will not reflect the use of marginal CAFs. Therefore, the current ISO procedure for non-Intermittent Power Resources will be maintained

Translation Factors

- **The NYISO has proposed revisions to OATT Attachment S to clarify the translation factor methodology used in deliverability studies for different resource classes**
 - The revisions to OATT Attachment S were approved by the NYISO Management Committee as part of the interconnection changes for the Internal Controllable Lines project. The approved revisions will be filed with FERC early next year
- **The proposed ISO procedure to calculate the translation factors for IPRs and LCROR Hydro is detailed in a new Attachment N to the ICAP Manual**
 - Attachment N is included with today's meeting materials for reference. Attachment N will be included in the ICAP Manual Appendix following the FERC approval of the associated revisions to OATT Attachment S, described above

Next Steps

Next Steps

- **December 21st - Management Committee**
 - **Vote on the proposed revisions to MST 5.12.7**
- **File the informational filing, summarizing the final implementation details for Capacity Accreditation, with FERC within 90-days**

Questions?

Our Mission & Vision



Mission

Ensure power system reliability and competitive markets for New York in a clean energy future



Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

Appendix

Definitions

- **CAF – Capacity Accreditation Factor**
- **CARC – Capacity Accreditation Resource Class**
- **EDL – Energy Duration Limitation**
- **LCROR – Limited Control Run of River**
- **IPR – Intermittent Power Resource**
- **LOLE – Loss of Load Expectation**
- **PLW – Peak Load Window**

ICAP Manual and Tariff Revisions

ICAP Manual and Tariff Revisions - Summary

- Comprehensive list of existing sections revised, and new sections proposed:

Document	Section	Section Title
ICAP Manual	2.5	The NYCA Minimum Unforced Capacity Requirement
	2.6	Locational Minimum Installed Capacity Requirements
	4.1.1	Energy Duration Limitations and Duration Adjustment Factors for Installed Capacity Suppliers
	4.1.3	Provisions Applicable to Installed Capacity Suppliers that Participate as Co-located Storage Resources (CSR)
	4.2.1	DMNC Test Periods
	4.2.2.2	Installed Capacity Suppliers with an Energy Duration Limitation
	4.5	Calculation of the Amount of Unforced Capacity each Resource may Supply to the NYCA
	4.8.1	Generators and System Resources
	4.8.2	Energy Limited and Capacity Limited Resources
	4.12	Special Case Resources
	4.15.3	Net-UCAP Calculation
	5.5	Demand Curve and Adjustments
	7	Annual Process to Establish Capacity Accreditation Resource Classes, Capacity Accreditation Factors, and Peak Load Windows

Document	Section	Section Title
ICAP Manual Appendix	Attachment M	Procedure to Apply for a Capacity Limited Resource (CLR), Energy Limited Resource (ELR), Ambient Condition-Dependent Classification and/or for an Energy Duration Limitation
	Attachment J	Unforced Capacity for Installed Capacity Suppliers
MST	5.12.7	Availability Requirements
For future addition to the ICAP Manual Appendix	Attachment N	Procedure to Calculate Translation Factors for an Intermittent Power Resource or Limited Control Run of River Hydro Resource

- The following slides summarize the revisions in each section and the new proposed sections

ICAP Manual and Tariff Revisions

■ ICAP Manual - Section 2.5-2.6

- Revised for clarity and to reflect the replacement of “Adjusted Installed Capacity” with “Installed Capacity” in the translation of ICAP requirements to UCAP, beginning with the 2024 Capability Year
 - This revision reflects the updates to MST 5.10 and MST 5.11 accepted by FERC on August 10th, 2022
- Sunsets the current calculation of Adjusted Installed Capacity with the 2024 Capability Year
 - The new calculation of Adjusted Installed Capacity is included in the revisions to Section 4.5 of the ICAP Manual

ICAP Manual and Tariff Revisions

■ ICAP Manual - Section 4.1.1

- Revised to reflect the sunseting of the Duration Adjustment Factors for ICAP Suppliers with Energy Duration Limitations and existing Peak Load Windows with the 2024 Capability Year
 - The annual review process for establishing the Peak Load Windows beginning with the 2024 Capability Year is included in the new Section 7.3 of the ICAP Manual

■ ICAP Manual - Section 4.1.3

- Removed empty bullet

ICAP Manual and Tariff Revisions

- **ICAP Manual - Section 4.2.1 and Section 4.2.2.2**
 - Revised to reflect the DMNC test period requirements for ICAP Suppliers with Energy Duration Limitations longer than the Peak Load Window
- **MST 5.12.7, Sections 4.8.1 - 4.8.2 of the ICAP Manual, and ICAP Manual Attachment M**
 - Revised to reflect the bidding, scheduling, and notification requirements for ICAP Suppliers with Energy Duration Limitations longer than the Peak Load Window

ICAP Manual and Tariff Revisions

■ ICAP Manual - Section 4.5

- Revised to:
 - Include the new calculation of Adjusted Installed Capacity beginning with the 2024 Capability Year
 - A Resource's Adjusted ICAP will be equal to the Resource's ICAP multiplied by its assigned CAF (as detailed in MST 5.12.14.2)
 - Update the calculation of UCAP for IPRs and LCROR Hydro to reflect the new resource specific derating factor methodology beginning with the 2024 Capability Year
 - Update the initial UCAP calculation for new generating Resources to reflect the use of CAFs
 - Remove empty table on page 63

■ ICAP Manual - Section 4.12

- Revised to replace the Duration Adjustment Factor with the applicable Capacity Accreditation Factor for SCRs beginning with the 2024 Capability Year

■ ICAP Manual - Section 4.15.3

- Specified that a BTM:NG Resource's assigned CAF would be applied to the BTM:NG Resource's Gen UCAP

ICAP Manual and Tariff Revisions

■ ICAP Manual - Section 5.5

- Revised to:
 - Remove the Duration Adjustment Factor of the peaking plant from the calculation of the monthly reference point prices for the ICAP Demand Curves
 - Clarify the translation of the quantities on the ICAP Demand Curve to UCAP terms
 - Update the translation of the ICAP Demand Curve prices to UCAP terms to include the Capacity Accreditation Factor and applicable derating factor of the peaking plant for the respective ICAP Demand Curve beginning with the 2024 Capability Year

ICAP Manual and Tariff Revisions

■ ICAP Manual – Section 7

- This is a new section describing the annual process for establishing CARCs, calculating CAFs, assigning CARCs and CAFs to ICAP Suppliers, and the annual PLW review process
 - Section 7.1 covers the annual process for establishing CARCs and assigning each ICAP Supplier to the appropriate CARC
 - Section 7.2 covers the annual process for calculating CAFs and assigning the appropriate CAF to each ICAP Supplier
 - Section 7.2.1 details the MRI technique for calculating CAFs and the representative unit modeling for each type of CARC
 - Section 7.3 covers the annual PLW review process
- All processes in this section will be implemented beginning with the 2024 Capability Year

ICAP Manual and Tariff Revisions

■ ICAP Manual – Attachment J

- Sunsets the existing UCAP calculations with the 2024 Capability Year
 - Small ministerial edits to Sections 3.1.1(a), Sections 3.1.2(a), 3.2.2(a), and 3.7.2(a) of the existing UCAP calculations added for clarification
- Beginning with the 2024 Capability Year:
 - The Duration Adjustment Factor term in each UCAP formula is replaced with the Installed Capacity Supplier's assigned CAF
 - The UCAP calculation for IPRs and LCRORs is revised to reflect the new resource specific derating factor methodology
 - The Peak Load Window term is replaced with the newly defined ICAP Obligation Hours term for use in measuring the availability of resources with Energy Duration Limitations
 - ICAP Obligation Hours: “The hours that an Installed Capacity Supplier must bid their ICAP obligation (ICAP Equivalent of UCAP Sold or Certified in the most recent ICAP Spot Market Auction) into the DAM. The ICAP obligation hours for Installed Capacity Suppliers with Energy Duration Limitations are described in Sections 4.8.1 and 4.8.2 of this ICAP Manual.”
- Since most components of the existing UCAP calculations remain the same beginning with the 2024 Capability Year, changes from the existing UCAP calculations are highlighted in yellow in today's meeting materials

ICAP Manual and Tariff Revisions

■ ICAP Manual – Attachment N

- This is a new Attachment describing the procedure for calculating translation factors for IPRs and LCROR Hydro for use in the shifting methodology in the IRM and LCR studies and for studying resources in deliverability testing
- Attachment N will be added to the ICAP Manual Appendix following the FERC approval of the associated revisions to OATT Attachment S, as described on slide 23

Previous Discussions

Previous Discussions

Date	Working Group	Discussion Points and Links to Materials
August 5, 2021	ICAPWG	Review of Existing Capacity Accreditation Rules: https://www.nyiso.com/documents/20142/23590734/20210805%20NYISO%20-%20Capacity%20Accreditation%20Current%20Rules%20Final.pdf
August 9, 2021	ICAPWG	Capacity Accreditation Proposal: https://www.nyiso.com/documents/20142/23645207/20210809%20NYISO%20-%20Capacity%20Accreditation%20Straw%20Proposal.pdf
August 30, 2021 & August 31, 2021	ICAPWG	Capacity Accreditation Proposal: https://www.nyiso.com/documents/20142/24172725/20210830%20NYISO%20-%20Capacity%20Accreditation_v10%20(002).pdf
September 28, 2021	ICAPWG	Comprehensive Mitigation Review Proposal and Tariff: https://www.nyiso.com/documents/20142/24925244/20210928 NYISO - CMR Final.pdf/769828a1-f224-0140-240b-0762ec18efec
October 18, 2021	ICAPWG	Comprehensive Mitigation Review Proposal and Tariff Updates: https://www.nyiso.com/documents/20142/25440628/20211018%20NYISO%20-%20CMR%20v9.pdf/4475e775-159c-75c7-9cf8-7050dad9a363
October 29, 2021	ICAPWG	Comprehensive Mitigation Review Proposal and Tariff Updates: https://www.nyiso.com/documents/20142/25780701/20211029%20NYISO%20-%20CMR.pdf/ea8494b0-0860-b260-89b6-0c418d28a91d

Previous Discussions (cont.)

Date	Working Group	Discussion Points and Links to Materials
November 2, 2021	ICAPWG	<p>NYISO CMR Consumer Impact Analysis: https://www.nyiso.com/documents/20142/25835955/CIA%20-%20Comprehensive%20Mitigation%20Review.pdf/36d447d4-5b33-8ab1-2654-90a529ff1dfe</p> <p>Potomac CMR Consumer Impact Analysis: https://www.nyiso.com/documents/20142/25835955/MMU%20ICAP%20Accreditation%20Consumer%20Impact%20Analysis%2011-02-2021.pdf/637ba21e-db75-a4c1-5b41-f770dd26e529</p>
November 9, 2021	BIC	<p>Comprehensive Mitigation Review Proposal and Tariff: https://www.nyiso.com/documents/20142/25928340/5%2020211109%20NYISO%20-%20CMR%20v3.pdf/84d8b429-126c-68dd-0308-caa50886de92</p> <p>Comprehensive Mitigation Review Approved Motion: https://www.nyiso.com/documents/20142/25928340/110921%20bic%20final%20motions.pdf/785d5869-1e04-9f97-e330-e2e632ae7a9c</p>
November 17, 2021	MC	<p>Comprehensive Mitigation Review Proposal and Tariff: https://www.nyiso.com/documents/20142/26119798/05%20CMR.pdf/11217ade-152a-74a2-d478-6b5ae5e21207</p> <p>Comprehensive Mitigation Review Approved Motion: https://www.nyiso.com/documents/20142/26119798/111821%20MC_Final_Motions.pdf/bbf15d66-4108-7173-1596-9b20677914e6</p>
January 20, 2022	ICAPWG	<p>2022 Market Projects: https://www.nyiso.com/documents/20142/27799605/2022%20Projects%20Presentation.pdf/4553eb95-177d-7cbc-f2fe-7754b7c66644</p>

Previous Discussions (cont.)

Date	Working Group	Discussion Points and Links to Materials
February 3, 2022	ICAPWG	<p>Improving Capacity Accreditation Plan: https://www.nyiso.com/documents/20142/28227906/Improving%20Capacity%20Accreditation%20Plan.pdf/92560e95-5703-4c57-45cb-7706c36f4656</p>
February 24, 2022	ICAPWG	<p>Improving Capacity Accreditation Project Kick Off: https://www.nyiso.com/documents/20142/28687884/Capacity%20Accreditation%20Kick%20off%2002-24-22%20v7.pdf/5ab742c4-650b-5094-6a22-d41a2f29da6f</p> <p>MARS Review (GE Consulting): https://www.nyiso.com/documents/20142/28687884/GE-Support%20for%20NYISO%20Capacity%20Accreditation%20Project_0224-v4.pdf/d302df1c-5607-16a8-ba01-fba700d5bbd1</p>
March 3, 2022	ICAPWG	<p>CMR Draft Deficiency Response: https://www.nyiso.com/documents/20142/28897222/CMR%20Deficiency%20Draft%20Responses%2003-03%20ICAPWG.pdf/0a3c8303-515e-7725-dee5-a9dda1398672</p>
March 16, 2022	ICAPWG	<p>Capacity Accreditation Resource Class Criteria, Resource-Specific Derating Factors, and Areas of Needed Change: https://www.nyiso.com/documents/20142/29177064/Capacity%20Accreditation%2003-16-22%20v7.pdf/b26e6a99-5f4e-29cc-c60c-47608c78c983</p>
March 31, 2022	ICAPWG	<p>Capacity Accreditation Representative Unit Modeling: https://www.nyiso.com/documents/20142/29607069/2%20CA%20Representative%20Unit%20Modeling%2003-31-22%20ICAPWG.pdf/1c3af8ac-625a-5066-3977-8c3d9ae0ddda</p> <p>ELCC and MRI Overview (GE): https://www.nyiso.com/documents/20142/29607069/3%20GE-Support%20for%20NYISO%20Capacity%20Accreditation%20Project_0331.pdf/08355c9a-d104-e1b6-6b8a-8266c61b74a3</p>

Previous Discussions (cont.)

Date	Working Group	Discussion Points and Links to Materials
April 19, 2022	ICAPWG	Capacity Accreditation Adjusted Resource Specific Derating Factors and External Resources: https://www.nyiso.com/documents/20142/30025560/04-19-22%20CA%20Adjusted%20Derating%20Factors%20and%20External%20Resources.pdf/5dd1f4b2-092d-6a6a-3b99-4d768ea6c5eb
April 28, 2022	ICAPWG	Preliminary Capacity Accreditation Resource Classes: https://www.nyiso.com/documents/20142/30276257/04-28-22%20Capacity%20Accreditation%20-%20Preliminary%20CARCs.pdf/c82c47c5-28c2-cf19-c602-16bf3cfc4aca Preliminary ELCC and MRI Results (GE): https://www.nyiso.com/documents/20142/30276257/GE-Support%20for%20NYISO%20Capacity%20Accreditation%20Project_0428.pdf/3c761f16-7bc0-b469-b1e8-c2a69feb58ef
May 24, 2022	ICAPWG	Updated Preliminary CARCs and Annual Process to Establish CARCs: https://www.nyiso.com/documents/20142/30888946/3%2005-24-22%20Capacity%20Accreditation.pdf/cd61d855-f634-0fe8-6109-7d8c0547beda Additional Preliminary ELCC and MRI Results (GE): https://www.nyiso.com/documents/20142/30888946/2%20GE-Support%20for%20NYISO%20Capacity%20Accreditation%20Project_0524.pdf/0976330d-f4eb-4db3-2613-c8be9baf452
June 16, 2022	ICAPWG	Sensitivity Scenarios and Seasonal CAFs: https://www.nyiso.com/documents/20142/31532822/2%20Capacity%20Accreditation%20v6.pdf/4ffe4fa9-bdaf-2c23-77be-d49ed04c5ea5

Previous Discussions (cont.)

Date	Working Group	Discussion Points and Links to Materials
June 28, 2022	ICAPWG	<p>Annual Peak Load Window (PLW) Review and Energy Duration Limitation Proposals: https://www.nyiso.com/documents/20142/31790818/06-28-22%20PLW%20and%20EDL%20Proposal.pdf/ffca7c8a-767e-3de1-9b46-404f661351b3</p> <p>Revised Shape-based Resource Results and ELR Modeling Functionality in MARS (GE): https://www.nyiso.com/documents/20142/31790818/GE-Support%20for%20NYISO%20Capacity%20Accreditation%20Project_0628.pdf/999c7dfa-0b5d-a6bc-a57a-b35a1cda5aa4</p>
July 21, 2022	ICAPWG	<p>Capacity Accreditation: Project Schedule Update: https://www.nyiso.com/documents/20142/32356084/7-21-2022%20ICAPWG%20Project%20Schedule.pdf/958ef86a-12de-32a1-c115-5c1af39abb54</p>
July 28, 2022	ICAPWG	<p>Capacity Accreditation: SCR CAF Results and Proposal: https://www.nyiso.com/documents/20142/32491922/2%207282022%20ICAPWG%20Capacity%20Accreditation.pdf/3f991228-5011-7cc2-cfd3-a7762fa8c8f6</p> <p>Sensitivity Scenario Methodologies (GE): https://www.nyiso.com/documents/20142/32491922/3%20GE-Support%20for%20NYISO%20Capacity%20Accreditation%20Project_0728.pdf/9fd89cbc-2baa-3c54-dc74-17c2e8cf588a</p>
August 9, 2022	ICAPWG	<p>Modeling Discussion and ICAP Manual Revision Process Options: https://www.nyiso.com/documents/20142/32687686/08-09-22%20Capacity%20Accreditation.pdf/1009a4dc-bb9f-1f3b-bb34-908fd8d5704d</p>

Previous Discussions (cont.)

Date	Working Group	Discussion Points and Links to Materials
August 29, 2022	ICAPWG	<p>Annual CAF Proposal, Winter PLW Assessment, and CAF Interaction with the ICAP Demand Curves: https://www.nyiso.com/documents/20142/32977661/Capacity%20Accreditation%2008292022%20ICAPWG.pdf/13c04d12-f77f-3184-15c4-8f0b22897f3d</p> <p>Compiled Preliminary CAF Results: https://www.nyiso.com/documents/20142/32977661/GE-Support%20for%20NYISO%20Capacity%20Accreditation%20Project_LCR-results.pdf/e9fdeb01-1ee0-7651-6a3f-0823aedcef1d</p>
September 30, 2022	ICAPWG	<p>Resource Specific Derating Factor Proposal for Performance-based Resources, CAF Interaction with ICAP Demand Curves, ISO Review of Peak Load Windows, and Modeling CAFs At Criteria vs Level of Excess: https://www.nyiso.com/documents/20142/33520089/9-30-2022%20ICAPWG%20Capacity%20Accreditation%20v3.pdf/0178b3b4-4398-ce4a-3197-224e24086c51</p> <p>Capacity Value Results for 2022 LCR at LOE and 2022 RNA 2030 Base Case (GE): https://www.nyiso.com/documents/20142/33520089/GECCapacityAccreditation-LOEandBaseRNA-results%20v5%20-%20clean.pdf/4e05032a-91c3-ff78-08a2-9202efead08a</p> <p>Consumer Impact Analysis Methodology: https://www.nyiso.com/documents/20142/33520089/CIA%20Methodology%20-%20Capacity%20Accreditation_Final.pdf/37c9b5f5-ab29-8eb0-afd2-fdc369f097f5</p>
October 19, 2022	ICAPWG	<p>Translation Factors for IRM/LCR Studies and Deliverability Testing, Sensitivity Scenario Update, and ICAP Market Resource Adequacy 5 Year Plan: https://www.nyiso.com/documents/20142/33857891/02a_10-19-22%20ICAPWG%20Capacity%20Accreditation.pdf/cae2063d-76d6-b4d3-25d5-fadd0c5e1f50</p> <p>Compiled CAF Results (Excel file): https://www.nyiso.com/documents/20142/33857891/02b_10-19-22%20ICAPWG%20Compiled%20CAF%20Results.xlsx/cf5ad8f9-b4fb-9f44-9df2-672f9a190331</p> <p>Capacity Accreditation - Consumer Impact Analysis: https://www.nyiso.com/documents/20142/33857891/03_Consumer%20Impact%20-%20Capacity%20Accreditation.pdf/1e9097c6-c0ae-b137-dd44-15ce1f5a7841</p>

Previous Discussions (cont.)

Date	Working Group	Discussion Points and Links to Materials
October 27, 2022	ICAPWG	<p>Proposed Modeling Technique for Calculating CAFs and Summary of Initial ICAP Manual and Tariff Revisions - Reposted: https://www.nyiso.com/documents/20142/34087499/10-27-22%20ICAPWG%20Capacity%20Accreditation%20v2%20-%20repost.pdf/23474d78-642b-c476-8f4d-26953fe57bd5</p> <p>ICAP Manual Revisions – First Set: https://www.nyiso.com/documents/20142/34087499/ICAP%20Manual%20Revisions%20for%20Discussion%20v3.pdf/f69334aa-da69-54dd-a805-9f2148439561</p> <p>ICAP Manual Attachment Revisions – First Set: https://www.nyiso.com/documents/20142/34087499/ICAP%20Manual%20Attachments%20v2.pdf/e1e2ec96-4cfc-fb78-01de-c8a97e2ed449</p> <p>Updated Compiled CAF Results (Excel file): https://www.nyiso.com/documents/20142/34087499/10-27-22%20ICAPWG%20Compiled%20CAF%20Results%20v3.xlsx/46982a75-2fac-fcc6-01a8-ae9161edb742</p> <p>Capacity Value Results for 2022 RNA 2030 Cases and IRM 2023 PBC Cases – Reposted (GE): https://www.nyiso.com/documents/20142/34087499/GEEC-CapacityAccreditation-RNA-and-2023-PBC-results%20v4%20-%20repost.pdf/2ecbb723-7a84-cd0f-b8a5-ae385a80214b</p>

Previous Discussions (cont.)

Date	Working Group	Discussion Points and Links to Materials
November 8, 2022	ICAPWG	<p>Capacity Accreditation ICAP Manual & Tariff Revisions: https://www.nyiso.com/documents/20142/34285499/7b%20ICAPWG%20Capacity%20Accreditation%20-%20ICAP%20Manual%20and%20Tariff%20Revisions.pdf/4591f7ee-d6a6-8559-01ca-a066bcc559a1</p> <p>ICAP Manual Revisions - Full Set: https://www.nyiso.com/documents/20142/34285499/7d%20ICAP%20Manual%20Revisions%20-%20Full%20Set%20v2.pdf/aaeb115e-de81-0411-76b3-9a4f0c0302fc</p> <p>ICAP Manual Attachments - Full Set: https://www.nyiso.com/documents/20142/34285499/7c%20ICAP%20Manual%20Attachments%20-%20Full%20Set%20v2.pdf/3cb7f313-1064-dfc7-1da5-88eb152865eb</p> <p>Tariff Revisions to MST 5.12.7: https://www.nyiso.com/documents/20142/34285499/7e%20MST%205.12.pdf/b030d99a-54b4-f52a-9b61-e51c585065a2</p> <p>Capacity Accreditation - Updated CIA – Reposted: https://www.nyiso.com/documents/20142/34285499/11-08-22%20ICAPWG%20Capacity%20Accreditation%20-%20Updated%20CIA%20-%20repost.pdf/0e08be26-8bd5-76da-92a3-45867136f3d0</p> <p>Capacity Accreditation Market Design Summary: https://www.nyiso.com/documents/20142/34285499/7%20ICAPWG%20Capacity%20Accreditation%20-%20Market%20Design%20Summary.pdf/aa364bb3-766b-19fd-d5b3-dfc6af730e89</p>

Previous Discussions (cont.)

Date	Working Group	Discussion Points and Links to Materials
November 21, 2022	ICAPWG	<p>Capacity Accreditation: Updated ICAP Manual & Tariff Revisions and 2023 IRM PBC CAF Results Overview: https://www.nyiso.com/documents/20142/34549258/11-21-22%20ICAPWG%20Capacity%20Accreditation%20Presentation.pdf/5abfd875-d76e-27e9-d7a3-3b73393d2c13</p> <p>ICAP Manual Revisions - Updated: https://www.nyiso.com/documents/20142/34549258/ICAP%20Manual%20Revisions%20-%2011-21-22%20ICAPWG%20v3.pdf/abe07efd-5b64-8285-7d9e-a85e5de2e858</p> <p>ICAP Manual Attachments - Updated: https://www.nyiso.com/documents/20142/34549258/ICAP%20Manual%20Appendix%20-%2011-21-22%20ICAPWG.pdf/95c84259-6ceb-522a-da00-79441f8422a1</p> <p>Updated Tariff Revisions to MST 5.12.7: https://www.nyiso.com/documents/20142/34549258/MST%205.12%2011-21-22%20ICAPWG%20v2.pdf/f538e679-2af3-c007-cf72-1700e14df542</p> <p>ICAP Manual Attachment N: https://www.nyiso.com/documents/20142/34549258/ICAP%20Manual%20Attachment%20N.pdf/4299055a-0d2c-a0c3-b423-50d555e46baf</p>
December 6, 2021	ICAPWG	<p>Capacity Accreditation: Updated ICAP Manual & Tariff Revisions: https://www.nyiso.com/documents/20142/34833356/2%2012-06-22%20ICAPWG%20Capacity%20Accreditation%20-%20ICAP%20Manual%20Revision%20Updates%20v2%20clean.pdf/b3affad0-a8cf-842b-f451-99c86ab010b3</p> <p>ICAP Manual Revisions - Updated: https://www.nyiso.com/documents/20142/34833356/2a%20ICAP%20Manual%20Revisions%20-%2012-06-22%20ICAPWG%20v2%20-%20clean.pdf/7cd896a2-e59c-ce12-d33e-ba5bb0cefd0</p> <p>ICAP Manual Attachments - Updated: https://www.nyiso.com/documents/20142/34833356/2b%20ICAP%20Manual%20Appendix%20-%2012-06-22%20ICAPWG%20v1.pdf/a45b8b27-96bd-571a-5497-f70e908a648b</p>