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Independent System Operator

# Modeling Improvements for Capacity Accreditation: Natural Gas Constraints

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## ICAPWG/MIWG

10/10/2023

# Agenda

- Review
- Response to Stakeholder Feedback
  - EFORd Double Counting
  - Clarification on Testing for Dual Fuel Units
  - In/Out of Control Loss of Firm Status
  - Loss/Restoration of Firm Status
- Liquid Receipt Point Guidance
- Additive Arrangements
- Next Steps

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# Review

# Review

- The primary purpose of this market design effort is to put in an administrative process for units to make a CARC election based on their anticipated fuel supplies and to develop eligibility requirements for firm units
- While the ISO understands and appreciates the need for additional CARCs to recognize the contributions of units with less firm supply than required, until the Resource Adequacy model evolves to capture issues related to winter fuel availability, creating further subdivisions in addition to the proposed CARCS is infeasible
- However, the ISO is required to continually evolve the CARCs based on the Resources and/or Aggregations that are expected to participate in the ICAP Market in the upcoming Capability Year and initial assessments of expected marginal reliability contributions
- Additional Note: Implementation of this market design will take place May 1st, 2025

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# Response to Stakeholder Feedback

# Response to Stakeholder Feedback

- **At the last ICAPWG stakeholders raised concerns about a few different items including**
  - EFORd double counting
  - Clarification on testing for dual fuel units
  - Loss and restoration of firm Status
  - In/out of control loss of Firm Status

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# EFORd Double Counting

- Outage double counting was discussed during the Gas Constraints Whitepaper Update at the May 30th NYSRC ICS meeting
- The ISO performed an analysis comparing GADS data and operational reports on gas unavailability and determined that the "lack of fuel" cause code is used infrequently and that GADs does not appear to capture gas constraints resulting in little risk of double counting forced outages
- Excluding lack of fuel events from GADs when calculating EFORd was raised as a future possibility but may not be necessary at this point and the ISO will continue to monitor the use of the cause code

Link to May 30th ICS Presentation: https://www.nysrc.org/wp-content/uploads/2023/07/11_ICS_GasConstraintsWhitepaperUpdate_2023.05.30_v415826.pdf

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# Clarification on Testing for Dual Fuel Units

- **Dual fuel units electing to the firm CARC via their alternate fuel will be required to submit a normal DMNC test in addition to a 1-hour test on their alternate fuel demonstrating max output**
  - Operational data may be used in lieu of either test but must have occurred during the current Winter Capability Period (anytime during the month of November) or from the immediately preceding Winter Capability Period
- **<u>ICAP values will be set based on the minimum value of these two tests</u>**

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# Loss and Restoration of Firm Status

- **All units that lose their firm status will be required to inform the ISO of the loss of status**
  - Units that lost their firm status for a reason that was out of their control, as determined by the NYISO, will have 14 days to attempt to restore their firm status
    - Those units that are unable to restore firm status will only be able to offer UCAP into the Capacity Market at the non-firm level but will not be subject to the shortfall penalty
- **Units whose loss of firm status was due to circumstances within their control, as determined the NYISO, will only be able to offer UCAP into the Capacity Market at the non-firm level and will be subject to the shortfall penalty**

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# In/Out of Control Loss of Firm Status

- **Within Unit Control:**
  - Unable to substantiate expected firm status
  - Unable to get gas from receipt point
  - Sold firm rights to another MP
  - Other
- **Out of Unit Control:**
  - Force Majeure
  - Contract(s) broken by supplier
  - Other
- **Since every contingency cannot be accounted for, the ISO retains discretion in deeming whether an instance not detailed in this list is within/not within unit control**
  - If a MP disagrees with the ISOs determination, as previously mentioned, they will have the NYISO's Expedited Dispute Resolution Procedures at their disposal

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# Liquid Receipt Point Guidance

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- At the last ICAPWG the ISO committed to returning with guidance on what constitutes a liquid receipt point
- A liquid receipt point is generally one where long-term gas supply contracts are available and where the price of natural gas is lower than oil
  - Units that wish to elect to the firm CARC using a contract with a location that does not have the characteristics of a liquid receipt point may do so if they have also procured gas supply contract(s) for their fully capacity value for the months of Dec., Jan. and Feb.
- These initial considerations are a starting point, and the ISO will provide updated guidance when operational experience indicates it is needed.
- Individual units will have discretion in their choice of contracts/receipt points
  - Units that are unavailable due to inability to get gas will be subject to an ICAP Shortfall penalty and will lose their firm status for the remainder of the Winter Capability period

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# Additive Arrangements

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- At the 9/20 ICAPWG the ISO promised to return with additional details on additive arrangements
- Dual fuel units unable to meet the firm requirements on either their primary or alternate fuel may have the firm portions of each fuel assessed additively so long as the combination of firm supply across both primary and secondary fuels allows the unit to meet its capacity value across Dec., Jan. and Feb.
- Reminder: All units electing to the firm CARC, will need to explain how their contracts allow the unit to meet the applicable requirements based on its operational characteristics when they go to substantiate their fuel supplies with the ISO

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# Next Steps

# Next Steps

- Return to a ICAPWG to continue the discussion with stakeholders.
- For any questions or feedback please email ntubbs@nyiso.com

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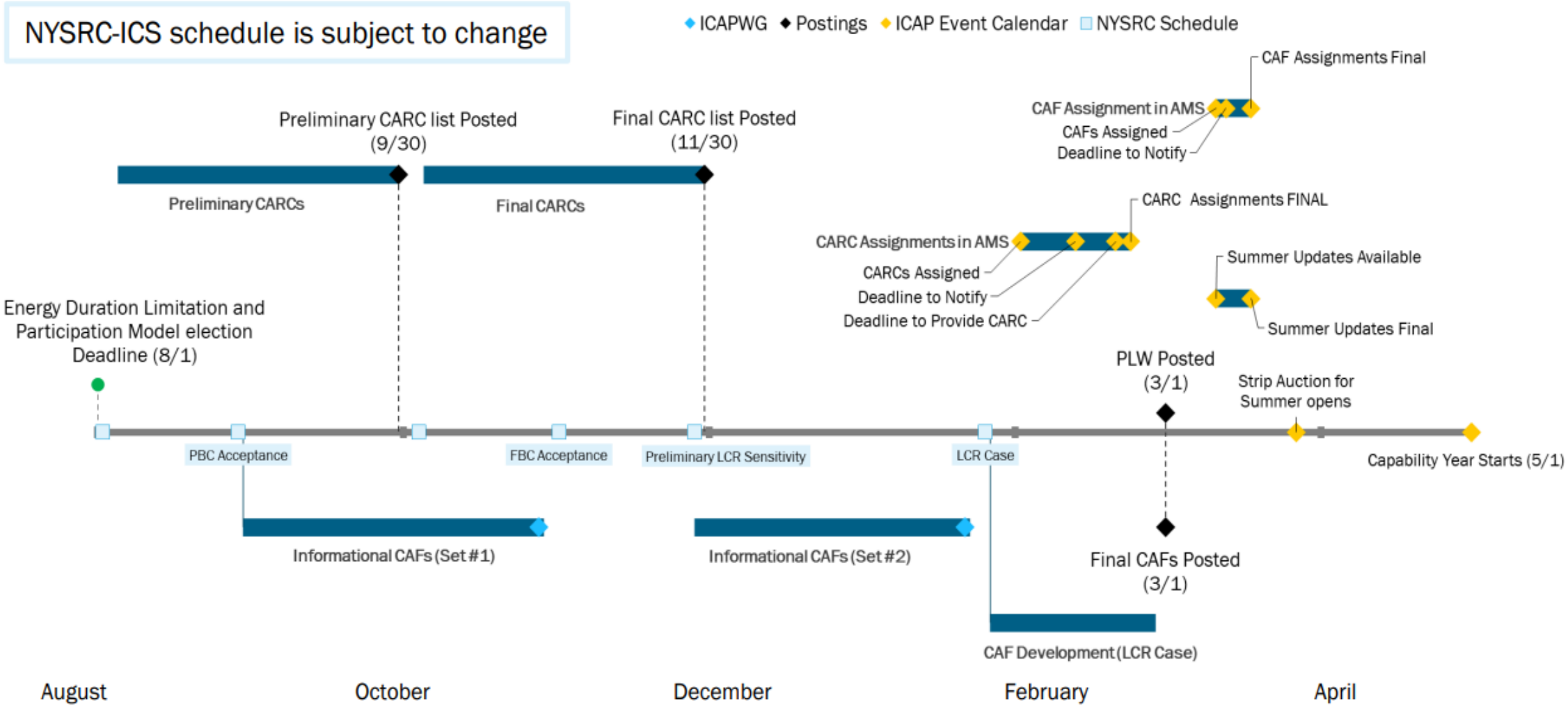
# Appendix

# Capacity Accreditation Timeline

NYSRC-ICS schedule is subject to change




*Approximate timeline for illustrative purposes, actual dates may change

# Previous Discussions

# Previous Discussions on Modeling Improvements for Capacity Accreditation

| Date | Working Group | Discussion Points and Links to Materials |
|---|---|---|
| January 23, 2023 | ICAPWG | Modeling Improvements for Capacity Accreditation: Project Kick Off: https://www.nyiso.com/documents/20142/35880057/2023-01-26%20ICAPWG%20Modeling%20Improvements%20-%20Kick%20Off.pdf/c7ac6b6e-c90b-54b4-832d-ec6ecfc8f7ff |
| February 28, 2023 | ICAPWG | Correlated Derates - Overview: https://www.nyiso.com/documents/20142/36499713/Correlated_Derates_MIWG_022823_FINAL.pdf/35eaab46-740e-aed0-9e2d-2207c06a0659<br>Natural Gas Constraints - Overview: https://www.nyiso.com/documents/20142/36499713/Gas%20Constraints%2002_28_2023%20ICAPWG_Final.pdf/e258d867-12f9-8453-c93b-49bc94b8e803<br>SCR Modeling - Overview: https://www.nyiso.com/documents/20142/36499713/2023-02-28%20ICAPWG%20Modeling%20Improvements%20-%20SCR%20Modeling.pdf/c1a52495-bc30-3e7c-f5c1-61c38f30fbe4 |
| April 27, 2023 | ICAPWG | Natural Gas Constraints - Gas Availability Estimates and Classification: https://www.nyiso.com/documents/20142/37254128/Natural%20Gas%20Constraints%202023_04_27_Final.pdf/0821aba8-bdcd-b1ce-96f3-2d8a740e1356<br>SCR Modeling - Current IRM Modeling and Historic SCR Performance, Exploratory Testing https://www.nyiso.com/documents/20142/37254128/2023-04%20ICAPWG%20Modeling%20Improvements%20-%20SCR%20Modeling.pdf/30382824-7468-24d2-e567-56c770d6a185<br>Start up Notifications - Project Overview: https://www.nyiso.com/documents/20142/37254128/Start-up%20notification%20time%20-%20ICAPWG%204.27.2023%20v0.2%20clean.pdf/b44eb773-6f7d-e895-e202-a12f2fb6e24e |
| May 8, 2023 | ICAPWG | Correlated Derates - Ambient Adjustments and Emergency Capacity: https://www.nyiso.com/documents/20142/37431277/5%20Correlated_Derates_ICAPWG_050823.pdf/a1e9a0f4-d922-503d-06d0-682b49c46c4c |

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# Previous Discussions on Modeling Improvements for Capacity Accreditation

| Date | Working Group | Discussion Points and Links to Materials |
|---|---|---|
| June 1, 2023 | ICAPWG | Natural Gas Constraints – Potential methods for quantifying firm capacity, CARC designation, and fuel election timelines: https://www.nyiso.com/documents/20142/37883690/Natural%20Gas%20Constraints%2006_01_2023_ICAPWG_Final.pdf/d479ea64-a0d0-86d1-388a-f93d01ff1e10 |
| June 7, 2023 | ICAPWG | SCR Modeling – Exploratory Testing Methodology: https://www.nyiso.com/documents/20142/38023757/2023-06-07%20ICAPWG%20Modeling%20Improvements%20-%20SCR%20Modeling.pdf/250f8f1d-9dfe-5756-640b-c1e31f3a6328 |
| June 27, 2023 | ICAPWG | Natural Gas Constraints – Addressing Stakeholder feedback and discussion on simpler framework for classifying units: https://www.nyiso.com/documents/20142/38423065/2%20Natural%20Gas%20Constraints_06_23_2023_ICAPWG_Final.pdf/177ad95e-1fa3-5c57-a626-d06182b55c9b |
| July 11, 2023 | ICAPWG | SCR Modeling – Exploratory Testing Methodology Results: https://www.nyiso.com/documents/20142/38699263/2023-07-11%20ICAPWG%20Modeling%20Improvements%20-%20SCR%20Modeling%20v2%20-%20clean.pdf/2f27473b-2292-31d4-ecb7-5d30d6b860f0 |
| July 27, 2023 | ICAPWG | Correlated Derates - Ambient Adjustments and Emergency Capacity: https://www.nyiso.com/documents/20142/39044934/Correlated_Derates_ICAPWG_072723_final.pdf/0f80f8f2-8100-b8f7-0c65-0098242634e1<br>Start-up Time – Long Start-up Time and Considerations: https://www.nyiso.com/documents/20142/39044934/Startup%20time%20-%20ICAPWG%207.27.2023_v2.pdf/bbf6fa0d-b45e-6b7f-1697-2c002442b1de |
| August 8, 2023 | ICAPWG | Gas Constraints – Classification Proposal, Requirements for Firm Units, and Data Submittal Timeline: https://www.nyiso.com/documents/20142/39257338/Natural%20Gas%20Constraints_08_09_2023%20ICAPWGv4%20(002).pdf/de6053e0-030d-5520-ed59-18f2225f0f92 |

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# Previous Discussions on Modeling Improvements for Capacity Accreditation

| Date | Working Group | Discussion Points and Links to Materials |
|---|---|---|
| September 5, 2023 | ICAPWG | Correlated Derates – Ambient Adjustments: https://www.nyiso.com/documents/20142/39768278/5%20Correlated_Derates_ICAPWG_090523_final.pdf/5aa71990-e873-166b-a520-e8e6c44b42e1 |
| September 18, 2023 | ICAPWG | Startup Notification - Recommendation and Draft Tariff Revisions: https://www.nyiso.com/documents/20142/40044890/7%20Start-up%20Time%20Proposed%20Capacity%20Tariff%20Revision%20-%20ICAPWG%2009-18.pdf/9d6e8c5e-b7cd-384c-b713-be93507912ed |
| September 20, 2023 | ICAPWG | Gas Constraints – Updated Requirement, Data Verification Timeline and Shortfall Penalty: https://www.nyiso.com/documents/20142/40085480/Natural%20Gas%20Constraints_9_20_2023_v4.pdf/8c76a250-d1e0-d30a-2c24-115f10268c65 |
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# Background

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- Capacity accreditation reflects resources' contribution to resource adequacy with the goal of producing more efficient ICAP Market outcomes
- Recent winter reliability concerns have raised questions of the availability of generation utilizing natural gas as a primary fuel source on a Non-firm basis due to pipeline and/or other constraints
- For this portion of the Modeling Improvements for Capacity Accreditation project, the NYISO is looking to develop methodologies to identify and quantify natural gas constraints and resources impacted by such constraints in addition to corresponding methodologies for implementation in GE MARS.
  - The Special Case Resource modeling, Correlated Derates, and Start-up Notification portions of Modeling Improvements for Capacity Accreditation will be covered in separate discussions.
- The 2023 Project deliverable is Q4 – Functional Requirements

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# 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

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