

Modeling Improvements for Capacity Accreditation: Firm Fuel

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Today's Objective

- **Today's objective is to continue discussing proposed changes to the firm fuel requirements**
 - As a reminder, the market design proposal detailed in this presentation is expected to evolve over time based on NYISO's observations of the performance of ICAP Suppliers making firm elections and as the New York Control Area system evolves

Agenda

- **Background**
- **Fuel Characteristic Elections**
- **Firm Fuel Requirements**
- **Financial Sanctions**
- **Tariff Updates**
- **Next Steps**

Background

Background

- **On July 23, 2024, FERC accepted the tariff revisions for the Modeling Improvements for Capacity Accreditation project**
 - As part of its acceptance, FERC directed the NYISO to submit a compliance filing that delayed the implementation of the firm fuel election process to the 2026-2027 Capability Year
 - On October 24, 2024, FERC accepted the NYISO compliance filing
- **At the November 21, 2024 ICAP Working Group (ICAPWG) meeting, the NYISO proposed changes to the firm fuel election process and requirements to address open questions**

Firm Fuel Characteristic Election

Firm Fuel Characteristic Election

- **As discussed at the 11/21/2024 ICAPWG, ICAP Suppliers making a Firm Fuel Characteristic Election will no longer be required to submit supporting documentation composed of firm fuel contracts or liquid fuel inventory documentation to validate their firm fuel election**
 - Relevant dates related to data submission and NYISO review will be removed from the FERC-accepted tariff language
 - Based on this change, there will be no ex-ante review of documentation prior to firm fuel elections
- **Further, the NYISO proposes that ICAP Suppliers not be required to submit an attestation with their firm fuel election**
- **Elections will be made with the understanding that the ICAP Supplier can meet the criteria that will be set forth in the ICAP manual for its elected MWs to be considered firm for capacity accreditation**
 - Elections will be made by August 1 of the calendar year preceding a subject Capability Year (Aug. 1 for the 2026/2027 CY) and will need to include the Firm Fuel Characteristic Election Excel Spreadsheet (See Appendix Slide 28).

Firm Fuel Characteristic Election

- All ICAP Suppliers who elect to provide firm fuel capacity will need to submit a Firm Fuel Characteristic Election, regardless of whether their geographic location is subject to the fuel constraints in the IRM model
- ICAP Suppliers will not need to submit a fuel election if they will provide non-firm fuel capacity; their UCAP will be considered non-firm, unless they submit a Firm Fuel Characteristic Election.
- The ICAP Suppliers in Load Zones F through K that elect firm fuel MW will receive the firm fuel Capacity Accreditation Resource Class and Capacity Accreditation Factor (CAF)
 - The fuel constraints in the IRM model currently only apply to Load Zones F through K
 - There will be no distinction in CAF values between firm and non-firm fuel in areas that are not subject to the fuel constraints in the IRM model (i.e., Load Zones A-E)
- Since fuel constraints in external areas are not reflected in the IRM model, there will be no distinction in CAF values between firm and non-firm fuel for External Resources

Firm Fuel Requirements

Firm Fuel Requirements

- **By selling UCAP based on a firm fuel election, ICAP Suppliers are committing to have fuel available to run for 56 hours over any consecutive seven-day period from December through February**
 - Firm supply must be able to, at a minimum, allow the ICAP Supplier to operate its unit for eight hours a day for seven consecutive days at the elected MW value (e.g., 100 MW Firm election = 5600 MWh)
 - ICAP Suppliers will be evaluated based on the ability to operate for a minimum of eight hours on any given day if not having already run for a total of 56 hours the previous six days at the elected firm MW
 - For example: If a 100MW unit has run for 5600 MWh over days 1-6, the ICAP Supplier **will not** need to perform a minimum of eight hours on Day 7 to satisfy its firm fuel obligation
 - Note: Ramping intervals will be counted towards the MWh balance within the seven-day period
 - A financial sanction evaluation is triggered when:
 - An ICAP Supplier is unavailable in DAM or RT due to fuel related issues and has not run for its MWh commitment (5600 MWh in this example) over the previous seven consecutive days
 - In the DAM, the ICAP Supplier fails to Bid or schedule a Bilateral Transaction for the elected firm MW capacity
 - ICAP Supplier fails to respond to an SRE (more details on slide 11)
 - The NYISO, through its monitoring and compliance program, has identified one or more concerns about an ICAP Supplier's ability to operate based on possibly not having procured or maintained firm fuel supply, for example, when the NYISO identifies anomalous Energy market bidding behavior.
- **Important Note: Outages irrespective of fuel status will be accounted for in individual EFORd calculations**

Firm Fuel Requirements (Cont'd)

■ Partial Firm

- An ICAP Supplier can make a Firm Fuel Characteristic Election for any portion of its UCAP based on its firm fuel supply arrangement
 - For example, a 100 MW unit can make 50 MW Firm Fuel Characteristic Election if the firm fuel supply arrangement is able to allow 50% of the plant meeting the firm fuel requirements described on Slide 10
- Note that an ICAP Supplier cannot elect to be partially firm if a Generator's fuel supply arrangement does not allow it to meet the 8 hour/day, 56-hour run-time requirements
 - For example, a 100 MW unit has a firm fuel supply arrangement with a 6 hours/day limitation. This unit is not permitted to make a Firm Fuel Characteristic Election because it is not able to meet firm fuel requirements-described on Slide 10

Firm Fuel Requirements (Cont'd)

- For initial implementation, ICAP Suppliers with dual fuel capability electing any amount of firm fuel capacity via the use of an onsite fuel will not need to demonstrate operability through the successful completion of a one-hour test on their onsite fuel
 - ICAP Suppliers will have discretion to elect the firm fuel MW value consistent with satisfying the performance requirements or be at risk of a deficiency charge
- The NYISO may reevaluate in the future the need for a testing requirement based on the elections and performance of units utilizing onsite fuel arrangements

Financial Sanctions

Financial Sanctions

- To mitigate against ICAP Suppliers making fuel characteristic elections that do not align with their ability to perform during the winter performance period, under the financial sanction structure, revenues generated by electing firm fuel and failing to perform should not exceed those of a non-firm fuel election
- The NYISO has revised its financial sanction proposal that seeks to provide a stronger incentive for making fuel characteristic elections that align an ICAP Supplier's fuel arrangements with the firm fuel performance requirement

Financial Sanctions (Cont'd)

- **ICAP Suppliers who elect any amount of firm MW but thereafter are not available (outage, derate, etc.) at any time during the months of December, January and February due to lack of fuel and have not run for 56 hours over the past seven consecutive days will be subject to a 1.5 or 1.0 financial sanction multiplier**
 - The financial sanction will be based on the ratio of the total firm/non-firm MW difference of the unit to what the unit sold in each month of the subject Capability Year
 - e.g., If the unit's full firm fuel value is 100MW but would otherwise be 90MW non-firm, and it sold 75 MW in December, the base deficiency MW for that month would be $10\text{MW} * .75 = 7.5\text{MW}$
 - The financial sanction will be further prorated by the ratio of months within the winter performance period in which the ICAP Supplier demonstrated successful performance (e.g., did not have a fuel related outage, derate, etc., during a given month)
 - e.g., If a supplier fails to perform in December but successfully performs in January and February, $1/3$ of the MW difference will be subject to a financial sanction ($7.5\text{MW} * (1/3) = 2.5\text{MW}$)
- **Whether an ICAP Supplier is assessed a 1.5 or 1.0 financial sanction multiplier will depend on the reason firm fuel supply was not available (i.e., whether the loss of firm fuel was within or outside ICAP Supplier's control. See Slides 20-22)**

Financial Sanctions (Cont'd)

■ Financial Sanction Example:

- 100 MW Unit electing fully firm assuming the following facts: 100% Firm CAF, 90% Non-firm CAF, and no individual derating factor
 - Winter MCP = \$10/ KW-month
 - Summer MCP = \$20/ KW-month
 - MW Sold = 100 MW = 100% of unit
 - Full Firm/Non-Firm MW delta = $100 - 90 = 10\text{MW}$
 - MW Subject to Financial Sanction = $10\text{MW} * 100\% = 10\text{MW}$
 - Financial Sanction Multiplier = 1.5
- Assuming the unit successfully performed in January and February, the full financial sanction amount for the capability year would equal $(10\text{MW} * 1/3) * ((6 * \$10 * 1000) + (6 * \$20 * 1000)) * 1.5 = \$900,000$

■ A more detailed set of financial sanction examples for a full Capability Year is included in Appendix Slide 31

Financial Sanctions (Cont'd)

- Example of Performing 56 hours over any Consecutive Seven-Day Period (100MW Firm Fuel Election):

| | December | | | | | | | | | |
|-------------------------------------|----------|------|------|-----|-----|-----|------|------|------|------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Capability (MWh) | 800 | 1600 | 1000 | 800 | 800 | 800 | 600 | 0 | 0 | 0 |
| Performance (MWh) | 800 | 1600 | 1000 | 800 | 800 | 800 | 600 | 0 | 0 | 0 |
| Prior 7 Day Total Performance (MWh) | | | | | | | 6400 | 5600 | 4000 | 3000 |

*In this instance, although Day 7 performance was for less than eight hours at the elected firm MW value, the unit successfully performed 56 or more hours over the previous seven consecutive days and thus is not subject to a financial sanction

Financial Sanctions (Cont'd)

- The NYISO proposes to utilize NERC guidance on “Outside Management Control” (OMC) to determine whether a loss or reduction in firm fuel supply was within or outside of the ICAP Supplier’s control
- The NERC guidance contained in the following slides is not an exhaustive list, and the NYISO may consider other factors when determining if loss of firm fuel was outside an ICAP Supplier’s control

Financial Sanctions (Cont'd)

- NERC guidance specifies that *outside of management control* includes failure of a fuel supplier to fulfill contractual obligations or a pre-arranged deal due to physical fuel disruptions or operational impairments (e.g., force majeure on a pipeline or compressor down; making the pipeline incapable of making its firm deliveries.) More detailed examples include:
 - Firm pipeline gas transportation segment interrupted causing disruption or reduction in the flow of natural gas
 - Physical damage to pipeline or cyber disruption
 - Routine pipeline maintenance (e.g., pigging)
 - Commodity supplier fails to deliver firm gas to primary pipeline receipt point
- Examples of factors that the NYISO may consider when determining if loss of firm fuel was outside an ICAP Supplier's control:
 - Weather
 - Failing to respond to an SRE event when notice is given *after* 1300 the day before an operating day

Financial Sanctions (Cont'd)

- **NERC guidance specifies that lack of fuel due to contractual or tariff provisions that allow for service interruption or price fluctuations during peak demand periods are *not considered outside of management control*. Examples include:**
 - Company's fuel supply group allocates limited firm fuel to other fleet sites
 - Interruptible pipeline transportation interrupted
 - Pipeline issues Operational Flow Order
 - Pipeline enforces ratable takes provision to tariff levels
 - Local Distribution Company confiscates or interrupts fuel scheduled for delivery to plant gate
 - Plant fuel buyer rejects gas at implied delivered price (possibly including penalties)

Financial Sanctions (Cont'd)

- **Based on the movement to the performance approach, the provisions in section 23.4.5.4 of the Services Tariff related to exemptions for Pivotal Suppliers offering mitigated capacity will be removed**
 - By making a firm fuel election, Pivotal Suppliers commit to being available during December, January and February or otherwise be subject to a financial sanction

Non-firm Elections and Physical Withholding

- **Stakeholders have requested that the NYISO clarify how it will approach the application of certain Supplier-side Mitigation rules to non-firm designations by Pivotal Suppliers**
 - Section 23.4.5.6.1 of MST Att. H provides that any proposal or decision by a Market Participant to retire or otherwise remove an ICAP Supplier from a Mitigated Capacity Zone or to de-rate the amount of ICAP available from such supplier may be subject to audit and review by the NYISO if the NYISO determines that such action could reasonably be expected to affect Market-Clearing Prices
 - In the absence of economic justification, the NYISO may seek to issue penalties on the entire portfolio of a Pivotal Supplier if capacity prices are sufficiently impacted
- **At this time, the NYISO is not proposing to perform such an *ex-ante* evaluation for Pivotal Suppliers' non-firm designations. NYISO currently believes that Pivotal Suppliers' non-firm fuel designations are unlikely to be an effective 'lever' with which to manipulate ICAP market outcomes**
 - Although not entirely beyond the realm of possibility, NYISO currently believes that a non-firm fuel designation having sufficient impact on capacity prices to prompt an audit from the NYISO may be a very low probability event

Tariff Updates

Tariff Updates

- Included with today's meeting material is draft tariff language
- Edits to have been made to the follow sections of the approved Services Tariff:
 - 5.12.1.15 – Removal of dual fuel testing requirement
 - 5.12.5 – Ministerial Edits unrelated to firm fuel
 - 5.12.6.2 – Ministerial Edits unrelated to firm fuel
 - 5.12.6.2.2 – UCAP Adjustment for partial firm units – updated reflecting performance approach
 - 5.12.7 - Ministerial Edits unrelated to firm fuel
 - 5.12.8 – Further dual fuel testing requirement deletions, Ministerial Edits unrelated to firm fuel
 - 5.12.11.1 - Ministerial Edits unrelated to firm fuel
 - 5.12.12.3 – Language on the financial sanction to capture performance approach and new structure
 - 5.12.15 – Elections – Updated to reflect performance approach
 - 5.14.2.3.5 – Language will be removed. Financial sanction language now in MST section 5.12.12.3
 - 23.4.5.4 – Removal of the pivotal supplier exemption clause

Next Steps

Next Steps

- Return to an ICAPWG to continue discussions on firm fuel requirements and tariff
- For any questions or feedback, please email ntubbs@nyiso.com

Appendix

Firm Fuel Election Excel Spreadsheet

Firm Supply Election Coversheet

PTID_____

Unit Name_____

Market Participant_____

Nameplate_____

Unit Type_____

Fuel Type_____

Subject Capability Year_____

Date of Submission_____

Summary of
Submission_____

Main Contact (name)_____

Main Contact (email)_____

Main Contact (phone) _____

Total Firm Election
(MW)_____

Utilized Fuel Arrangements (Check One)

Primary_____

Secondary_____

Both_____

Detailed Financial Sanction Examples (Based on Capability Year)

| Financial Sanction Example - 100 MW Firm, 90MW Non-firm | May | June | July | August | September | October | November | December | January | February | March | April | Totals |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| (A) MCP \$ | 20 | 20 | 20 | 20 | 20 | 20 | 10 | 10 | 10 | 10 | 10 | 10 | |
| (B) Full Firm MW | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |
| (C) Non-firm MW | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | |
| (D) MW Sold | 80 | 100 | 100 | 100 | 70 | 80 | 80 | 100 | 100 | 100 | 80 | 80 | |
| (E) % Unit Sold | 80% | 100% | 100% | 100% | 70% | 80% | 80% | 100% | 100% | 100% | 80% | 80% | |
| (F) Unit Revenue \$ = (A)*(D)*1000 | 1,600,000 | 2,000,000 | 2,000,000 | 2,000,000 | 1,400,000 | 1,600,000 | 800,000 | 1,000,000 | 1,000,000 | 1,000,000 | 800,000 | 800,000 | 16,000,000 |
| (G) Revenue Full Firm Capacity \$ = (A)*(B)*1000 | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 18,000,000 |
| (H) Non-firm Revenue \$ (A)*(C)*1000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 900,000 | 900,000 | 900,000 | 900,000 | 900,000 | 900,000 | 16,200,000 |
| (I) Weighted Revenue Difference \$ (G)-(H)*(E) | 160,000 | 200,000 | 200,000 | 200,000 | 140,000 | 160,000 | 80,000 | 100,000 | 100,000 | 100,000 | 80,000 | 80,000 | 1,600,000 |
| (J) 1.5 Multiplier | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | |
| (K) 1.0 Multiplier | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| (L) Full 1.5 Multiplier Amount \$ (I)*(J) | 240,000 | 300,000 | 300,000 | 300,000 | 210,000 | 240,000 | 120,000 | 150,000 | 150,000 | 150,000 | 120,000 | 120,000 | 2,400,000 |
| (M) Full 1.0 Multiplier Amount \$ (I)*(K) | 160,000 | 200,000 | 200,000 | 200,000 | 140,000 | 160,000 | 80,000 | 100,000 | 100,000 | 100,000 | 80,000 | 80,000 | 1,600,000 |
| Scenario 1 - Fail one month \$ (L)*(1/3) | 80,000 | 100,000 | 100,000 | 100,000 | 70,000 | 80,000 | 40,000 | 50,000 | 50,000 | 50,000 | 40,000 | 40,000 | 800,000 |
| Scenario 2 - Fail two months \$ (L)*(2/3) | 160,000 | 200,000 | 200,000 | 200,000 | 140,000 | 160,000 | 80,000 | 100,000 | 100,000 | 100,000 | 80,000 | 80,000 | 1,600,000 |