



# PJM Proposed Solution Options

EGCSTF April 17, 2023

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- Lack of accurate reserve estimates:
  - When pipelines issue operating capacity restrictions (OFOs, ratable takes, timely nomination adherence, etc.) indicating constrained conditions, PJM does not see the majority of Generation Owners updating their unit specific parameters to reflect these restrictive scheduling requirements
  - As a result, large MW quantities of gas generation appear “available and flexible” and are therefore counted towards Reserves (Synch, Primary and Operating) in the DA/RT Markets, with no physical gas procurement and scheduling having taken place.
    - Reserves potentially overstated, prices suppressed
  - However, if fuel is not secured in advance, these MWs may not be available when called upon.

- **Current Process:** PJM expects all operating parameters reflect the true capability of units at all times, including any supply and transportation contractual limits (i.e. OFO imposed restrictions) that cannot be rectified among any commercial alternatives actually available to it.
  - In addition, PJM provides a reminder for generation owner to “validate and update parameters” as part of the “Member Actions” during Cold/Hot Weather Advisory/Alert as specified in M-13
    - Currently, there is no information provided to PJM to confirm this has been done
- **Solution:** When a Cold Weather Alert or Conservative Ops is in effect, Natural Gas units in the impacted zone(s) will be required to confirm, and supply supporting evidence/documentation, that any OFOs issued by the pipeline/LDC they are connected to either:
  - **Do Not** affect their parameters, Or
  - **Do** affect their parameters and confirm parameters have been updated using the Temporary Exception or Real Time Value process outlined in Manual 11, Sections 2.3.4.3 and 2.3.4.4
    - Enhance Manual 11 and Manual 13 language with proper process for how to reflect gas pipeline constraints in parameters

- During periods of extreme stress on the natural gas pipelines, which often coincides with periods of extreme stress on the electric grid, pipelines/LDCs may not be able to afford the same level of flexibility to generators as they would on a non-constrained day. However, individual generation owners may not have enough information available to them about fuel availability to be able to update their individual parameters accurately (i.e. single pipeline with multiple generation owners)
- **Current process:** PJM monitors OFO conditions and coordinates with pipelines on a daily and real time basis to assess risks and then take out of market actions if needed, such as:
  - Updating reliability analysis performed based on loss of gas risk
  - Increasing frequency of communications with gas unit owners on fuel/generation availability
  - Manual commitment of additional generation/reserves
- **Solution:** Based upon forecasted grid conditions (i.e. Cold Weather Alert or Conservative Operations) and pipeline issued OFOs indicating resources must adhere to nomination timelines, PJM will make gas units in the impacted area ineligible to satisfy the Non-Synchronized Reserve requirement in the DA, RAC and Real Time Markets
  - No changes to the eligibility for Synchronized Reserve
  - Impact: Additional and earlier commitments of gas fired resources for energy/synch reserve will be made

- **Current Process:** PJM obtains gas transportation and nomination information from public websites for units connected to Interstate Pipelines.
  - No information is available for units connected behind a city gate (i.e. LDC).
  - No information is supplied directly from the generation owners, resulting in potential gaps in situational awareness for PJM regarding generation availability.
- **Solution:** Generation Owners will be required to upload pipeline nomination equivalent MW hourly amounts to Markets Gateway aligned with the nomination deadlines (slide 6).

Gas Nomination Cycle	Gas Nomination Cycle Deadline (ECT)	Equivalent hourly output (MW) provided by nomination	Gas Flow Period	
Timely	2:00pm	100	10am to 10am	Next Day
Evening	7:00pm	100	10am to 10am	Next Day
ID1	11:00am	100	3pm to 10am	Same Day
ID2	3:30pm	100	7pm to 10am	Same Day
ID3	8:00pm	100	11pm to 10am	Same Day