

Combined Cycling Modeling Options

MGSTF

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Real Time Market Operations

- Participants have inquired about additional short-term options to better model Combined Cycle (CC) units in the market clearing engines.
- Options are meant to be implemented in the near-term, as opposed to waiting for the combined cycle model to be delivered as part of the nGEM project.
- This presentation lays out the pros and cons of potential short-term options



Option 1 – Add Additional Segments to the Energy Offer Curve

- Increase the number of segments on the energy offer curve from 10 to 20
This would allow the participant to better represent the configurations (1x1, 2x1, and duct burner) on the energy offer curve.
 - Increasing the number of segments to 20 would align energy offer curve with the segmented energy ramp rate.
- Change energy offer segments for **all** units not just CCs
- Startup and No-load costs would have to be updated hourly by the participant at least 65 minutes prior to start of operating hour with anticipation of what configuration they will run on.
 - Ability to update startup and no-load costs is only available for units that elected cost-based startup and no-load.

- Updates to min run time will not be reflected in dispatch for already committed units. Dispatch maintains the original min run from the time of commitment. In addition, min run can't be updated for committed hours.
- Small performance impact to the Day Ahead and Real Time clearing engines.
- Need Stakeholder Input
 - Are 10 additional segments enough?
 - PJM would like to keep this consistent with ramp rate.

- Allow hourly differentiated ramp rate in both the Day Ahead and Real Time Markets
- Provide the ability to change ramp rate Intraday
 - Would allow the participant to better manage configuration changes
- Follow existing Intraday logic rules
 - Hourly Differentiated Curves
 - Updates permitted up to 65 minutes prior to operating hour

- Allow CCs to be able to “switch to cost” and change schedule availability.
 - Allow CCs to follow current Dual Fuel IntraDay Offers rules
- This option requires additional PJM evaluation.
 - Verify the Dual Fuel logic will work as expected for a CC unit
 - Determine if there are any Market Settlements Impacts or changes needed

- Collect stakeholder feedback
- Investigate implementation feasibility and timing