Multischedule Model and Mitigation: IMM Package

MIC Special Session

May 24, 2023

IMM

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Goals of IMM Package

- **Ensure offer capping and parameter limits are applied to all units failing the TPS test.**

- **Ensure parameter limits are applied to all capacity resources during emergency and alert conditions.**

- **Remove schedule selection between cost and price from the market clearing engine.**

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Offer Capping Concept

- **For units that fail the TPS test, only cap offers that exceed their cost basis.**

- **For each offer curve MW break point, start offer, and no load offer, check against cost-based offer.**

- **Cap only offer points that exceed the reference cost-based offer element.**

- **The reference cost-based offer is equal to the lowest cost available cost-based offer.**

- **The reference cost-based offer must have the same MW break points as the price-based offer.**

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Mitigating Offers Up

- **The IMM package avoids the possibility of increasing an offer through market power mitigation.**

- **The PJM OA describes the market power mitigation process as "offer capping."**

- **The purpose of offer capping is to cap only offers that exceed cost.**

- **Other proposals (and the status quo) can actually increase an offer for a unit with market power.**

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Flexible Parameters

- **Only cap/floor parameters in the price-based offer that are less flexible than their unit specific parameters (PLS).**
  - **For capacity units that fail the TPS test**
  - **For capacity units during hot/cold weather alerts and emergencies**
- **Cap/floor only parameters that are less flexible than the counterpart PLS parameter.**
- **Parameters that are at least as flexible as their PLS counterpart are not capped/floored.**

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Example

Offer Parameters	Price Offer	Cost Offer	Mitigated Offer
Start Cost	3,500	4,000	3,500
No Load Cost	1,500	1,000	1,000
Incremental Offer Curve	$/MWh	$/MWh	$/MWh
0 MW	15	20	15
50 MW	15	25	15
100 MW	15	30	15
150 MW	500	35	35
200 MW	500	40	40

Operating Parameters	Price Parameters	Parameter Limits	Mitigated Parameters
Min Down Time	8.0	7.0	7.0
Min Run Time	24.0	2.0	2.0
Max Run Time	24.0	24.0	24.0
Notification Time	4.0	1.0	1.0
Start Time	3.0	3.0	3.0
Turn Down Ratio	2.0	1.5	2.0
Max Daily Starts	3.0	3.0	3.0
Max Weekly Starts	21.0	21.0	21.0

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Benefits of This Approach

- **Offer capping is limited to specific elements and parameters.**

- **Price PLS schedule is no longer required.**

- **No need for schedule selection in the market clearing engine.**

- **Uses current method of capping price-based offers at cost above $1,000/MWh.**

- **Market power mitigation cannot be circumvented.**

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Cost-Based Only Scenarios

- **There are limited circumstances in which resources have multiple cost-based offers and no price-based offers.**

- **In these scenarios, an evaluation of the lowest cost schedule would still be needed.**

- **The solution is to use the hourly dispatch cost (area under the offer curve plus no load) at eco max plus start up cost.**

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