New York ISO
Independent System Operator

Market Mitigation Measures for Internal Controllable Lines

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October 19, 2023

Agenda

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Project Background

Background

- **NYSERDA's Tier 4 REC initiative has driven the prioritization of this project to develop market participation rules for ICL**
  - There are currently no internal controllable lines ("ICL") in operation within the NYCA
- **The 2022 effort reached Market Design Concept Proposed (MDCP)**
- **The 2023 project milestone is Market Design Complete (MDC)**
  - Today's presentation is intended to review the current Energy Market Mitigation as it pertains to ICLs

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Review of current and proposed Energy Market Mitigation rules

Energy Market Mitigation overview

- Attachment H to the Market Services Tariff defines the thresholds used to administer Energy Market Mitigation
- This is one of the primary functions of the NYISO's Market Mitigation and Analysis department ("MMA")
- Mitigation is designed to protect consumers against prices and/or payments that could diverge as a result of "conduct" inconsistent with competitive behavior
  - Price divergence can be positive or negative
- The test for determining conduct is usually a measure of the reference level against Generator offer plus the applicable threshold
  - Conduct for Uneconomic production is a measure of LBMP against reference level

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Automatic Mitigation Process ("AMP") for NYC Generators

- AMP is incorporated into the NYISO's Network Manager – the platform used for commitment and dispatch of NYCA Generators
- For NYC Generators, AMP applies to the Day-Ahead/Real-time market solutions as well as guarantee payment mitigation in the Day-Ahead market only
- Incremental Energy, Startup and Minimum Generation offers are subject to AMP
- Three criteria need to be met to apply mitigation
  - Trigger – Local congestion at the Generator bus > $.04/MWh
  - Conduct – Offers for Incremental Energy or Minimum Generation greater than the reference level + Load Pocket Threshold ("LPT"); Startup 50%
  - Impact – LBMP divergence at the Generator bus price greater than the most restrictive binding LPT
- AMP is *ex-ante* and is applied prior to posting of final prices

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Automatic Mitigation Process ("AMP") for NYC Generators…

- The following example assumes local congestion for simplicity
- Example:
  - Generator offer = $100/MWh
  - Generator reference level = $50/MWh
  - Load Pocket Threshold = $10
- Initial run of the market solution resulted in the original offer being marginal so LBMP is set at $100
- Amp replaces conduct failing offer with reference level resulting in a lower price of $50
- $100 - $50 > $10 – Mitigation is applied

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Automatic Mitigation Process ("AMP") for ICL

- An ICL would submit an Incremental Energy offer (no Start-up or MG)
  - Up to an eleven point monotonically increasing curve with MW values and offer price, potentially covering a range from withdraw to inject for a bi-directional ICL
- AMP will review the offer to inject Energy into the load pocket against the reference level
- Not unlike the current AMP process, during periods of local congestion, if a conduct failing offer is determined to have had impact at the Generator location greater than the LPT, the offer is substituted with reference level
- Within each Load Pocket, if there are multiple Generators with Conduct failing Bids, and impact is determined, all Conduct failing Bids within that Load Pocket would be mitigated
- An ICL's conduct-failing Bids will be included in this test and mitigated with conduct-failing Generator offers.

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Rest of State Energy (LBMP) Mitigation

- Contrary to AMP, Mitigation of Energy in the Rest of State ("ROS") locale is processed "manually" (which means consultation is required before mitigation can be applied)
- The fundamental structure still applies minus "trigger"
- All Energy offers in the Day-Ahead and Real-Time markets are "screened" for conduct
- If conduct is determined, a review of market prices assesses the potential for impact.
- If price divergence is found that exceeds the market impact thresholds, a Consultation with the Market Participant is initiated allowing an opportunity to substantiate the original offers made
- If conduct was found to be consistent with competitive behavior, no mitigation is applied.
- If the Market Participant is unable to substantiate the original offers made, the Generator would be restricted from submitting offers above reference level for identified conduct for a period of 6 months from the date the mitigated conduct occurred
- An ICL offer that injects power in the ROS locale, would be subject to the same form of mitigation
- With bi-directional functionality, the mitigation applied would be tested for and determined at the point of energy injection e.g., if the injection bus is in NYC the offer would be subject to AMP, if the injection bus is in any other zone the offer would be subject to the ROS thresholds.

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Guarantee Payment Mitigation

- All Guarantee Payments ("GP") made to Generator are reviewed for potential mitigation
- As stated, Day-Ahead GP mitigation for all NYC Generators is applied in AMP
- Real-Time GP Mitigation for all NYCA resources is applied in the NYISO's settlement system
- GP based on submitted offer is compared to *GP at reference* to determine impact.
  - "GP at reference" is the revised GP as a result of bid substitution to reference level for any conduct failing offers (which could be specific steps on an offer curve)
- Any GP issued for an ICL Energy injection into ROS is mitigated if the GP based on as-submitted offers is more than 200% greater than the GP using reference levels
- Any GP issued for an ICL Energy injection into NYC is mitigated if the GP based on as-submitted offers is more than 50% greater than the GP using reference levels

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Guarantee Payment Mitigation…

HB	Gen Offer	Gen Ref	Conduct Pass/Fail	Gen LBMP	GP	GP at Ref
HB00	$ 300	$ 201	Pass	$ 150	$ 150	$ 150
HB01	$ 300	$ 201	Pass	$ 100	$ 200	$ 200
HB02	$ 250	$ 100	Fail	$ 200	$ 50	$ (100)
HB03	$ 350	$ 150	Fail	$ 200	$ 150	$ (50)
HB04	$ 100	$ 100	Pass	$ 150	$ (50)	$ (50)
HB05	$ 100	$ 100	Pass	$ 100	$ -	$ -
					$ 500	$ 150

- The following example uses a 1MW offer with $100 conduct threshold and a 200% impact threshold
- The $500 GP is 233% greater than the $150 GP at Ref. Impact of 233% is greater than the 200% so mitigation is applied

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Physical Withholding

- All NYCA resources are expected to offer all services they are eligible to provide
- Conduct is defined as Withholding the lesser of 10%/100MW at the Generator level and 5%/200MW at the Affiliate level
- Approved derates, maintenance outages, unscheduled outages and verifiable fuel constraints that impact the ability to offer the Generator's full capability are excluded from Physical Withholding review – Example:
    - Generator full capability = 1000MW
    - Highest point of offer curve = 899MW
    - This offer fails conduct and would be subject to potential mitigation is the price divergence at that Generator price exceeded the relevant threshold
- Operating at a lower output level than would have been expected had the Generator followed ISO dispatch instruction. 100MW for Generators, 200MW at the MP + Affiliates level.
- In all cases, market impact that exceeds thresholds are subject to potential mitigation
- Market Participants are allowed an opportunity to explain identified behavior and NYISO may be able to excuse behavior that is demonstrated to be consistent with competitive conduct
- If the Market Participant is unable to explain behavior identified to the satisfaction of the ISO/MMU, the mitigation applied is by way of a penalty – MW meeting the standard for mitigation times the posted market price, with a penalty multiplier applied to successive instances of mitigation
- ICLs will follow the same structure for withholding reviews and penalties

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Reference level development

- There is a tariff prescribed hierarchy preference for reference level development for all NYCA Generators
  - Bid-based (90-day avg of accepted offers with exceptions)
  - LBMP-based (90-day avg of LBMPs during hours of operations with exceptions)
  - ISO-determined (Cost-based)
- Exceptions to this hierarchy can exist
- Both Bid-based and LBMP reference levels exclude Bids and LBMPs below $15/MWh. This exception will not apply to ICLs
- The ISO-determined reference level for an ICL will be calculated as follows:
  - Operating and maintenance costs, transmission losses, risk and opportunity cost that include potential REC payments
- The Market Participant designated as the "RLS" delegate will be responsible for providing the data needed to derive these values.
- As with all other Reference Level Consultations, the Market Participant would be able to propose and justify any/all costs to be included in reference levels
- MMA in consultation with the MMU would need to approve any cost components needed to calculate reference levels
- ICL's will be able to utilize the current Opportunity cost adjustment functionality to notify the ISO of any costs not incorporated in the reference level posted at time of bidding

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Uneconomic Production

- All NYCA Generators are subject to the same conduct thresholds
- Conduct is determined by comparing a Generator's reference level to the LBMP at its location while the Generator is producing MW
- If the resource is operating while the LBMP is less than the reference level minus the greater of $25MWh/80% of the applicable reference level, then the offer fails conduct
- If conduct is identified, a market simulation is run to assess for potential market impact
- If the Market Participant is unable to substantiate why the Generator was operating in the manner identified, the mitigation applied is by way of a financial sanction
- The penalty is 1.5 * the absolute congestion component of LBMP for MW meeting the standard for mitigation

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Uneconomic Production for ICL

- Most observation of uneconomic production are as a result of Generators bidding in a fixed manner
- Bidding fixed precludes the Generator from following 5-minute dispatch instructions to lower output during low load/high supply periods
- ICLs can only bid in ISO-Committed Flexible mode
- However, an ICL could lower its offer relative to its reference level, increasing (positive or negative) congestion during these constrained periods
- MMA is proposing a new conduct test for ICL for uneconomic production
- As opposed to the current tariff defined conduct test that measures the LBMP against the Generator reference level, the new test will be a measure of the ICL's offer price against the reference level
- Conduct is defined as an Incremental Energy offer that is less than the applicable reference level minus the greater of $25 per MWh or 80% of the applicable reference level (i.e., Bid < (Applicable Reference Level – max($25, 80%×Applicable Reference Level))

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Next Steps

Next Steps

- October 26th MIWG with tariff updates
- BIC November 15th
- Q4 Market Design Complete
- MC Q1 2024

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Our Mission & Vision

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