



Tier 1 Compensation Proposal First Read

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August 27, 2015

Tier 1 synch reserves are credited at the synch reserve market clearing price (SRMCP) when the non-synch reserve market clearing price (NSRMCP) is above \$0.

- Is it appropriate to compensate Tier 1 aside from when it responds to a synch reserve event?
 - If so, how should it be compensated?

- Should Tier 1 MW be compensated outside of response to an event? If so:
 - At what price should they be credited?
 - Should Tier 1 resources incur an obligation as a result of receiving compensation outside of event response? If so:
 - How is the obligation calculated?
 - What does the compensation refund look like if they do not perform when called?
- Should any changes be made to the amount of Tier 1 MW estimated on a unit?



Summary of Proposals Considered & Voting Results

	Option 1	Option 2	Option 3
	<p>Continue paying Tier 1 the SRMCP when NSRMCP > \$0</p> <p>Impose an obligation on Tier 1 resources to perform during a spin event (when NSRMCP > \$)</p> <p>Resources may opt out of accepting an obligation, but then forgo payment when NSRMCP > \$0</p>	<p>Discontinue compensating Tier 1 resources when NSRMCP > \$0.</p> <p>Only compensate Tier 1 for event response</p>	<p>Change compensation to pay Tier 1 NSRMCP, rather than SRMCP, when NSRMCP > \$0</p>
MIC Vote In Favor	64%	29%	23%
% In Favor Over the Status Quo	70%		

	Status Quo	Proposed Solution
Price credited to Tier 1 resources outside of an event	SRMCP when NSRMCP > \$0	Status quo
Tier 1 MW calculation	Amount of 10 min ramping capability from economic basepoint to Eco Max or Spin Max, limited by ramp rate and adjusted by DGP	Status quo, but discontinue estimation of Tier 1 MW on resources self-scheduled and dispatched at min
Obligation to respond during an event	No	Yes – obligated to respond in the amount of the Tier 1 Estimate Resources may opt out of accepting an obligation, but then forgo payment when NSRMCP > \$0 (except when they respond to an event)
Refund owed for non-performance	No	Yes (same as existing Tier 2 refund for non-performance)
Frequency of Spin Max Update	Can only be updated up to 60 min prior to the start of the operating hour	Can be updated intra-hour to allow more accurate Tier 1 estimation

	August	September	October
MIC	<i>Review manual & tariff changes</i>	<i>Approve manual & tariff changes</i>	
MRC	First Read	Vote (October 1)	
MC			Vote (October 22)

Appendix – Supplemental Materials:

Proposal Details
Manual & Tariff / OA Revision Summary

- Continue to compensate Tier 1 MW at SRMCP when NSRMCP > \$0
 - Additionally, make units whole to cost to respond to a spin event
 - Make whole only applies to resources scheduled for energy by PJM and resources self-scheduled for energy and dispatched above min
- Create an obligation to perform to the Tier 1 estimate
 - Resources may opt out of receiving an obligation to perform if they feel uncomfortable with receiving an obligation based on the Tier 1 estimate
 - However, units that opt out of a Tier 1 obligation forgo credit outside of event response
 - Resources that opt out will still have their Tier 1 estimate MW used when clearing the Synch Reserve Market so opting out can not be used as a method of withholding MW from the market

- Tier 1 MW compensated during an event

- Status quo for units that respond and
 - a) had no Tier 1 estimate OR
 - b) had a Tier 1 estimate but chose not to accept an obligation to respond

Status quo = Lesser of T1 Actual Estimate and T1 response (up to 110% of Tier 1 Actual Estimate) for units with a T1 estimate

- Change: Units with Tier 1 estimate that accept an obligation to perform will be credited for their Tier 1 estimate MW
 - Akin to Tier 2 resources being compensated for Tier 2 assignment during an event
 - However, unit must refund the compensation received for any MW that were not provided during an event

- Refund calculation will be the same as that used for Tier 2 compensation refunds
 - “Day Of Refund” applies to all hours with an assignment in the current day
 - “Retroactive Refund” applies to all assigned hours going back the lesser of 14 days or the # of days since last shortfall
- Update the shared refund logic for both Tier 1 and Tier 2 shortfalls such that:
 - The refund applies to any hours with either a Tier 1 obligation or Tier 2 assignment
 - Both Tier 1 and Tier 2 over response can be netted against both Tier 1 and Tier 2 shortfalls within the same account

- Tier 1 MW compensated outside of an event when NSRMCP > \$0
 - Tier 1 obligation MW, which is the Tier 1 estimate for those units that accept an obligation to respond during an event
 - Units that opt out of a Tier 1 obligation receive no credit for their Tier 1 estimate
- Tier 1 estimate calculation remains the lesser of:
 - MW difference between economic base point and Eco Max or Spin Max
 - Ramp rate adjusted by Degree of Generation Performance * 10 minutes
- Make change to allow Spin Max to be updated intra-hour so that unit's operating parameters can be more accurately modeled and Tier 1 MW can be more accurately estimated
- No longer estimate Tier 1 MW on resources that are self-scheduled for energy and dispatched at min



Potential Tier 1 Credit Reduction from Opt Out – 2014 calendar year

This chart demonstrates the reduction in Tier 1 Credits that would have been realized as a result of the PJM proposal if it had been effective during 2014. Because the number of MW that will opt out of accepting a Tier 1 Performance Obligation cannot be accurately predicted, the potential reduction was calculated for several scenarios, each assuming a different percentage of the total Tier 1 MW would opt out of accepting the obligation.

No.	Original Tier 1 Credit	Tier 1 MW Opt-Out	New Credit with Opt-Out %	Reduction from Opt Out
1	\$26,976,902	0%	\$26,976,902	\$0
2		25%	\$20,232,677	\$6,744,225
3		50%	\$13,488,451	\$13,488,451
4		75%	\$6,744,226	\$20,232,676

- Section 4.1 – edits addressing compensation for Tier 1 Synchronized Reserve Resources that do not opt out of a Tier 1 Performance Obligation
- Sections 4.2.1, 4.2.4, and 4.2.6 – edits addressing the determination and communication of Tier 1 availability and Tier 1 estimates
- Section 4.2.10 - edits detailing compensation for Tier 1 resources that accept a Tier 1 Performance Obligation
- Section 4.2.12 – edits detailing penalties for non-performance by Tier 1 resources with a Tier 1 Performance Obligation
- General clean up revisions, including:
 - Revised reference to Non-Synchronized Reserve Penalty Factor in table in section 2.5
 - Cleaned up references to other manuals in sections 3.2.1 and 3.2.4

- Section 6.1 - Updated overview of how Tier 1 reserves are compensated
- Section 6.2 – Updated details for Tier 1 credit calculations including:
 - Specified that only Tier 1 resources that accept a Performance Obligation will receive the Synchronized Reserve Market Clearing Price when NSRMCP > \$0.
 - Added language around making resources that respond to synch reserve events whole to their cost to respond (Tier 1 or Tier 2) .
 - Moved the refund payment for underperformance during a synchronized reserve event from section 6.3 to this section.

- Added the following definitions:
 - Tier 1 Performance Obligation
 - Tier 1 Synchronized Reserve Actual Estimate
 - Tier 1 Synchronized Reserve Estimate
 - Tier 1 Synchronized Reserves
 - Tier 2 Synchronized Reserves
- Section 3.2.3A Synchronized Reserve
 - Specified compensation of Tier 1 resources that both accept and opt out of performance obligations both when spin events occur and do not occur and when the NSRMCP is both greater than and equal to \$0.
 - Added Tier 1 Performance Obligation and Opt Out