

# Market Suspension

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# Definition of Market Suspension – Approved at 6/9/2021 MIC

- Defined for suspensions  $\leq 6^*$  hours and  $> 6^*$  hours
- For Day-Ahead: Status Quo, as currently defined in Tariff section 1.10.8(d)
- For Real-Time: Inability by Dispatch to provide Markets with Economic (Zonal) Dispatch results where at least a total of seven 5-minute intervals are missing within a market hour
  - For  $\leq 6^*$  hours: substitute missing hours with available DA or RT LMPs or average of adjacent hours
  - For  $> 6$  hours: \$0/MWh LMPs and make whole to lesser of Dispatch MW or actual MW using cost-based offers\*

\*Revised proposal makes changes to these components (see slide 4)

- At 9/29/2021 MRC, stakeholders proposed returning to MIC to define rules for long-term suspensions
  - Compensate resources beyond their short-run marginal costs
  - Suspensions > 168 hours (7 days)\*
  - New proposed market clearing mechanism

\*Revised proposal makes changes to this component (see slide 4)

- Defined for suspensions  $\leq 24$  hours and  $> 24$  hours
- For Day-Ahead: Status Quo, as currently defined in Tariff section 1.10.8(d)
- For Real-Time: Inability by Dispatch to provide Markets with Economic (Zonal) Dispatch results where at least a total of seven 5-minute intervals are missing within a market hour
  - For  $\leq 24$  hours: substitute missing hours with available DA or RT LMPs or average of adjacent hours
  - For  $> 24$  hours: proposed long-term market clearing mechanism using aggregate supply curve

- Construct aggregate supply curve and price hourly at the intersection of supply and demand
  - Ignores constraints
  - Energy & Ancillary Services still calculated at 5-min intervals per Tariff
- Aggregate supply curve would be established from available offers (including available resources not running)
  - Use actual generation MW as proxy for demand
  - Find intersection of supply and demand
- Under existing rules, self-scheduled resources will still count towards supply stack but with \$0 price, and will not be eligible to set price
  - Resources that have been directed to not operate will not be eligible to set price



# Market Suspension Scenarios

*Grey Italics – Existing provisions*

Black non-Italics – Approved at 6/9/2021 MIC

Green – Proposed long-term clearing mechanism

#	Design Components	<= 24 hours	> 24 hours
1	Determination of DA clearing prices during market suspension	<i>Status Quo - Use RT</i>	<i>Status Quo - Use RT</i>
2	Determination of RT clearing prices during market suspension	<p>If DA is available, use DA</p> <p>If DA is unavailable, avg. of RT preceding and subsequent hour</p>	<p>If DA is available, use DA</p> <p>If DA &amp; RT unavailable, LMPs priced hourly based on aggregate supply curve (Energy LMP determined from supply curve, Loss LMP &amp; Congestion LMP will be set to \$0)</p>



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# Market Suspension Scenarios (cont.)

#	Design Components	$\leq 24$ hours	$> 24$ hours
3	Determination of Regulation clearing prices during market suspension	Avg. of MCP preceding and subsequent hour	<p>If PJM is assigning Regulation, resources will be compensated based on regulation clearing cost (determine aggregate price, where every online resource gets paid the clearing price based on the supply curve [using regulation offers plus opportunity cost], where the highest cost resource providing Regulation will set price)</p> <p>Performance Score: use 100-day rolling avg.</p> <p>Mileage Ratio: set to 1</p> <p>Marginal Benefits Factor: MBF would be based on the historical avg. MBF over past hours that shared the same penetration of batteries that exist for the given hour in question</p>
4	<i>Regulation Charges</i>	<i>Status Quo (no special logic needed to account for a market suspension)</i>	<i>Status Quo (no special logic needed to account for a market suspension)</i>



# Market Suspension Scenarios (cont.)

*Grey Italics – Existing provisions*

Black non-Italics – Approved at 6/9/2021 MIC

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#	Design Components	<b>&lt;= 24 hours</b>	<b>&gt; 24 hours</b>
5	Determination of Reserves clearing prices during market suspension	Avg. of MCP preceding and subsequent hour	If PJM is assigning Reserves, resources will be paid the difference between energy price and offer price for the amount of reserves resources can supply. Otherwise, resources get paid the clearing price for their output (unless PJM asks resource to back down because it's not needed).
6	Synchronized Reserve Charges	N/A	Allocate all reserve costs to the RTO reserve zone and calculate charges as normal
7	Non-Synchronized Reserve Charges	N/A	Allocate all reserve costs to the RTO reserve zone and calculate charges as normal
8	Determination of relevant offers	If DA is unavailable, use RT offers only  If RT is unavailable, use last available offers	Cost-based offers





# Market Suspension Scenarios (cont.)

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#	Design Components	<= 24 hours	> 24 hours
9	Make-Whole / Settlements (Balancing Operating Reserve Credits)	<i>Status Quo - Make resources whole to lesser of Dispatch MW (if Dispatch information is available to the generator) or Actual MW</i>  PJM will determine LOC based on best available data.	If > 24 hours, no LOC will be paid through Balancing Operating Reserve.  Resources directed to not operate would not be eligible to receive uplift. For all resources operating other than those directed to not operate, current uplift eligibility rules would apply.
10	Balancing Operating Reserve Charges	N/A	Assign all Operating Reserves to Reliability bucket and allocate to Load plus Exports (per current rules).



# Market Suspension Scenarios (cont.)

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#	Design Components	<= 24 hours	> 24 hours
11	Treatment of FTR Settlements during Market Suspension	<i>Status Quo - If DA unavailable, use RT</i> <i>Status Quo - If RT unavailable, use DA</i> If DA & RT unavailable, avg. of RT preceding and subsequent hour	Zero value (no congestion LMPs). Both the original FTR auction costs and the DA FTR target allocation value would be equal to zero for that hour.
12	Treatment of Exports	N/A	N/A



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# Market Suspension Scenarios (cont.)

#	Design Components	<= 24 hours	> 24 hours
13	Treatment of Imports	N/A	<p>Dispatchable transaction products would be suspended. All other imports would be compensated at LMP, per current rules.</p>
14	Clarify lag in which settlements are billed	<p>Bill all activity according to the existing timelines dictated in the operating agreement.</p>	<p>For those line items included in the weekly billing statement (generally energy, capacity and transmission service), activity will be billed no later than in the next weekly billing statement that is billing activity for the month in question and which is issued at least 5 business days from the date on which PJM Settlements Inc receives all data necessary to calculate billing for such line items. If there are no remaining weekly bills which fit this criteria, the activity will be billed no later than the next monthly bill that goes out at least 5 business days from the date on which PJM Settlements Inc receives all data necessary to calculate billing for such billing line items.</p> <p>All other billing line items will be billed within three calendar months after the calendar month that included such market suspension.</p>

- MIC
  - First Read: 6/8/2022 (solution package)
  - Endorsement: 7/13/2022 (solution package)
- MRC
  - First Read: 8/24/2022 (OA revisions)
  - Endorsement: 9/21/2022 (OA revisions)
- MC
  - Approval: 9/21/2022

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