

Market Suspension First Read

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- Problem Statement
- Issue Charge
- Phase I Summary
- Market Suspension Design Components
- Next Steps
- Appendix

- In the event of a Market Suspension for which market results and clearing prices cannot be determined, there are currently limited business rules regarding how to handle settlements and other PJM processes. For example, business rules indicate that if the day-ahead energy market is unable to be cleared by 11:59 on the day before the affected operating day due to extraordinary circumstances, then no settlements are made in the day-ahead market and all settlements will be based on real-time quantities and prices. However there are no business rules that indicate how settlements would occur if the real-time quantities and prices cannot be determined. Additionally there may be insufficient business rules associated with impacts to other areas of settlements and other PJM processes as the result of a market suspension. These limited business rules create an increased risk to PJM and stakeholders.
- PJM does not anticipate market suspension events to occur and has never had a situation where there were no market results and clearing prices. However, PJM and stakeholders should be prepared with clear business rules in the event that the PJM markets cannot clear and produce market results.

- Identify opportunities to develop enhanced business rules applicable during a market suspension
- Key Work Activities & Scope
 - Phase 1: Define/Examine Market Suspension in General, and Associated Impacts on Settlements
 - Define “market suspension”
 - Review instances in which a market suspension may occur
 - Review consequences to PJM markets associated with a market suspension
 - Review Options for how settlements can be determined in the event of a market suspension
 - Identify, examine, and implement any necessary changes to PJM’s business rules to accommodate the impact of a market suspension on settlements
 - Phase 2: Identify Other Necessary Changes to PJM Business Rules in the Event of a Market Suspension
 - Identify, examine, and implement any other necessary changes to PJM’s business rules to accommodate the impact of a market suspension
- Expected Deliverables
 - Define what determines a market suspension
 - Define effective period of a market suspension
 - Define how settlements are calculated or determined in the event of a market suspension
 - Determine opportunities for enhanced business rules, including any necessary changes to applicable requirements and deadlines in the event of a market suspension

PJM, IMM, and Stakeholders reviewed existing practices and potential design options through multiple MIC Special Sessions from October 2020 through April 2021

- The proposed single package represents a compromised solution that provides a clear definition for a market suspension along with the settlement impacts

- 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
 - Note: If less than 7 intervals have no dispatch rates then the hourly integrated value would be determined by the average of the remaining intervals for which there is data and that hour would NOT be considered a market suspension hour

Status Quo

- No scheduled MW quantities or prices will be made for the Day-Ahead energy market, as they will be based on Real-Time quantities and prices

- If less than or equal to 6 hours, average the preceding hour and subsequent hour interval prices
- If greater than 6 hours, use Day-Ahead market clearing prices for the market hours corresponding to the Real-Time market disruptions
- If Day-Ahead & Real-Time is unavailable, make resources whole to the lesser of their actual MW or dispatch MW and the lesser of their cost-based or price-based offer

- If less than or equal to 6 hours, average the preceding hour and subsequent hour interval prices
- If greater than 6 hours, make resources whole to their actual MW and PJM will determine Lost Opportunity Cost based on best available data

If Markets Gateway is not operational, utilize last available offers submitted

- This is if members cannot update offers during market suspension

- If no Day-Ahead, use Real-Time quantities & prices (status quo)
- If no Real-Time, resources are made whole to the lesser of their dispatch MW or their actual MW (status quo)
 - Non-ramp limited values are based on the LMP for dispatch MW
- If no Day-Ahead and no Real-Time for less than or equal to 6 consecutive hours, resources are made whole to the lesser of their dispatch MW or their actual MW (status quo)
- If no Day-Ahead and no Real-Time for greater than 6 consecutive hours, LMPs would be set to \$0/MWh and resources will be made whole to the lesser of their dispatch MW or their actual MW and the lesser of their cost-based or price-based offers
 - For Regulation and Reserve clearing prices, PJM will determine Lost Opportunity Cost based on best available data

- If no Day-Ahead or Real-Time less than or equal to 6 hours, average the preceding hour and subsequent hour interval prices
- If no Day-Ahead or Real-Time greater than 6 consecutive hours, there would be no congestion LMPs and therefore price would be zero value

- Post market suspension as emergency procedure
 - Include timing and duration
- Method of communication would be by Email / All-Call / Pardot system

- MIC
 - First Read: 5/13/2021 (Problem Statement, Issue Charge, solution package)
 - Endorsement: 6/9/2021 (solution package)
- MRC
 - First Read: 6/23/2021 (OA revisions)
 - Endorsement: 7/28/2021 (OA revisions)
- MC
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Market Suspension



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Market Suspension Scenarios

Scenarios & Descriptions

		Market Suspension Scenarios				
		1	2	3	4	5
		No Day-ahead*	No Real-time <= 6 Hours	No Real-time > 6 Hours	No Day-ahead & No Real-time (hours may span multiple market days)	
					<= 6 Consecutive Hours	> 6 Consecutive Hours
LMP Prices	Day-Ahead		Use DA			
	Real-Time	◆ Use RT	Avg. of RT preceding and subsequent hour	Use DA	Avg. of RT preceding and subsequent hour	\$0/MWh LMPs
Regulation and Reserve Clearing Prices				Avg. of RT preceding and subsequent hour	Make resources whole to their actual MW, determine LOC	Avg. of RT preceding and subsequent hour
Relevant Offers if not available		◆ RT offers only	Last Available Offers	Use DA	Last Available Offers	Cost Based Offers
Dispatch MW		◆ RT only	Existing Ops procedures (EMS, VBUCC, Incremental)	Existing Ops procedures (EMS, VBUCC, Incremental)	Existing Ops procedures (EMS, VBUCC, Incremental)	Existing Ops procedures (EMS, VBUCC, Incremental)
Make-Whole		◆ Use RT	◆ Non-ramp-limited value based on LMP for Dispatch MW; make whole to lesser of dispatch or actual MW	◆	◆	Per current rules, but use cost-based offers (\$0/MWh LMPs)
FTR Settlements			◆	◆ Use DA	Avg. of RT preceding and subsequent hour	Zero value (no congestion LMPs)
Virtuals		◆ None	Settle against calculated RT LMP	Use DA (results in no settlement value)	None	None
Notifications		Email, Pardot, and All-Call				