

# Market Suspension

Stefan Starkov
Sr. Engineer, Day-Ahead Market
Operations
Market Implementation Committee
October 7, 2020

www.pjm.com | Public PJM©2020



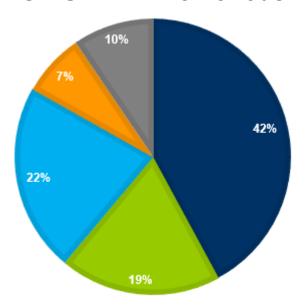
## Historical Real-Time Outage Data

### Length of an outage

Year	Number of Events	Total Number of 5 minute intervals	% of 5 minute intervals per year
2013	15	270	0.26%
2014	11	100	0.10%
2015	15	115	0.11%
2016	15	486	0.46%
2017	20	124	0.12%
2018	16	241	0.23%
2019	6	63	0.06%

- Very small number of SCED events over the past 7 years
- Average of 0.19% intervals per year over the past 7 years
- 90% of the total events are less than 2 hours long
  - 61% of the total events are less than 1 hour

#### **Off-SCED Time Periods**



#### MAN DISP DURATION (# OF EVENTS)

- < 30 Minutes (40)</p>
- 30 to 59 Minutes (18)
- 60 to 89 Minutes (21)
- 90 to 119 Minutes (7)
- > 120 Minutes (9)



## Potential Causes of a Market Suspension

### Technical

- Technical malfunction that limits, prohibits or otherwise interferes with the ability of the Office of the Interconnection to obtain Market Participant bid/offer data or to clear the Day-ahead or Real-time Energy Markets
- Force Majeure
  - Natural Disasters
  - Blackouts



# Consequences from a Market Suspension

- Missing unit bid and/or operating data
- No market clearing prices
- Impact to settlements
  - If Day-Ahead market is suspended
    - Tariff/OA provision: Default to use Real-time LMPs
  - If Real-Time market is suspended
    - Inability to produce charges and credits for intervals of market suspension
    - No Tariff/OA provisions



# Proposed Definition for a Market Suspension

### Market Suspension Proposed Definition

- Day-Ahead
  - Inability to clear DA market by 11:59 p.m. day before
    - Defined in Tariff section 1.10.8 (d)
- Real-Time?
  - Inability to calculate RT clearing prices for >20 hours in a market day
    - If <20 hours then clearing prices will be interpolated based on available data</li>

1.10.8 (d): ......if the Office of the Interconnection is unable to clear the Day-ahead Energy Market prior to 11:59 p.m. on the day before the affected Operating Day due to extraordinary circumstances as described in subsection (b) above, no settlements shall be made for the Day-ahead Energy Market, no scheduled megawatt quantities shall be established, and no Day-ahead Prices shall be established for that Operating Day. Rather, for purposes of settlements for such Operating Day, the Office of the Interconnection shall utilize a scheduled megawatt quantity and price of zero and all settlements, including Financial Transmission Right Target Allocations, will be based on the real-time quantities and prices as determined pursuant to Sections 2.4 and 2.5 hereof

1.10.8 (b) ......For purposes of this subsection, extraordinary circumstances shall mean a technical malfunction that limits, prohibits or otherwise interferes with the ability of the Office of the Interconnection to obtain Market Participant bid/offer data prior to 11:59 p.m. on the day before the affected Operating Day.



### What do other ISO/RTOs do?

	РЈМ	MISO	ERCOT	ISO-NE	CAISO
If DA market is suspended	Use Real-time LMPs	N/A	Resources made whole to their actual verified operating costs	Make emergency filing with FERC along with proposed resolution for determining prices	Use previous day DA results or Settle at RT quantities and prices
If RT market is suspended	N/A	Use RT offers in place prior to event start. Updated offers allowed but subject to IMM review	Issues a Watch and effectively goes on manual dispatch	Make emergency filing with FERC along with proposed resolution for determining prices	Use previous day DA results on hour-per-hour basis for applicable hours of suspension



Facilitator:
Lisa Morelli,
Lisa.Morelli@pjm.com

Secretary:
Nick DiSciullo,
Nicholas.DiSciullo@pjm.com

Presenter/SME: Stefan Starkov, Stefan.Starkov@pjm.com

**Market Suspension** 



### Member Hotline

(610) 666 - 8980

(866) 400 - 8980

custsvc@pjm.com