

Transmission Outage Scheduling Performance and Improvement

Prepared for the Economic Outage Task Force

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Executive Summary

- **Advanced notification of planned outage submissions is an important element for a well functioning CRR market**
- **Many outages in ERCOT are not considered in the CRR model build process due to the timing of outage submission**
- **A comparison of outage submission timing in ERCOT and PJM showed that the overall performance in PJM was superior**
- **Addressing the performance gap through enhanced rules would help increase market efficiency in ERCOT**



Agenda

- • **Outage submission timing comparison**
- **Outage submission rule comparison**
- **Conclusions**



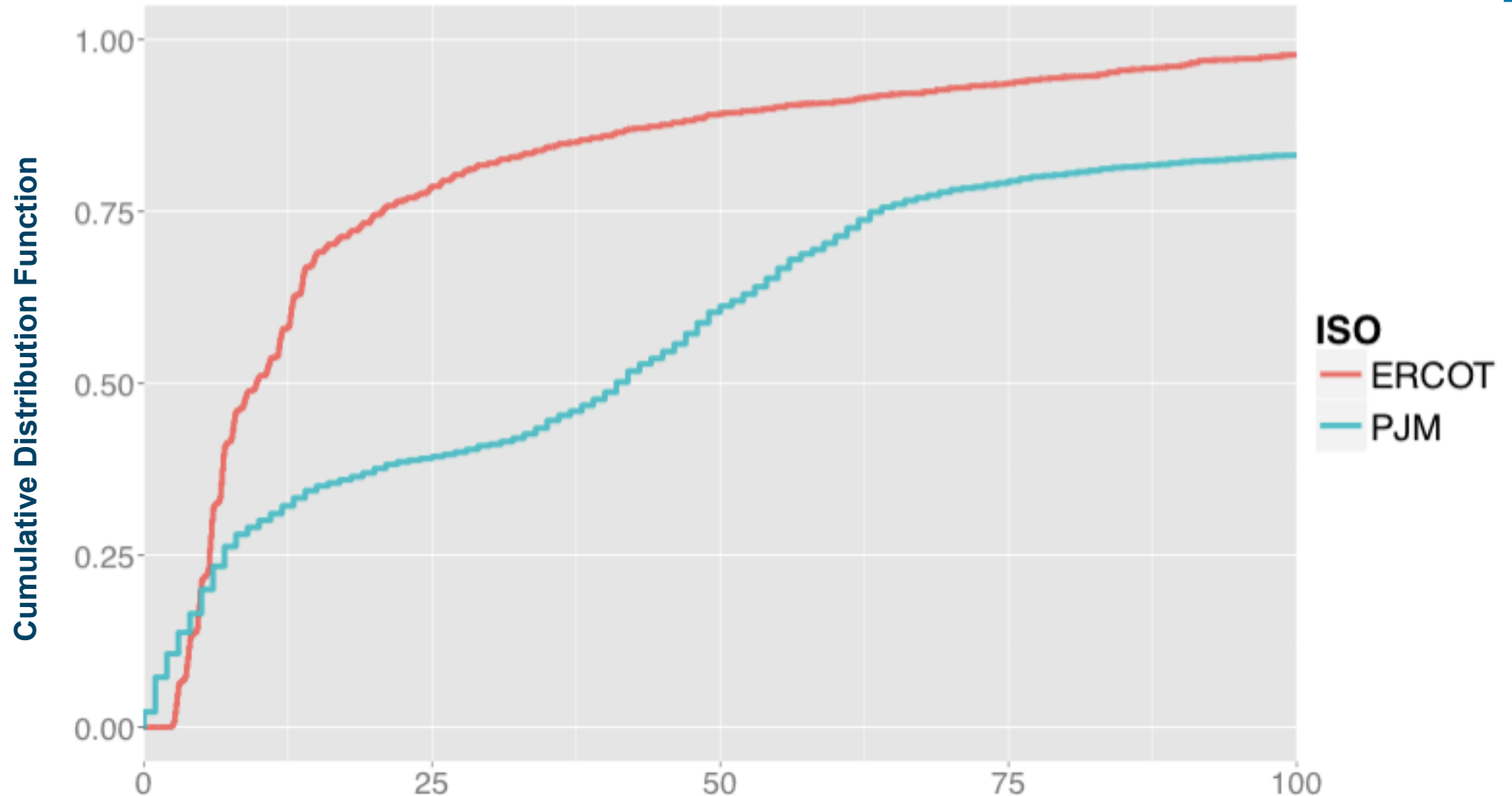
Very few outages are considered in CRR model build 'snapshot' and notification significantly varies between ERCOT TSPs

ERCOT restricted to completed planned outages for period 2013-06-01 to 2014-08-14 and $\geq 69KV$

Outage Scheduling by TSP

– Time Between Scheduling and Initial Start Time –

ERCOT restricted to companies with $>1,000$ completed planned outages for period 2013-06-01 to 2014-08-14



PJM Restricted to outages <365 days scheduled in the last 3 PYs on lines $\geq 69KV$

Number of Days Notice

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PJM Restricted to outages <365 days scheduled in the last 3 PYs on lines $\geq 69KV$



PJM's outage submission rules recognize the needs of the market and promote greater certainty

Comparison of ERCOT and PJM

– Outage Submission Rules Framework–

ERCOT

- **Advanced Notification**

- All outages can be submitted three days prior to their start date
- ERCOT has process for late arriving outages
- No additional requirement to submit outages far in advance

PJM

- **Advanced notification**

- Outage Submission based on the duration of the outage
 - Outage > 5 days; before the 1st of the month six months prior to the starting month of the outage. Additional restriction exist for outages >30 days for the next planning cycle.
 - Outage <= 5 days; before the 1st of the month prior to the starting month of the outages.
- Late outages may be cancelled if it causes congestion requiring off-cost operations.
- PJM procedures states: “For transmission outages exceeding five days, the TO shall use reasonable efforts to submit the planned outage schedule via eDART one year in advance”



Addressing the performance gap with improved rules for outage scheduling would increase market efficiency in ERCOT

Benefits of Improved Rules and Metrics

- **Improved outage scheduling rules would increase market efficiency**
 - More outages included in the CRR model build process
 - Improved modeling has positive impacts on the convergence of the sequential markets
 - Addresses a significant root cause of market shortfalls