

The background features abstract, overlapping geometric shapes in various shades of blue, ranging from light sky blue to deep navy blue, creating a modern, layered effect.

Issue Charge

Operating Reserve Demand Curve

Seeking Approval

PJM Markets & Reliability Committee Meeting

June 23, 2021

Introduction

- ▶ Recent events in ERCOT illuminate the adverse impact of the lack of a “circuit breaker” in PJM’s ORDC and Transmission Constraint Penalty Factor rules.
- ▶ Extreme pricing for an extended or indefinite period during an emergency creates a cost which likely far exceeds the value of any contribution to preserving grid reliability.

Introduction

- ▶ PJM utilizes an Operating Reserve Demand Curve (ORDC) and Transmission Constraint Penalty Factors to establish Locational Marginal Prices (LMP). Under PJM's currently effective rules, energy component of LMP can reach \$3,750/MWh.
- ▶ The “downward sloping” ORDC effective on May 1, 2022, approved by the Federal Energy Commission (FERC) in May 2020, allows PJM LMPs to reach or exceed \$12,050/MWh in cases of extreme reserve shortages.

Current and Future Maximum Energy Price

Product	Current Maximum Clearing Price (\$/MWh)	After May 1, 2022 Maximum Clearing Price (\$/MWh)
Secondary Reserves	N/A	\$2,000*
Primary Reserves	\$850	\$6,000*
Synchronized Reserves	\$1,700	\$10,000*
Energy	\$3,750 [^]	\$12,050* [^] (assumes the marginal energy resource is \$2,000)

[^] No congestion is included directly.

* Assumes the sub-zone is not modeled for 30 Minute Reserve. In instances when the sub-zone is modeled, the \$2,000 penalty factor on the 30 Minute Reserve Sub-zone ORDC would also cascade through the above prices.

Issue Charge Sponsors

- ▶ Sponsors:
 - ▶ Old Dominion Electric Cooperative
 - ▶ Southern Maryland Electric Cooperative
 - ▶ Delaware Municipal Electric Corporation
 - ▶ American Municipal Power
 - ▶ PJM ICC
 - ▶ Buckeye Power
 - ▶ Northern Virginia Electric Cooperative
 - ▶ Dominion Energy
 - ▶ North Carolina Electric Membership Corporation

ORDC Issue Charge

KWA #1:

- ▶ Education on the current and pending PJM market rules for use of ORDCs and Transmission Constraint Penalty Factors in LMPs including the input assumptions for the ORDCs. The education will also include pricing rules during emergency actions, triggers for Performance Assessment Intervals (PAI), and the automatic use of the maximum reserve penalty factors.
 - ▶ Begin KWA #1 (Education) in July 2021

ORDC Issue Charge

KWA #2:

- ▶ Explore potential “circuit breaker(s)” or other stop loss approach(es) that could limit extreme pricing whose cost likely far exceeds the value of any contribution to preserving grid reliability.
- ▶ The discussion would also include potential additional operational authorities needed by PJM to maintain grid reliability under such conditions.

ORDC Issue Charge

KWA #3:

- ▶ Explore potential enhancements to PJM's ORDC rules to address the impact of recent changes in PJM's dispatch protocols on forecast uncertainty embedded within the approved curve shape.
- ▶ Explore, and address as appropriate, the additional market and credit risks of the ORDC changes in light of recent events in ERCOT, SPP, and MISO.

Venue, Work Plan, Duration & Priority Level

Venue: EPFSTF (Energy Price Formation Senior Task Force)

Begin:

- ▶ KWA #1 (Education) July 2021
- ▶ KWA #2 after Education phase
 - ▶ KWA#2 duration: six months.
 - ▶ Every effort will be made to expedite voting in an effort to receive FERC action on any potential rule changes before May 2022.
- ▶ KWA #3 after KWA #2 work is concluded or substantially concluded.

Start Date	Priority Level	Timing	Meeting Frequency
7/1/2021	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Immediate	<input type="checkbox"/> Weekly
	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> Near Term	<input checked="" type="checkbox"/> Monthly
	<input type="checkbox"/> Low	<input type="checkbox"/> Far Term	<input type="checkbox"/> Quarterly

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