



Issue Charge

Operating Reserve Demand Curve & Transmission Constraint Penalty Factors

First Read

PJM Markets & Reliability Committee Meeting

May 26, 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.
- ▶ There is no demonstrated reliability benefit for imposing extreme and in-actionable pricing for an extended or indefinite period during an emergency.

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 \$14,000/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.

* 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
 - ▶ Vistra Energy
 - ▶ Northern Virginia Electric Cooperative
 - ▶ East Kentucky Power Cooperative
 - ▶ Dominion Energy
 - ▶ North Carolina Electric Membership Corporation

Key Work Activities (KWA) #1 & #2

- ▶ KWA #1: Education on PJM's downward sloping ORDC and Transmission Constraint Penalty Factors.
 - ▶ Begin KWA #1 (Education) in July 2021
- ▶ KWA #2: Consideration of a potential “circuit breaker” or other stop loss approach to limit extreme pricing that is not likely to preserve grid reliability and is inactionable by market participants.
 - ▶ KWA #2 starts after Education
 - ▶ KWA #2 Duration: six months.

KWA #3

- ▶ KWA #3: potential enhancements to ORDC and Transmission Constraint Penalty Factor rules

Work Plan, Duration & Priority Level

Begin:

- ▶ KWA #1 (Education) July 2021
- ▶ KWA #2 after Education phase
 - ▶ KWA#2 duration: six months.
- ▶ 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

Contact Information

- ▶ Adrien Ford, ODEC
 - ▶ aford@odec.com, 215-251-2427
- ▶ John Rohrbach, ACES on behalf of SMECO
 - ▶ jrohrbach@acespower.com, 281-814-5167