

# Operating Reserve Demand Curve & Transmission Constraint Penalty Factors

## Issue Source

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

## Issue Content

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, the energy component of LMP prices can reach \$3,750/MWh. The "downward sloping" ORDC effective on May 1, 2022, approved by the Federal Energy Commission (FERC) in May 2020<sup>1</sup>, allows PJM LMPs to reach or exceed \$12,050/MWh in cases of extreme reserve shortages.

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. Sponsors submit that at some point, the incremental reliability benefit no longer warrants imposing extreme pricing for an extended or indefinite period during an emergency.

In the Key Work Activities (KWA) section, in KWA #1, this issue charge addresses education on PJM's downward sloping ORDC and Transmission Constraint Penalty Factors. In KWA #2, potential "circuit breaker(s)" or other stop loss approach(es) will be considered to limit the duration of extreme pricing whose cost likely far exceeds the value of any contribution to preserving grid reliability. In KWA #3, sponsors expect to explore potential enhancements to the rules regarding ORDCs and the Transmission Constraint Penalty Factors.

## Issue Content

PJM's ORDC and energy price formation rules, including such rules as modified in FERC Docket No. EL19-58 *et al.*, are the content of this Issue Charge.

## Key Work Activities and Scope

The following are key work activities that should be undertaken to address the issues articulated above.

- 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.
- 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.

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<sup>1</sup> PJM Interconnection, L.L.C., 171 FERC ¶ 61,153 (2020) <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=15540317>. Also see: <https://pjm.com/-/media/committees-groups/committees/mic/2021/20210407/20210407-mic-info-only-operating-reserve-demand-curvesordc.ashx>

- 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.

## Expected Deliverables

Revisions to PJM governing documents, and conforming manual language, to reflect of any approved solution(s).

## Decision-Making Method

Tier 1 consensus (unanimity) on a single proposal.

## Stakeholder Group Assignment

EPFSTF (Energy Price Formation Senior Task Force)

## Expected Duration of Work Timeline

Given the timing considerations of the May 2022 ORDC as well as the scope of the assignment and deliverables, it is proposed and recommended that KWA #1 begin in July 2021 and KWA #2 and KWA #3 begin thereafter. The work of KWA#2 is expected to conclude in 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.

It is expected that KWA #3 will begin 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"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> Immediate <input checked="" type="checkbox"/> Near Term <input type="checkbox"/> Far Term	<input type="checkbox"/> Weekly <input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Quarterly

## Charter

(check one box)

<input type="checkbox"/>	This document will serve as the Charter for a new group created by its approval.
<input checked="" type="checkbox"/>	This work will be handled in an existing group with its own Charter (and applicable amendments).