Final Review and Recommendation
2024/25 Long-Term Market Efficiency Window 1 – Museville-Smith Mountain 138 kV

Version 1

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2024/25 Long-Term Market Efficiency Window 1 – Flowgate ME-1

As part of its 2024/25 RTEP process cycle of studies, PJM identified flowgates that were put forward for proposals as part of the 2024/25 Long-Term Market Efficiency Window 1. Specifically, Flowgate ME-1 - discussed in this Final Review and Recommendation report - includes the flowgate listed in **Table 1**.

Table 1. 2024/25 Long-Term Market Efficiency Window 1 – Flowgate ME-1

Flowgate ID	Description	Voltage Level	Driver
ME-1	Museville-Smith Mountain	138 kV	Congestion

Proposals Submitted to PJM

PJM opened the 2024/25 Long-Term Market Efficiency Window 1 for 60 days beginning April 11, 2025 and closing June 10, 2025. During the window, six proposals were submitted through PJM's Competitive Planner Tool for this congestion driver. The proposals are summarized in **Table 2**. Publicly available redacted versions of the proposals can be found on PJM's web site: https://www.pjm.com/planning/competitive-planning-process/redacted-proposals.aspx.

Table 2. 2024/25 Long-Term Market Efficiency Window 1 – Flowgate ME-1 List of Proposals

Proposal ID#	Project Type	Project Description	Estimated In-Service Construction Cost ($, millions)	Cost Capping Provisions (Y/N)
332	Upgrade	Rebuild one span of the Smith Mountain-Museville 138 kV line. Rebuild one span of the Matt Funk-Cloverdale 345 kV line. Mitigate clearance issues on the Glen Lyn-Peters Mountain 138 kV, Claytor-South Christiansburg 138 kV, East Danville-Banister 138 kV, Bearskin-Museville 138 kV, Smith Mountain-Museville 138 kV, and Matt Funk-Cloverdale 345 kV lines. Replace station equipment at Smith Mountain, Museville, Banister and South Christiansburg stations. Rebuild approximately 15 miles of the Fieldale-Thornton 138 kV double circuit line.	$86.11	N
385	Upgrade	Rebuild the Smith Mountain-Museville 138 kV line. Rebuild one span of the Matt Funk-Cloverdale 345 kV line. Mitigate clearance issues on the Glen Lyn-Peters Mountain 138 kV, Claytor-South Christiansburg 138 kV, East Danville-Banister 138 kV, Bearskin-Museville 138 kV, Smith Mountain-Museville 138 kV, and Matt Funk-Cloverdale 345 kV lines. Replace station equipment at Smith Mountain, Museville, Banister and South Christiansburg stations. Rebuild approximately 15 miles of the Fieldale-Thornton 138 kV double circuit line.	$131.64	N
717	Greenfield	Construct 765 kV Rocky Ford and 765/500kV Stage Substations. Expand existing Cunningham and Morrisville 500 kV Substations. Construct Rocky Ford to Stage 765kV, Stage to Cunningham 500kV, and Cunningham to Morrisville 500kV transmission lines.	$1568.72	Y
733	Upgrade	Rebuild one span of the Smith Mountain-Museville 138 kV line and replace disconnect switches at Smith Mountain station.	$1.81	N
991	Greenfield	Construct a 765/500kV Durandal greenfield substation that will interconnect a new 765kV Joshua Falls - Durandal line and the existing Clover - Rawlings 500kV line. Construct Joshua Falls - Durandal 765kV greenfield line.	$520.38	Y
993	Greenfield	Construct a 765/345KV greenfield substation, called Tycho, that will interconnect the existing 765kV Wyoming-Jacksons Ferry line and the existing 345 kV Kanawha River-Matt Funk line. Install a 765/345KV transformer at Tycho. Matt Funk-Cloverdale 345 kV span upgrade.	$270.09	Y

Final Review and Recommendation

PJM has completed a final review for the proposals listed in **Table 2** above based on data and information provided by the project sponsors as part of their submitted proposals. The data and information included the following preliminary analytical quality assessments:

- *Initial Performance Review* – PJM evaluated whether or not the project proposal satisfied the benefit to cost ratio threshold of 1.25 and solved the required congestion driver.
- *Initial Planning Level Cost Review* – PJM reviewed the estimated project cost submitted by the project sponsor and any relevant cost containment mechanisms submitted.
- *Initial Feasibility Review* – PJM reviewed the overall proposed implementation plan to determine if the project, as proposed, can feasibly be constructed.

The performance reviews yielded the following results:

1. All proposals passed a N-1 thermal flowgate screening.
2. Proposal Nos. 332, 385, 717, 733, and 991 addressed the congestion driver by significantly reducing congestion on flowgate ME-1 within the 2029 base simulation.
3. Proposal 993 failed to address the congestion driver within the 2029 base simulation.
4. All proposals exceeded the benefit to cost ratio threshold of 1.25.

Table 3. 2024/25 Long-Term Market Efficiency Window 1 – Flowgate ME-1 Proposal Comparison

Proposal ID#	Estimated In-Service Construction Cost ($, millions)	BC Ratio Metric	BC Ratio	Driver Congestion Addressed (Y/N)
332	$86.11	Lower Voltage	20.55	Y
385	$131.64	Lower Voltage	13.44	Y
717	$1568.72	Regional	2.97	Y
733	$1.81	Lower Voltage	136.55	Y
991	$520.38	Regional	2.68	Y
993	$270.09	Lower Voltage	6.45	N

The cost review shows cost commitment provisions from Proposal Nos. 717, 991, and 993 that, in summary, will cap ROE incentives for the project cost portion that exceeds estimated designated project capital costs. Proposal Nos. 332, 385, and 733 do not contain cost commitment provisions.

Proposal Nos. 717, 991, and 993 incorporate greenfield construction that will require new or additional easements, and which may impact the ability to timely complete the proposal.

A high level review of the plans identified in the proposals did not reveal any other concerns.

Proposal No. 733 yields a robust benefit to cost ratio that far exceeds all other proposals. PJM performed reliability analysis on Proposal No. 733 and no reliability violation was identified associated with this solution.

PJM presented a First Read of the Initial Performance Review and Recommended Solution for Proposal No. 733 at the November 4th, 2025 TEAC meeting. No stakeholder comments in opposition to the selected solution were received at that meeting nor afterward via Planning Community.

Informational Sensitivity Analyses

For all proposals, PJM also completed a set of informational sensitivity analyses. The results for the sensitivity analyses can be found in the Market Efficiency Update, Appendix A, presented at the November 4th, 2025 TEAC meeting:

https://www.pjm.com/-/media/DotCom/committees-groups/committees/teac/2025/20251104/20251104-item-03---market-efficiency-update.pdf

Recommended Solution

Based on this information, Proposal No. 733 is the more efficient or cost effective solution for the Museville-Smith Mountain congestion driver with a projected in-service date of 6/1/2027.

PJM will submit Proposal No. 733 to the PJM Board for review and approval to include in the RTEP at its February 2025 meeting.