Initial Review and Screening
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 Initial Review and Screening 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

Initial Review and Screening

PJM has completed an initial review and screening of the proposals listed in **Table 2** above based on data and information provided by the project sponsors as part of their submitted proposals. This review and screening included the following preliminary analytical quality assessment:

- *Initial Performance Review* – PJM evaluated whether or not the project proposal solved the required congestion driver and also calculated a benefit to cost ratio for the project proposal.
- *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.

Initial performance reviews yielded the following results:

1. All proposals passed a preliminary N-1 thermal flowgate screening.
2. Proposal Nos. 332, 385, 717, 733, and 991 address the congestion driver by significantly reducing congestion on flowgate ME-1 within the 2029 base simulation.
3. Proposal 993 does not address the congestion driver within the 2029 base simulation.
4. All proposals exceed the benefit to cost ratio threshold of 1.25.

Initial Review Conclusions and Next Steps

All proposals exceed the benefit to cost ratio threshold of 1.25. Proposal 332, 385, 717, 733, and 991 significantly reduce congestion on the congestion driver. Proposal No. 993 does not significantly address the identified congestion driver. A summary comparison of the proposal results for this flowgate is shown in Table 3.

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

Based on this initial assessment, Proposal No. 733 that rebuilds one span of the Smith Mountain-Museville 138 kV line and replaces disconnect switches at Smith Mountain station appears to be the most efficient or cost-effective solution submitted for Flowgate ME-1.