Final Review and Recommendation 2024/25 Long-Term Market Efficiency Window 1 – West Point-Lanexa 115 kV

Version 1

This page is intentionally left blank.

2024/25 Long-Term Market Efficiency Window 1 – Flowgate ME-2

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-2 - 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-2

Flowgate ID	Description	Voltage Level	Driver
ME-2	West Point-Lanexa	115 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, seven 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-2 List of Proposals

Proposal ID#	Project Type	Project Description	Estimated In-Service Construction Cost ($, millions)	Cost Capping Provisions (Y/N)
50	Upgrade	Install a 25MW battery energy storage system (BESS) with a 4-hour charge-discharge duration at Goalders Creek Substation.	$83.92	N
183	Upgrade	Install a 50MW battery energy storage system (BESS) with an 8-hour charge-discharge duration at Goalders Creek Substation.	$221.74	N
338	Upgrade	Partial rebuild and uprate of existing 115kV line #85 from Lanexa to West Point. Install cooling radiator as needed at Northern Neck Transformer #6 to match the rating of Northern Neck Transformer #4.	$28.11	N
390	Upgrade	Construct 230/115kV switching station at Owl Trap 115kV yard and install a 299 MVA 230/115kV transformer. Cut the existing Line #2016 from Lanexa to Harmony Village near the Owl Trap substation.	$21.41	N
525	Upgrade	Construct 230/115kV switching at the future Goalders Creek 115kV substation and install a 299 MVA 230/115kV transformer. Cut the existing Line #2016 from Lanexa to Harmony Village near the Goalders Creek substation. Install a three-breaker ring bus arrangement on the 230 kV side.	$23.41	N
836	Upgrade	Rebuild approximately 10.94-mile double circuit segment of Line #85 between Lanexa (structure 85/1A) and structure 85/75C to current 115kV standards. Line #85 shares a double circuit with 230kV Line #2016.	$62.58	N
910	Upgrade	Partial rebuild and uprate of existing 115kV line #85 from Lanexa to West Point. Rebuild approximately 10.7-mile double circuit segment of Line #2113 between Lanexa (structure 2113/274) and Lightfoot (structure 2113/374) to current 230kV standards.	$90.89	N

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 preliminary N-1 thermal flowgate screening.
2. Proposal Nos. 338, 390, 525, 836, and 910 addressed the congestion driver by significantly reducing congestion on flowgate ME-2 within the 2029 base simulation.
3. Proposal Nos. 50 and 183 failed to address the congestion driver within the 2029 base simulation.
4. Proposal Nos. 390 and 525 yield benefit to cost ratios above 1.25. Proposal Nos. 50, 183, 338, 836, and 910 yield benefit to cost ratios below 1.25.

Table 3. 2024/25 Long-Term Market Efficiency Window 1 - Flowgate ME-2 Proposal Comparison

Proposal ID#	Estimated In-Service Construction Cost ($, millions)	BC Ratio Metric	BC Ratio	Driver Congestion Alleviated (Y/N)
50	$83.92	Low Voltage	0.26	N
183	$221.74	Low Voltage	0.30	N
338	$28.11	Low Voltage	0.97	Y
390	$21.41	Low Voltage	3.05	Y
525	$23.41	Low Voltage	2.71	Y
836	$62.58	Low voltage	0.13	Y
910	$90.89	Low voltage	0.55	Y

Proposal Nos. 390 and 525 yield a robust benefit to cost ratio that far exceeds all other proposals. PJM performed reliability analysis on Proposals No. 390 and 525 and no reliability violation was identified associated with these solutions.

PJM conducted a feasibility review in the form of risk assessment, for which the criteria are shown below in Table 4. The summary of the risk assessment is shown in Table 5.

Proposal 525 involves the enhancement of the current 115kV Goalders Creek substation through the addition of a 3-breaker ring bus and a 230/115kV transformer, along with a new control building. In contrast, proposal 390 consists solely of a transformer yard with a 230kV high tension breaker and tap connected to the 230kV line 2016, the existing control building will be expanded to accommodate the new equipment.

Both proposals are feasible upgrades of the existing 115kV substation in different locations. The constructability is generally deemed as low risk for this category of project. The design of proposal 525 is more reliable in terms of system protection and operational efficiency, resulting in significantly fewer outages required for long-term maintenance.

Table 4. PJM Risk Assessment Criteria

PJM Risk Assessment Criteria							
Risk Assessment	Cost Estimate Risks	Cost Containment Risk	Schedule Risks	Constructability Risks	ROW/Land Acquisition Risk	Outage Coordination Risk Score	Proposing Entity Experience & Capability Risks
Low	Proposal is within 0-10% of Independent Estimate	Hard Cost Cap (Project cost capped with no cost recovery above binding cost cap) with minimal exclusions.	Ratings assessed based on independent assessment of proposed in-service dates, and assessment of significant schedule risks such as such as permitting and constraint mitigation, long-lead material procurement, land/ROW acquisition, construction complexity.	Ratings assessed based on independent assessment of the number and severity of constructability risks assessed for the proposed project scope, such as permitting and constraint mitigation, land/ROW acquisition, construction complexity.	Pure Brownfield Rebuild/Reconductor/New Build within existing ROW (or property already owned by entity)	Ratings assessed based on PJM's assessment of complexity, impact and duration of outages required for development, including consideration of outage coordination plans proposed.	Entity has demonstrated significant experience & capability of developing and operating proposed facilities
Low-Medium	Proposal is within 11-20% of Independent Estimate	Mix of Hard/Soft caps on Project components			Mostly brownfield with some greenfield (i.e. Uses/Overlaps existing ROW but requires expansion or some new greenfield)		Entity has demonstrated limited experience & capability of developing and operating proposed facilities
Medium	Proposal is within 21-30% of Independent Estimate	Soft Caps (No direct cap on Project costs, but indirect caps via reductions to ROE, and/or incentives for cost overruns).			Moderate Mix of Green and Brownfield (i.e. Uses/Overlaps existing ROW but requires expansion or some new greenfield)		Entity has no experience operating proposed facilities, but has demonstrated some experience with developing proposed facilities.
Medium-High	Proposal is within 31-40% of Independent Estimate	Minimal cost caps and/or excessive exclusions			Mostly Greenfield with some Brownfield (i.e. Uses/Overlaps existing ROW but requires expansion or some new greenfield) OR Parallels existing ROW for entire alignment with no overlaps.		Entity has no experience developing and operating proposed facilities, but has provided a detailed & effective plan
High	Proposal is less than 40% of Independent Estimate	No cost containment			Pure Greenfield		Entity has no experience developing and operating proposed facilities and has not provided a detailed & effective plan

Table 5. PJM Risk Assessment Summary for 2024/25 Long-Term Market Efficiency Window 1 – Flowgate ME-2

Proposal ID	Project Type	Cost Containment Risks	Schedule Risks	Constructability Risks	ROW/Land Acquisition Risk	Outage Coordination Risk
390	UPGRADE	High	Low	Low	Low	Medium
525	UPGRADE	High	Low	Low	Low	Low

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 proposals that addressed the congestion driver, 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. 525 is the more efficient or cost effective solution for the West Point-Lanexa congestion driver with a projected in-service date of 1/1/2029.

PJM will submit Proposal No. 525 to the PJM Board for review and approval to include in the RTEP at its February 2025 meeting.