



Final Review and Recommendation 2020/21 Long-Term Window 1 – Cluster No. 1 (French’s Mill to Junction 138 kV)

December 3, 2021

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2020/21 Long-Term Window No. 1 – Cluster No. 1

As part of its 2020/21 RTEP process cycle of studies, PJM identified clustered groups of congestion drivers that were put forward for proposals as part of the 2020/21 Long-Term Window No. 1. Specifically, Cluster No. 1 - discussed in this Final Review and Recommendation report - includes the congestion driver listed in **Table 1**.

Table 1. 2020/21 Long-Term Window No.1 - Cluster No. 1 List of Congestion Drivers

Flowgate ID	Description	Voltage Level	Driver
ME-3	French's Mill to Junction	138 kV	Congestion Relief - Economic

Proposals Submitted to PJM

PJM conducted 2020/21 Long-Term Window No. 1 for 120 days beginning January 11, 2021 and closing May 11, 2021. During the window, several entities submitted five proposals, through PJM's Competitive Planner Tool, for this cluster¹. 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. 2020/21 Long-Term Window No. 1 - Cluster No. 1 List of Proposals

Proposal ID#	Project Type	Project Description	Estimated Total In-Service Construction Cost (\$, millions)	Cost Capping Provisions (Y/N)
102	Upgrade	Reston 230kV Capacitor	\$1.89	N
425	Upgrade	French's Mill-Junction 138kV Terminal Upgrades and Messick Rd-Ridgeley 138kV Line Reconductor	\$11.99	N
540	Upgrade	Bull Run 230kV Capacitor	\$5.73	N
547	Greenfield	Black Oak-Bismark 500kV Line	\$128.75	Y
756	Upgrade	French's Mill-Junction 138kV Terminal Upgrades	\$0.77	N

¹ Note: A number of proposals submitted for the congestion driver Charlottesville to Proffit Rd Del Pt 230 kV (DOM) as the main target also indicated potential congestion benefits for the Junction to French's Mill 138 kV (Cluster No. 1) and Cumberland to Juniata 230 kV (Cluster No. 3) drivers. PJM's preliminary analysis for these proposals found they have little to no impact on the congestion drivers from Cluster Nos. 1 and 3. Therefore, these proposals will not be considered further for inclusion in the Cluster Nos. 1 and 3 analyses.

Final Review and Recommendation

PJM has completed a final review of 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 an N-1 thermal violation screening.
2. Proposal Nos. 425, 547, and 756 addressed the congestion driver by significantly decreasing or eliminating congestion on the target driver ME-3.
3. The Proposal Nos. 102 and 540 have little to no impact on the congestion driver ME-3. Therefore, these capacitor proposals will not be considered as stand-alone solutions for Cluster No. 1.
4. Proposal Nos. 425 and 756 both yield lower voltage benefit to cost ratios above 1.25. Proposal No. 547 yields a regional benefit to cost ratio that is below the 1.25 threshold (see **Table 3**).

Table 3. 2020/21 Long-Term Window No. 1 - Cluster No. 1 Comparison of Anticipated Costs and B/C Ratios

Proposal ID#	Project Description	In-Service Date	Estimated Total Construction Cost (\$, millions)	B/C Ratio Metric	B/C Ratio	Percent Congestion Alleviated
102	Reston 230kV Capacitor	12/1/2022	\$1.89	Low voltage	N/A	0%
425	French's Mill-Junction 138kV Terminal Upgrades and Messick Rd-Ridgeley 138kV Line Reconductor	6/1/2025	\$11.99	Low voltage	7.86	100%
540	Bull Run 230kV Capacitor	6/1/2025	\$5.73	Low voltage	N/A	0%
547	Black Oak-Bismark 500kV Line	6/1/2025	\$128.75	Regional	0.60	99.7%
756	French's Mill-Junction 138kV Terminal Upgrades	4/1/2022	\$0.77	Low voltage	119.03	100%

The cost review shows cost commitment provisions from Proposal No. 547 that, in summary, will cap ROE incentives for the project cost portion that exceeds estimated designated project capital costs. Proposal Nos. 102, 425, 540, and 756 do not contain cost commitment provisions.

Proposal No. 547 incorporates 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. 756 yields a robust benefit to cost ratio that far exceeds all other proposals. PJM performed reliability analysis on Proposal No. 756 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. 756 at the November 30th, 2021 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 passed the B/C ratio threshold and 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 30th, 2021 TEAC meeting².

Recommended Solution

Based on this information, Proposal No. 756 is the more efficient or cost effective solution in Cluster No. 1 with a projected in-service date of 4/1/2022.

PJM will submit Proposal No. 756 to the PJM Board for review and approval to include in the RTEP at its February 2022 meeting.

² <https://www.pjm.com/-/media/committees-groups/committees/teac/2021/20211130/20211130-item-02-market-efficiency-update.ashx>