



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

Version 1

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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 flowgates that were put forward for proposals as part of the 2020/21 Long-Term Window No. 1. Specifically, Cluster No. 1 - discussed in this Initial Review and Screening report - includes the flowgate listed in **Table 1**.

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

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

Proposals Submitted to PJM

PJM opened the 2020/21 Long-Term Window No. 1 for 120 days beginning January 11, 2021 and closing May 11, 2021. For this window, five proposals were evaluated from 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.

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. This review and screening 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.

Initial performance reviews yielded the following results:

1. All proposals passed a preliminary N-1 thermal violation screening.
2. Proposals Nos. 425, 547, and 756 address the congestion driver by eliminating congestion on flowgate ME-3. Proposal No. 756 shifts congestion to the Messick Rd-Ridgeley 138 kV circuit. Proposal Nos. 425 and 547 did not create significant congestion on any additional flowgates.
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 below 1.25.

An initial 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 each of the five proposals did not reveal any other concerns at this stage of PJM's review.

Informational FSA Sensitivity

PJM completed an informational sensitivity of the proposals listed in Table 2. The sensitivity was conducted using a generation expansion plan that included additional generation, specifically, generators which were added as part of the FSA (Facility Study Agreement) sensitivity. 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 below 1.25.

Initial Review Conclusions and Next Steps

Proposal Nos. 425 and 756 both exceed the benefit to cost ratio threshold of 1.25. Proposal No. 547 fails to meet the benefit to cost ratio threshold of 1.25. Proposal No. 756 solves the identified congestion driver, however congestion is shifted to the Messick Rd-Ridgeley 138 kV circuit. Proposal No. 425 solves the identified congestion driver and also upgrades the conductor limited Messick Rd-Ridgeley 138 kV circuit to address the shifted congestion.

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

Proposal ID#	Project Description	Estimated Total Construction Cost (\$, millions)	B/C Ratio Metric	B/C Ratio	Percent Congestion Alleviated
102	Reston 230kV Capacitor	\$1.89	Low voltage	N/A	0%
425	French's Mill-Junction 138kV Terminal Upgrades and Messick Rd-Ridgeley 138kV Line Reconductor	\$11.99	Low voltage	13.64	100%
540	Bull Run 230kV Capacitor	\$5.73	Low voltage	N/A	0%
547	Black Oak-Bismark 500kV Line	\$128.75	Regional	0.74	100%
756	French's Mill-Junction 138kV Terminal Upgrades	\$0.77	Low voltage	189.91*	100%

*Proposal No. 756 shifted congestion to Messick Rd-Ridgeley 138 kV circuit

Based on this information, Proposal No. 425 appears to be the most efficient or cost effective solution in Cluster No. 1. PJM performed preliminary reliability analysis on Proposal No. 425 and no reliability violations were identified. PJM anticipates a retol of the Market Efficiency case that will be used to conduct a final review of all proposals. PJM intends to share the results of this final review with stakeholders at the December TEAC. After which a final recommendation will be made to the PJM Board for review and approval.