

A decorative graphic consisting of numerous thin, white, wavy lines that flow from the top left towards the bottom right, creating a sense of movement and energy. The lines are set against a solid blue background.

Initial Review and Screening 2020/21 Long-Term Window No. 1 – Cluster No. 3 (Juniata to Cumberland 230 kV)

Version 1

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2020/21 Long-Term Window No. 1 – Cluster No. 3

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 1. Specifically, Cluster No. 3 - 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. 3 List of Flowgates

Flowgate ID	Description	Voltage Level	Driver
ME-7	Juniata to Cumberland	230 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. 3 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
218	Upgrade	Juniata-Cumberland 230kV Line Reconductor	\$9.00	Y
251	Upgrade	Juniata - Cumberland 230kV Line Rebuild to double circuit and Cumberland-Williams Grove 230kV Line Reconductor	\$49.05	N
540	Upgrade	Bull Run 230kV Capacitor	\$5.73	N
738	Greenfield	Bow Creek 500/230kV Project	\$55.05	Y

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 flowgate screening
2. Proposal Nos. 218, 251, and 738 address the congestion driver by significantly reducing congestion on ME-7. The proposals 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-7. Therefore, these capacitor proposals will not be considered as stand-alone solutions for Cluster No. 3.
4. Proposal Nos. 218, 251, and 738 yield a benefit to cost ratio above 1.25.

An initial cost review shows cost commitment provisions from Proposal Nos. 218 and 738 that, in summary, will cap ROE incentives for the project cost portion that exceeds estimated designated project capital costs. Proposal Nos. 102, 251, and 540 do not contain cost commitment provisions.

Proposal No. 738 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. 218, 251, and 738 all exceed the benefit to cost ratio threshold of 1.25.

Initial Review Conclusions and Next Steps

Proposal Nos. 218, 251, and 738 all exceed the benefit to cost ratio threshold of 1.25. Proposal No. 218 yielded a robust benefit to cost ratio that far exceeds all other proposals. Proposal Nos. 218 and 251 completely address the identified congestion driver. Proposal No. 738 significantly addresses the identified congestion driver, however some congestion remains. In Proposal Nos. 218, 251, and 738 there was no significant shift of congestion.

Table 3. 2020/21 Long-Term Window No. 1 - Cluster No. 3 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 of Congestion Alleviated
102	Reston 230kV Capacitor	\$1.89	Low voltage	N/A	0%
218	Juniata-Cumberland 230kV Line Reconductor	\$9.00	Low voltage	13.61	100%
251	Juniata - Cumberland 230kV Line Rebuild to double circuit and Cumberland-Williams Grove 230kV Line Reconductor	\$49.05	Low voltage	2.88	100%
540	Bull Run 230kV Capacitor	\$5.73	Low voltage	N/A	0%
738	Bow Creek 500/230kV Project	\$55.05	Low voltage	2.71	95.85%

Based on this information, Proposal No. 218 appears to be the more efficient or cost effective solution in Cluster No. 3. PJM performed preliminary reliability analysis on Proposal No. 218 and no reliability violations were identified. PJM anticipates a retool 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.