# Final Review and Recommendation
# 2023 RTEP Proposal Window 2 - Cluster No. 1

**July 9, 2024**

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# 2023 RTEP Proposal Window No. 1 - Cluster No. 2

As part of its 2023 RTEP process cycle of studies, PJM identified clustered groups of flowgates that were put forward for proposals as part of 2023 RTEP Window No. 2. Specifically, Cluster No. 1 - discussed in this Final Review and Recommendation report - includes those flowgates listed in **Table 1**.

Table 1. 2023 RTEP Proposal Window No. 2 – Cluster No. 1 List of Flowgates

| Flowgate | kV Level | Driver |
|---|---|---|
| 2023W2-PSEG-T15, 2023W2-PSEG-T14, 2023W2-PSEG-T13, 2023W2-PSEG-T9, 2023W2-PSEG-T8, 2023W2-PSEG-T5, 2023W2-PSEG-T6, 2023W2-PSEG-T3, 2023W2-PSEG-T4, 2023W2-PSEG-T1, 2023W2-PSEG-T10, 2023W2-PSEG-T2 | 69 | PSEG FERC Form 715 N-1-1 Thermal |

## Proposals Submitted to PJM

PJM conducted 2023 RTEP Proposal Window No. 2 for 30 days beginning March 6, 2024 and closing April 5, 2024. During the window, two entities submitted four proposals through PJM's Competitive Planner Tool. 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. 2023 RTEP Proposal Window No. 2 – Cluster No. 1 List of Proposals

| Proposal ID# | Project Type | Project Description | Total Construction Cost M$ | Cost Capping Provisions (Y/N) |
|---|---|---|---|---|
| **998** | GREENFIELD | 69kV Circuit Reinforcement from Cedar Grove to Jackson Road. Construct a new dual manhole and conduit system out of Jackson Rd on Madison Street to Riverview Drive. The existing E-759 would be reconfigured to utilize the new duct back to Jackson Rd. The existing N-664 would be rerouted underground between Rt. 80 and Rt. 46 off ramp. This would free up part of the existing E-759 and N-664 circuit to be reconfigured and tap into the I-633. The other new circuit of approximately 4.5mi would exit Jackson Road underground and rise up overhead before the Vreeland Ave Railroad Crossing. The circuit would then continue overhead on the other side of Riverview Drive to run a new pole line and create a new circuit between Jackson and Cedar | 60.56 | N |

| Proposal ID# | Project Type | Project Description | Total Construction Cost M$ | Cost Capping Provisions (Y/N) |
|---|---|---|---|---|
| | | Grove. Open positions will be utilized at Jackson Road and Cedar Grove to accommodate the new circuits. The breakers at Cedar Grove will need to be replaced with 3000A continuous 63kA fault duty breakers. | | |
| **496** | GREENFIELD | New 230kV XLPE Circuit using (230kV rated 3500kcmil cable) from Jackson Road 230kV Station to Cedar Grove 230kV Station | 78.89 | Y |
| **627** | GREENFIELD | New 230kV XLPE Circuit using (345kV rated 5000kcmil cable) from Jackson Road 230kV Station to Cedar Grove 230kV Station | 84.58 | Y |
| **716** | GREENFIELD | Build a 7.6 mile 230 kV underground line from the JCPL Montville Substation to the PSEG Jackson Rd Substation. Expand the Montville 230 kV to a breaker and a half configuration by adding one new bay on the west side of the yard to terminate the new line. At Jackson Rd, terminate the new line in the open bay position next to transformer 40. | 211.08 | Y |

## Final Review and Recommendation

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

1. *Performance Review* – PJM evaluated whether or not the project proposal solved the required reliability criteria violation drivers posted as part of the open solicitation process.
2. *Comparative Cost Review* – PJM reviewed the estimated project costs and cost containment mechanisms submitted for those projects sufficiently addressing the same violation(s) or constraint(s) submitted through the proposal window. A comparative analysis of the proposed costs and cost containment was performed.
3. *Feasibility Review* – PJM reviewed the overall proposed implementation plan to determine if the project, as proposed, can feasibly be constructed.
4. *Additional Benefits Review* – PJM reviewed information provided by the proposing entity to determine if the project, as proposed, provides additional benefits such as the elimination of other needs on the system.

### Performance Review

Performance reviews yielded the following results:

- PJM's review showed that all 4 proposals solve the posted/intended reliability criteria violations and none created a new reliability violation.
- Proposal 627 and 496 both provided a significant reliability margins at a relatively small additional cost with minimal development risk/impact where Proposal 998 and 716 did not.

- For future expandability, Proposal 627 provided an option for future operation at 345kV that enables more efficient integration with the existing and potential future transmission backbone in the area.

**Comparative Cost Review**

PJM compared the costs and cost containment proposed for the 4 competing proposals as shown in **Table 3** below.

Table 3. Review of Costs and Cost Containment

| Category | Proposal 998 | Proposal 496 | Proposal 627 | Proposal 716 |
|---|---|---|---|---|
| Proposal Project Cost ($M) | $60.56 | $78.89 | $84.58 | $211.08 |
| Proposal Project Cost - Capped Components only ($M) | N/A | $78.89 | $84.58 | $204.34 |
| Binding Project Cost Cap ($M) | None | $94.67 | $101.50 | $60.95<br>(Excludes certain cost elements as noted in exclusions) |
| Binding ROE Cap (inclusive of adders/incentives) | None | None | None | None |
| Binding Equity % Cap | None | None | None | None |
| Capital Structure / ROE | ROE of 10.4% | ROE of 10.4% | ROE of 10.4% | Not provided |
| Exclusions | N/A | Uncontrollable costs due to:<br>1. Change in scope and schedule by PJM<br>2. Change in Law<br>3. Governmental Orders<br>4. Environmental Mitigations<br>5. Geotechnical Data<br>6. Damage and Delays<br>7. Permitting Delays<br>8. Route Changes<br>9. Real Estate Costs<br>10. Utility Relocation costs<br>Breach of Transmission Provider | Uncontrollable costs due to:<br>1. Change in scope and schedule by PJM<br>2. Change in Law<br>3. Governmental Orders<br>4. Environmental Mitigations<br>5. Geotechnical Data<br>6. Damage and Delays<br>7. Permitting Delays<br>8. Route Changes<br>9. Real Estate Costs<br>10. Utility Relocation costs<br>11. Breach of Transmission Provider | Cost cap excludes the following cost elements:<br>a. Permitting/routing/siting<br>b. ROW/land acquisition<br>c. Construction & commissioning<br>d. Overheads & misc costs<br>e. Taxes, AFUDC and Escalation<br>Other exclusions include the following project costs due to the following:<br>1. Change in Law<br>2. Inability by PPL to ascertain utility status in NJ<br>3. Changes to location of project due to inability to utilize state/local ROW<br>4. Need to acquire land rights via eminent domain |

| | | | | |
|---|---|---|---|---|
| | | | | 5. LON/FSA application not approved by PUC<br>6. Environmental permit delays<br>7. Increase in component costs by more than 10%<br>8. Increase in Labor costs by more than 3.5%<br>9. Discovery of environmental constraints affecting project<br>10. PJM does not grant outages for the project<br>11. Delay in PJM awarding the project<br>12. Cost increases due to Force Majeure events beyond entity's control |

PJM's review of costs did not identify any concerns with the cost estimates provided for the competing proposals. The difference in costs between proposal 716 and the other similar proposals are primarily explained by the difference in length of cable required for the proposed line route. With the exception of proposal 998, which is uncapped, all the projects proposed binding caps on capital costs. Of the capped projects, proposal 716 contains more notable exclusions, including exclusion of certain cost elements that are typically included in a traditional cost cap.

**Feasibility Review**

Proposal 998 is suboptimal on cost/benefit ratio, considering that current load projections have an additional solution being required within the next ~5 years, construction of a three-terminal facility, as well as constructability concerns raised by the entity based on the area in which these facilities would be constructed.

Proposals 496 and 627 are similar proposals, with the only differentiation in the size of cable used, and run the same route. As there is another cable, of the same size as proposal 627, running (mostly) parallel to this route some amount of Greenfield risk is reduced. As the completed path will be a parallel connection, the same conductor size is recommended to be utilized to prevent operational concerns in the future. Additionally, the entity's eventual plans include the option to upgrade this area of their system from the 230kV it is today to 345kV, which could be accommodated by the operating cable sizes for proposal 627 and the other, existing parallel cable in the corridor.

Proposal 716 is more than double the cost of the highest, other 230kV options. 716 is also approximately double the length of cable in a densely populated area raising significant (relative) constructability risks.

**Risk Assessment Summary**

PJM's risk assessment summary factoring in cost, constructability, and schedule risks are summarized in **Table 4** below.

Table 4. PJM Risk Assessment Summary

| Proposal ID | Cost Estimate Risks | Cost Containment Risks | Schedule Risk | Constructability Risks | Use of Existing ROW & Brownfield | Outage Coordination Risks |
|---|---|---|---|---|---|---|
| 998 | Low | High | Medium | Medium | Medium-High | Low |
| 496 | Low | Low | Medium-High | Medium | Medium-High | Low |
| 627 | Low | Low | Medium-High | Medium | Medium-High | Low |
| 716 | Low | Medium-High | High | High | High | Low |

The above table shows that proposals 496 and 627 pose the least risk, in the selected categories, of the options considered.

## Additional Benefits

In order to ensure that PJM develops more efficient and/or cost effective transmission solutions to identified regional needs, RTEP Process consideration must be given to the additional benefits a proposal window-submitted project may provide beyond those required to solve identified reliability criteria violations. As discussed in Section 1.1 and Section 1.4.2 of PJM manual 14B, Transmission Owner Attachment M-3 needs and projects must be reviewed to determine any overlap with solutions proposed to solve the violations identified as part of opening an RTEP proposal window.

The submitted proposals to provide the following additional benefits as identified by the proposing entity:

- **Proposal 998:** None noted.
- **Proposal 496:** None noted.
- **Proposal 627:** None noted.
- **Proposal 716:** None noted.

## Final Review Conclusions and next steps

All four proposals solve the violations, however Proposal No. 998 and 716 don't provide desired margin for future needs. Proposal 627, however, offers a significant reliability margin enhancement for the overall system. In addition, Proposal No. 716 is not the most cost effective solution.

Proposal No. 496 and 627 are comparable, pose the least cost and constructability risks, and are both cost effective solutions. Proposal No. 627 additionally provides future expandability at a nominal added cost.

Based on PJM's evaluations, Proposal 627 is the most efficient and cost effective solution in Cluster No. 1.

PJM will present this Recommended Solution to stakeholders at the July 9, 2024 TEAC. A final recommendation will be made to the PJM Board at its next meeting scheduled for review and approval.