



Transmission Expansion Advisory Committee (TEAC) Recommendations to the PJM Board

PJM Staff White Paper

PJM Interconnection
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I. Executive Summary

On February 26, 2025, the PJM Board of Managers approved changes to the Regional Transmission Expansion Plan (RTEP), totaling a net increase of \$7,732.59 million for baseline and network projects, to resolve reliability criteria violations and to address changes to existing projects and project cancellations.

Since then, PJM has identified scope and/or cost changes to existing projects that will result in a net increase of \$197.68 million, and cancellation to existing projects will result in a net decrease of \$4.5 million. This yields an overall RTEP net increase of approximately \$193.18 million to resolve baseline criteria violations, for which PJM recommended Board approval. With these changes, RTEP projects will total approximately \$57,996.82 million since the first Board approvals in year 2000.

PJM sought Reliability and Security Committee endorsement and recommended approval, and full Board approval of the RTEP baseline projects summarized in this white paper. On July 30, 2025 the Board approved the addition of RTEP baseline projects as well as other changes to the RTEP as summarized in this paper.

II. Baseline Project Recommendations

A key dimension of PJM's RTEP process is baseline reliability evaluation, which is necessary before subsequent interconnection requests can be analyzed. Baseline analysis identifies violations of reliability criteria and standards, determines the potential to improve the market efficiency and operational performance of the system, and incorporates any public policy requirements. PJM then develops transmission system enhancements to resolve identified violations and reviews them with stakeholders through the Transmission Expansion Advisory Committee (TEAC) and Subregional RTEP committees prior to submitting its recommendation to the Board. Baseline transmission enhancement costs are allocated to PJM responsible customers.

III. Baseline Reliability Projects Summary

A complete listing of all recommended projects and their associated cost allocations is included in Attachment A (allocations to a single zone) and Attachment B (allocations to multiple zones).

IV. Changes to Previously Approved Projects

Scope/Cost Changes

The following scope/cost modifications were recommended:

2024 RTEP Window 1 Project

The competitive regional solution recommended from the 2024 RTEP window 1 has a number of scope modifications as described below:

- Baseline project b4000.14 – Install two new 500 kV dead-end structures near Black Oak substation to interconnect the 502 Junction-Woodside 500 kV transmission line, and to adjust Woodside protection scheme for Black Oak loop-in and remove 502 Junction tie. This is a scope addition to the originally approved baseline project b4000.11 designated to FirstEnergy to expand the Black Oak substation, and

complete the line work necessary to loop the planned 502 Junction-Woodside 500 kV line in and out of Black Oak. NextEra has responsibility to construct the planned 502 Junction-Woodside line segment, and additional scope has been identified as necessary to tie their line segment into Black Oak. As a result, the new b4000.14 project is designated to NextEra to support the Black Oak loop-in. The additional cost for this project is \$3 million.

- Baseline project b4000.110 – Replace 50 kA breaker DL-59 #2CAP with a 63 kA breaker at Doubs 500 kV substation. This project has undergone a cost correction. The original estimated cost incorrectly reflected the future “in-service year” installed cost rather than the current year cost. The previous cost was \$11.5 million, and the corrected cost is \$10.6 million, resulting in a cost decrease of \$0.9 million.
- Baseline project b4000.360 – Replace two switches, a wave trap and leads to upgrade all related substation equipment to 2000A at Altavista 138 kV substation. This is a scope addition to the originally approved baseline project b4000.207 designated to AEP that upgrades the substation equipment at the Leesville 138 kV station to increase the line rating on the Leesville-Altavista 138 kV line. This is a tie line between AEP and Dominion, and Dominion will be designated to complete the work at Altavista substation. The additional cost for this project is \$1 million.
- Baseline project b4000.130 – Replace 40 kA breakers 56142, H1T539, H2T539 with 63 kA breakers at Ox 500 kV substation. This scope will be cancelled as it is already captured by baseline projects b3800.236 (H1T539, H2T539) and b3800.335 (56142) from 2022 RTEP Window 3, which replace the same three breakers, eliminating the need for this project and resulting in a decrease of \$3.05 million.

The total cost change for the 2024 RTEP Window 1 baseline project is a net increase of \$0.05 million.

2022 RTEP Window 3 Project

The competitive regional solution recommended from the 2022 RTEP window 3 has a number of scope modifications as described below:

- Baseline project b3800.54 – Perform final tie-ins and commissioning for Chanceford-Doubs 500 kV line energization, upon completion of all transmission owner segments within PA and MD. This is a scope addition to the originally approved baseline projects b3800.1, b3800.3 and b3800.53 designated to PPL to build the new Chanceford switchyard, and the segment of the new Chanceford-Doubs 500 kV line in PA. A new subproject b3800.54 is being split out of PPL’s existing project representing its scope to tie-in and commission the Chanceford-Doubs 500 kV line upon completion of the overall project. This change is intended to improve project-on-project coordination and accommodate a potentially earlier completion of PPL’s line segment, in advance of other segments of the Chanceford-Doubs line. The additional cost for this project is \$0.2 million.
- Baseline project b3800.360 – Wreck/Rebuild 230 kV line No. 2054 segment Charlottesville-Hollymeade Junction using double-circuit capable 230 kV poles (the second 230 kV circuit will be wired but not have terminal ends). This project has undergone a scope change. The original scope included 500/230 kV poles (500 kV circuits would not have been wired as part of the project), but due to right-of-way considerations

Dominion is proposing to build double-circuit 230/230 kV structure. There is a cost reduction due to the use of 230/230 kV structures instead of 500/230 kV poles. The previous cost was \$70.14 million, and the updated cost is \$46.53 million, resulting in a cost decrease of \$23.61 million.

- Baseline project b3800.304 – Upgrade Charlottesville substation switch 205415 and line leads to 4000A continuous current rating of 230 kV line No. 2054. This project has undergone a scope change. The original upgrade scope location was at Hollymeade substation. However, it was later determined that the Hollymeade substation switch 213549 rating is sufficient to not limit 230 kV line No. 2135. Instead, with the updated scope the Charlottesville substation switch 205415 is being upgraded to not limit 230 kV line No. 2054. There is no cost change for this project.
- Baseline project b3800.300-301 - Wreck/Rebuild 230 kV line No. 2135 Hollymeade Junction-Cash's Corner-Gordonsville using double-circuit capable 230 kV poles (the second 230 kV circuit will be wired but not have terminal ends). This project has undergone a scope change. The original scope included 500/230 kV poles (500 kV circuits would not have been wired as part of the project), but due to right-of-way considerations Dominion is proposing to build double-circuit 230/230 kV structure. The previous cost was \$53.96 million, and the updated cost is \$31.99 million, resulting in a cost decrease of \$21.97 million.
- Baseline project b3800.210 – The Lockridge area project requires additional scope. The additional scope entails removal of the 230 kV line No. 2095 Mars-Shellhorn and 230 kV line No. 2292 Mars-Sojourner in the existing transmission corridor between Sojourner and Mars substations so that they can be rerouted to the south side of Mars substation, adding approximately 2 miles of new conductor. This is to allow for termination of the line No.2413 and 5003 Golden-Mars circuits into Mars substation. The project will cut 230 kV line No. 2095 Mars-Shellhorn into Sojourner substation, creating 230 kV line No. 2427 (Mars-Sojourner) and 230 kV line No. 2095 Sojourner-Shellhorn, and upgrade four 230 kV breakers at Sojourner substation from 63 kA to 80 kA. The new Golden-Mars 230 kV and 500 kV lines will intersect with the existing transmission corridor containing the 230 kV lines Mars-Shellhorn line No. 2095, Mars-Sojourner line No. 2292, Celestial-Mars line No. 2161, and Cabin Run-Mars line No. 2287 just east of the Old Ox/Carters School Road Intersection. Spatial and FAA constraints along these existing lines would prevent installation of the Golden-Mars lines along any of the alternative routes. Cost increases are due to additional 2 miles of transmission line and real estate required to reroute line No. 2095 Mars-Shellhorn and line No. 2292 Mars-Sojourner. The previous cost was the work in this area was \$ 57.95 million, and the updated cost is \$154.95 million, resulting in an increase of \$97 million.

The total cost change for the 2022 RTEP Window 3 baseline project is a net increase of \$51.62 million.

Elmont-Chickahominy 500 kV & 230 kV

The baseline project b3692 (rebuild approximately 27.7 miles of Elmont-Chickahominy 500 kV line) has undergone a scope change. There is a structure change from lattice structures to H-frame structures for the whole span of the transmission line. Transmission right-of-way contains approximately 8 miles of heavy swamp terrain that requires additional materials for access, increasing construction costs. In addition, inflation between 2021 and 2023 time

frames has increased material costs. The previous cost for the work in this area was \$58.15 million, and the updated cost is \$110.66 million, resulting in an increase of \$52.51 million.

There is additional 230 kV scope for the Elmont-Chickahominy 500 kV line work that is also required, including switching to 5/2 H-frame structures and installing approximately 27.7 miles of 230 kV transmission line (but not be terminated) from Elmont to Chickahominy. Approximately 8 miles of new 230 kV conductor will be strung up on the open arms of the structures of 230 kV line No. 2075 that runs parallel to 500 kV line No. 55. The general area within proximity of the line No. 557 Elmont-Chickahominy rebuild has received approximately 15 delivery point requests, mainly data centers, since proposing this project during the 2021 RTEP Window 1. Since line No. 2075 runs parallel to line No. 557 in the same right-of-way corridor, the 8-mile portion that runs through the heavy swamps will be strung up with new 230 kV conductor on the open arms of the structures for line No. 2075 for future use. This will minimize future environmental impacts and construction costs due to the challenges of the swampy terrain in this right-of-way. The additional cost for this scope is \$74.5 million.

The total cost change for this project is a net increase of \$127.01 million.

New Jersey Offshore Wind Project

The baseline project b3737.50 [bring Peach Bottom-Delta York 500 kV (5034) line “in and out” of Bramah (North Delta) by constructing a new Peach Bottom-Bramah-Delta York 500 kV line] has undergone a cost change. The project will bring the Peach Bottom-Delta York 500 ‘5034’ kV line “in and out” of Bramah substation by partially demolishing the 5034 line to construct a new Peach Bottom-Bramah-Delta York 500 kV line, with 0.87 miles of cut-in and cut-out lines. While the original project and cost was proposed by Transource as part of NJBPU SAA 1.0, the project was designated to PECO. The revised cost reflects PECO's estimation of the cost to cut-in the line to Bramah substation. The previous cost was \$1.56 million, and the updated cost is \$12 million, resulting in a cost increase of \$10.44 million.

Additionally, baseline project b3737.52 (replace one 63 kA circuit breaker “B4” at Conastone 230 kV with 80 kA) is no longer required. As of the 2030 RTEP, fault duties no longer exceed the breaker capabilities due to modifications to the NJ SAA project and the removal of Transource 9A from the PJM cases. This scope reduction results in a cost decrease of \$1.3 million.

The total cost change for this project is a net increase of \$9.14 million.

Naamans-Darley-Silverside 69 kV

The baseline project b3143 (Naamans-Darley-Silverside 69 kV reconductor) has undergone a scope change. Based on field evaluations of these facilities, in order to achieve higher ratings based on DPL's design standard, a scope change to rebuild, rather than reconductor, is required. The previous cost was \$5.5 million and the updated cost is \$23.02 million, resulting in an increase of \$17.52 million.

Prestonsburg-Thelma 46 kV

The baseline project b3361 (Prestonsburg-Thelma 46 kV rebuild) has undergone a scope change. The revised scope includes rebuilding Prestonsburg-Thelma 46kV circuit connecting though Kenwood station, approximately 12.7 miles

and retiring the Jenny Wiley substation and the Van Lear substation. The project is using new right-of-way that is closer to Kenwood station and will provide looped Transmission service to customers served from Kenwood station. Labor and material costs are increasing for Transmission line construction. Also contributing to the overall cost increase of the project is the difficult terrain in eastern Kentucky, requiring approximately 2 miles of access road for every 1 mile of line being built. The previous cost was \$33.01 million, and the updated cost is \$63.6 million, resulting in a cost increase of \$30.59 million.

Farragut-Hudson Area

The baseline project b2436.90 (Relocate Farragut-Hudson "B" and "C" 345 kV circuits to Marion 345 kV) in PSEG zone is a project that has remained on hold for several years and is no longer required. The "B" and "C" lines have been out of service since 2018. These circuits served as part of a firm transmission service agreement which is no longer in effect. This scope reduction results in a cost decrease of \$38.25 million.

Silver Run-Cedar Creek 230 kV

The baseline project b3793 (Replace three jumpers and one air disconnect switch at Silver Run 230 kV substation) in DPL zone has a Designated Entity assignment correction. This project was incorrectly assigned to Exelon as the Designated Entity; therefore, PJM is canceling the project ID of b3793.3 and assigning a new ID as b3793.4 to have the Designated Entity corrected to LS Power. Due to this being an administrative reassignment, there is no cost change to this project.

Cancellations

The following cancellations were recommended:

Baseline Project b3211

The baseline b3211 (partial rebuild of Loudon-Morrisville 500 kV End-of-Life project) in Dominion zone is no longer required, as the baseline project b3800.312 from 2022 Window 3 will rebuild the entire portion of line No. 569 Loudoun-Morrisville, eliminating the need for this project. This cancellation yields a decrease of \$4.5 million.

V. Review by the Transmission Expansion Advisory Committee (TEAC)

Project needs and recommended solutions as discussed in this report were reviewed with stakeholders during 2025, most recently at the July 8, 2025, TEAC meeting. Written comments were requested to be submitted to PJM to communicate any concerns with project recommendations.

VI. Cost Allocation

Cost allocations for recommended projects are shown in Attachment A (for allocation to a single zone) and Attachment B (for allocation to multiple zones).

Cost allocations are calculated in accordance with Schedule 12 of the Open Access Transmission Tariff. Baseline reliability project allocations are calculated using a distribution factor methodology that allocates cost to the load zones

that contribute to the loading on the new facility. The allocations will be filed at FERC 30 days following approval by the Board.

VII. Board Approval

The PJM Reliability and Security Committee is requested to endorse the additions and changes to the RTEP proposed in this white paper and recommended to the full Board for approval the new projects and changes to the existing RTEP projects as detailed in this white paper. On July 30, 2025 the Board approved the addition of RTEP baseline projects as well as other changes to the RTEP as summarized in this paper.

Attachment A – Reliability Project Single-Zone Allocations

Upgrade ID	Description	Cost Estimate (\$M)	TO	Cost Responsibility	Required IS Date
b3692.2	Switch to 5/2 H-frame structures and install approximately 27.7 miles of 230 kV transmission line (but not be terminated) from Elmont to Chickahominy. String up approximately 8 miles of new 230 kV conductor on the open arms of the structures of 230 kV Line No. 2075 that runs parallel to 500 kV line No. 557.	\$74.50	Dominion	Dominion (100.00%)	6/30/2028
b3800.54	Perform final tie-ins and commissioning for Chanceford-Doubs 500 kV line energization, upon completion of all transmission owner segments within PA & MD.	\$0.20	PPL	PPL (100.00%)	6/1/2027
b4000.14	Install two new 500 kV dead-end structures near Black Oak substation to interconnect the 502 Junction-Woodside 500 kV transmission line. Adjust Woodside protection scheme for Black Oak loop-in and remove 502 Junction tie. (NEET Scope)	\$3.00	NEET	APS (100.00%)	6/1/2029
b4000.360	Replace two switches, a wave trap and leads to upgrade all related substation equipment to 2000A at Altavista substation.	\$1.00	Dominion	Dominion (100.00%)	6/1/2029

Attachment B – Reliability Project Multi-Zone Allocations

None