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

PJM Staff White Paper

PJM Interconnection
February 2026

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I. Executive Summary

On November 18, 2025, the PJM Board of Managers approved changes to the Regional Transmission Expansion Plan (RTEP), totaling a net increase of $526 million for baseline projects to resolve baseline reliability criteria violations and address changes to existing projects.

Since then, PJM has identified new baseline reliability criteria violations and the transmission system enhancements needed to solve them, at an estimated cost of $11,840.24 million. Scope and cost changes to existing projects will result in a net increase of $401.01 million. This yields an overall RTEP net increase of approximately $12,241.25 million to resolve baseline criteria violations, for which PJM recommended Board approval. With these changes, RTEP projects will total approximately $70,764.07 million since the first Board approvals in 2000.

PJM sought the Reliability and Security Committee consideration and full Board approval of the RTEP baseline projects summarized in this white paper. On February 12, 2026, 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 system violations to 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 solve 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

PJM recommended 122 reliability projects with estimated costs totaling $11,816.58 million. A complete listing of all recommended reliability projects and their associated cost allocations is included in Attachment A (allocations to a single zone) and Attachment B (allocations to multiple zones). The recommended reliability projects include both noncompetitive solutions and competitive solutions stemming from the 2025 RTEP Window 1.

Detailed descriptions of the 2025 RTEP Window 1 solutions that PJM recommended to the Board are included in the 2025 RTEP Window 1 Reliability Analysis Report (PDF) and the 2025 RTEP Window 1 Constructability & Financial Analysis Report (PDF).

IV. Baseline Market Efficiency Projects Summary

PJM recommended two market efficiency projects with estimated costs totaling $23.66 million. A summary of market efficiency projects with estimated costs equal to or greater than $10 million is provided below. PJM also recommended one project with an estimated cost of $1.81 million in the AEP Transmission Zone. The recommended market efficiency projects were identified as part of the 2024/2025 Market Efficiency Window 1 competitive proposal process.

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

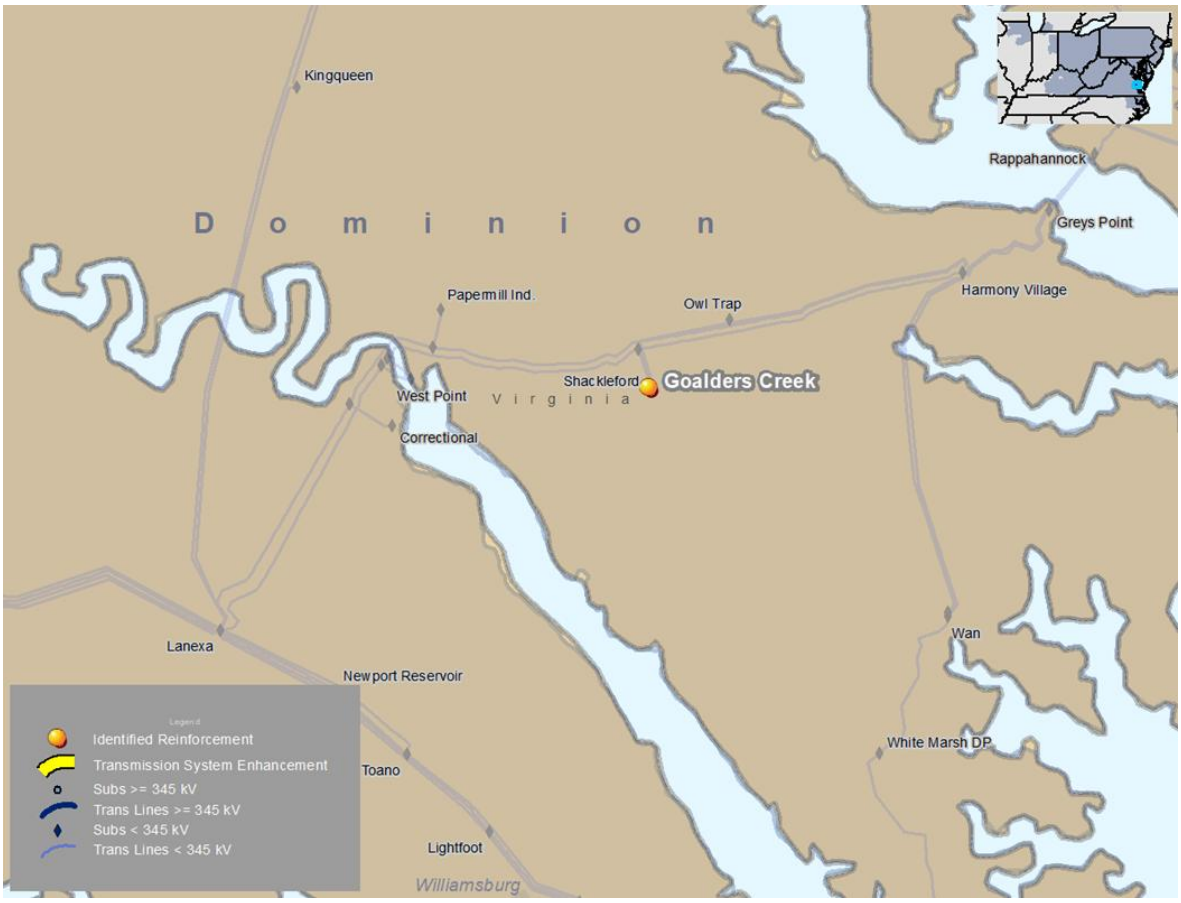
A. Dominion Transmission Zone

Baseline project b4034 – Goalders Creek 230/115 kV Switching Station: $21.85 Million

Baseline Project b4034: Goalders Creek 230/115 kV Switching Station

In the 2025 market efficiency economic models, used to simulate the 2029 and 2032 study years, there is market efficiency-eligible congestion on the West Point-Lanexa 115 kV line.

Figure 1. b4034: Goalders Creek 230/115 kV Switching Station



The recommended solution, solicited through the 2024/2025 Market Efficiency Window 1 competitive proposal process, is to construct a 230/115 kV switching station at the Goalders Creek 115 kV substation and install a 299 MVA, 230/115 kV transformer. The existing line No. 2016 from Lanexa to Harmony Village will be cut into the new switching station. A three-breaker ring bus arrangement is to be installed on the 230 kV side. Relays at Harmony Village and Lanexa are to be reset.

The project has a benefit-to-cost (B:C) ratio of 2.71 and alleviates 100% of the posted congestion driver. The project has a required in-service date of January 2029 and a projected in-service date of January 2029. The estimated cost for this project is $21.85 million. The local transmission owner, Dominion, will be designated to complete this work.

V. Transmission Owner Criteria Projects

Of the $11,840.24 million of new recommended baseline transmission system enhancements, approximately $458.52 million, is driven by transmission owner planning criteria, which makes up approximately 4% of the new project cost estimates.

VI. Changes to Previously Approved Projects

B. Scope/Cost Changes

The following scope/cost modifications were recommended:

502 Junction-Woodside 500 kV Line:

The cost estimate for baseline project b3800.102, .106–.110, .113, .115 and .117 has increased by a total of $403.91 million. NextEra's updated cost estimate for the MidAtlantic Resiliency Link (MARL) Project is informed by detailed 30% design and engineering analyses, which identified necessary changes to project components compared to original planning-level analysis. Vendor quotes received through competitive bidding for long-lead-time equipment have been higher than budgetary quotes received during the conceptual design phase. Market analyses were performed to calculate fair market value for land rights and adjusted to incentivize voluntary transactions. NextEra also estimates an additional $115.4 million of contingency to cover risk-based costs, including potential route changes and market uncertainty. These cost increases do not affect NextEra's cost-containment commitment to original project cost caps specified in the NextEra MARL Project Designated Entity Agreement.

Mars-Prentice Drive 230 kV:

The baseline project b3800.210–.211 requires a change in scope. The 230 kV Golden to Mars line was originally cut and terminated into Lockridge substation. Instead, Dominion will terminate the 230 kV Golden to Mars line into nearby Prentice Drive substation and remove the two 230 kV, 80 kA circuit breakers and associated terminal equipment from Lockridge substation and install at Prentice Drive substation. The reason for this scope change is related to the following:

- Requires less right-of-way and reduces transmission line material costs
- Avoids heavily constrained areas near Prentice with underground utilities and eliminates crossings of Lockridge Road and a distribution line
- Prentice allows alternating outages, unlike Lockridge, which would require a full substation outage or temporary configurations.

For these reasons, the modified scope of work was recommended. The cost estimate for this project has decreased from $211.88 million to $203.38 million, resulting in a net decrease of $8.3 million.

Yeat-Vint Hill 500 kV Uprate:

The scope of b3800.313 is being changed to use a different conductor. The rebuild has not yet started, so Dominion can order the higher rated conductor. The cost for b3800.313 remains the same.

Kellam-Cheriton 69 kV:

The cost for project b3134 is being brought forward for a slight scope change and cost increase. The reason for the increase is due to the significantly higher material and construction costs as compared to pre-COVID estimates. Further design changes were required to minimize community impact, meet Avian Power Line Interaction Committee (APLIC) guidelines and stay within the existing right-of-way easements. Specifically, taller, more robust, un-guyed monopole structures with deeper foundations, as well as substation scope expansion, including line retermination and protection and control upgrades, are required.

For these reasons, the modified scope of work was recommended. The cost estimate for this project has increased from $22 million to $43.4 million, resulting in a net increase of $21.4 million.

Richmond-Waneeta 230 kV:

PJM Board-approved Project b3907.2 (2024 Window 1, Proposal 12) to rebuild the entire Richmond to Waneeta 230 kV line, including both the 0.95-mile underground portion and the 2.23-mile overhead portion, supersedes b3737.23 with higher ratings. Project b3907.2 has a total cost of $29.4 million and a projected in-service date of June 1, 2029. The NJ BPU concurs with the NJ SAA Project b3737.23 cancellation.

The cost estimate for this project has decreased from $1,210.93 million to $1,194.93 million, resulting in a net decrease of $16 million.

All of the scope and cost changes noted above result in a net RTEP cost increase of $401.01 million.

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

The project needs, recommended solutions, and scope and cost changes discussed in this report were reviewed with stakeholders during 2025 and 2026, most recently at the January 6, 2026, TEAC meeting. In addition to receiving verbal feedback and comments during the relevant TEAC meetings, PJM also requested that written comments be submitted to PJM to communicate any concerns with project recommendations.

PJM received numerous written and verbal comments and feedback, primarily from residents in Virginia, requesting that PJM defer its decision on the proposed HVDC project in Virginia until capacity associated with previously approved RTEP baseline upgrades in Virginia get utilized. PJM also received supportive feedback from stakeholders including local counties, residents and technology developers in support of the same project, citing lower land, social and overall impacts. PJM will be monitoring the development of load and generation to ensure the needed developments are progressing in a timely manner. PJM also clarified that sitting, routing and regulatory processes, as well as construction, take a long time, and PJM needs the plan to be ready and advanced for the forecasted conditions proactively rather than bringing needed development late, which introduces impediments to development and reliability risks to stakeholders.

In addition, PJM received verbal feedback from stakeholders in Pennsylvania related to the selected 765 kV transmission line development throughout the state between Kammer and the Juniata area. One transmission owner expressed concerns that the 2025 RTEP competitive window should have been a 120-day window instead of a 60-day window. Other stakeholders offered ideas related to potential future generation (along the proposed 765 kV line route) and also suggested opening a dedicated window directed toward enabling import capability into Pennsylvania and the MAAC area in general.

PJM staff clarified that as it relates to the window length, PJM followed the requirements of the Operating Agreement in opening a 60-day window. Moreover, PJM did not receive any requests for extending the window time frame beyond the posted 60 days, but would have considered such request if received prior to the window closing. In addition, PJM clarified that transmission planning in PJM follows an annual update process, and PJM would adjust its plans as future factors materialize to minimize the overall impact of selected projects while maintaining system reliability through the more efficient or cost-effective solutions.

VIII. 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. The cost-allocation assignments for the projects described in this white paper will be filed at FERC no later than 30 days following approval by the Board.

IX. Board Approval

The PJM Reliability and Security Committee is requested to endorse the additions and changes to the RTEP that are proposed in this white paper and to recommend to the full Board for approval the new projects and changes to the existing RTEP projects as detailed in this white paper. On February 12, 2026, 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)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b3938.1	2024W1 DVP P5 Solution No. 40 – Replace and upgrade relay and associated equipment at DVP substation, addressing FG No. 2024-P5-DVP16.	$0.19	Dominion	Dominion (100.00%)	6/1/2029
b3938.2	2024W1 DVP P5 Solution No. 41 – Replace and upgrade relay and associated equipment at DVP substation, addressing FG No. 2024-P5-DVP23.	$0.11	Dominion	Dominion (100.00%)	6/1/2029
b3938.3	2024W1 DVP P5 Solution No. 42 – Replace and upgrade relay and associated equipment at DVP substation, addressing FG No. 2024-P5-DVP14.	$0.18	Dominion	Dominion (100.00%)	6/1/2029
b3938.6	2024W1 DVP P5 Solution No. 45 – Replace and upgrade relay and associated equipment at DVP substation, addressing FG No. 2024-P5-DVP03.	$0.20	Dominion	Dominion (100.00%)	6/1/2029
b3940.1	The 345 kV ring bus at Woodsdale substation will be reconfigured into a 345 kV breaker-and-half yard to improve substation reliability. Additionally, all 2000A equipment at Woodsdale substation will be upgraded to 3000A to increase substation capacity. Currently two DEOK supplemental projects that are planned at Woodsdale substation: s3447.1 & s3601.1. DEOK will convert all of s3447.1 & parts of s3601.1 to address these reliability violations.	$36.82	DEOK	DEOK (100.00%)	6/1/2030
b3942.1	Replace two CFD relays with two SEL-487B bus relays. Install two new SEL-451 relays from breaker control of circuit breaker 785 and circuit breaker 875 respectively. Wiring modifications to existing 220-53 line relays to all dual overlapping relays on circuit breaker 785 for bus protection and line protection.	$0.69	PECO	PECO (100.00%)	6/1/2030
b3943.1	Install a new 345/138 kV transformer TR 84, and associated equipment at State line substation. Install two 345 kV circuit breakers, one 138 kV circuit breaker and associated equipment; also replace the 138 kV BT 732 circuit breaker at State line substation.	$20.81	ComEd	ComEd (100.00%)	12/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b3944.1	Rebuild the McGuffey to Locust 69 kV line (~1.35 miles) with 954 ACSR rail conductor and OPGW. The 54 wood poles will be replaced with light duty, steel poles. The rebuild will take place in the existing right-of-way, and the distribution underbuilds will also be restored. Conductor drops going into McGuffey and Locust substations will be replaced with 954 AAC conductor.	$5.32	DEOK	DEOK (100.00%)	6/1/2030
b3945.1	Adjust Mullens 138 kV cap bank Vhi setting to 1.04. Adjust protection settings as needed at the station.	$0.10	AEP	AEP (100.00%)	12/1/2030
b3946.1	Adjust existing Jarrett 138/46 kV transformer tap to 1:1 to boost voltages on the sub-transmission network.	$0.10	AEP	AEP (100.00%)	4/15/2030
b3946.2	Adjust the existing Hartland 46 kV cap bank Vhi setting to 1.04.	$0.10	AEP	AEP (100.00%)	4/15/2030
b3947.1	Remove cans on existing Baileysville 46 kV cap bank to reduce it to 7.2 MVAR.	$0.10	AEP	AEP (100.00%)	12/1/2030
b3948.1	Replace the existing 9.6 MVAR 69 kV capacitor bank at Johns Creek station with a 17.2 MVAR capacitor bank. Circuit switcher "AA" will also be replaced.	$1.48	AEP	AEP (100.00%)	4/15/2030
b3949.1	Change XF tap settings at Chauncey station to boost the sub-transmission voltage.	$0.10	AEP	AEP (100.00%)	4/15/2030
b3949.2	Change the XF tap settings at Huff Creek station to boost the sub-transmission voltage.	$0.10	AEP	AEP (100.00%)	4/15/2030
b3950.1	Adjust existing Tazewell 138/34.5 kV transformer tap to 1:1 to help mitigate voltages on the 34.5 kV bus.	$0.10	AEP	AEP (100.00%)	6/1/2030
b3951.1	To solve the voltage violations, a 69 kV circuit switcher and an 11.5 MVAR capacitor bank will be installed on the 69 kV bus at Falcon station. Falcon station will need to be expanded to fit the capacitor bank.	$3.35	AEP	AEP (100.00%)	4/15/2030
b3952.1	Replace 138 kV, 3000A circuit breakers H and H1 with 4000A circuit breakers.	$1.51	AEP	AEP (100.00%)	6/1/2030
b3953.1	Replace 138 kV circuit switcher XT3 with a higher fault current capable circuit breaker at New Carlisle.	$1.02	AEP	AEP (100.00%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b3954.1	At Thomas Road, replace 69 kV circuit switcher XT1 with a 40 kA circuit switcher.	$0.71	AEP	AEP (100.00%)	6/1/2030
b3955.1	Build ~0.8-mile 138 kV double-circuit extension from Roberts-Wilson 138 kV line into the Milepost 138 kV substation.	$8.33	AEP	AEP (100.00%)	6/1/2030
b3955.2	Install additional 2-138 kV circuit breakers at Milepost substation to allow for the Robert-Wilson 138 kV line to come into the Milepost substation. DICM will need an expansion for additional relaying panels.	$3.84	AEP	AEP (100.00%)	6/1/2030
b3956.1	Upgrade 336.4 ACSR 26/7 station conductor at Galloway 69 kV.	$0.18	AEP	AEP (100.00%)	6/1/2030
b3957.1	At Haviland substation, replace TR No. 4 with 138/69/12 kV 130 MVA bank, along with associated equipment such as the switch (600A), Sub cond 795 AAC 37 Str., and Sub cond 300 MCM CU bus equipment.	$5.87	AEP	AEP (100.00%)	12/1/2030
b3958.1	Perform sag study mitigations on ~1.4 miles of line from str. 8 to str 21 to bring conductor to full 142 MVA SE rating.	$0.36	AEP	AEP (100.00%)	6/1/2030
b3959.1	The line section overloading is roughly ~0.8 miles consisting of 336 ACSR 30/7 Oriole from structure 44 to Lick station. Reconductor limiting line conductor on the Lick-Ironman 69 kV circuit to match the rest of the line.	$1.10	AEP	AEP (100.00%)	6/1/2030
b3960.1	Replace 138 kV, 40 kA circuit breaker DD with higher fault-current-capable counterpart (63 kA). The new circuit breaker will have a larger footprint, which will require the shifting of nearby equipment.	$0.77	AEP	AEP (100.00%)	6/1/2030
b3961.1	Replace station terminal equipment: South Side Lima 34.5 kV replace 4/0 AAC, 7-Str. Replace 34.5 kV CB-L jumpers and 34.5 kV Sterling line riser.	$0.08	AEP	AEP (100.00%)	12/1/2030
b3962.1	Replace 138 kV circuit breakers CB-H014F2 and CB-H014F5 with 63 kA fault-current-capable breakers.	$0.85	AEP	AEP (100.00%)	6/1/2030
b3963.1	Replace 138 kV circuit breakers 102, 103 and circuit switcher XT4 with 63 kA fault-current-capable breakers.	$2.89	AEP	AEP (100.00%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b3964.1	The 138 kV circuit switcher XT3 will be replaced with a 63 kA breaker.	$0.94	AEP	AEP (100.00%)	6/1/2030
b3965.1	Replace 138 kV circuit switchers XT1, XT3, XT2 and XT4 with 63 kA fault-current-capable counterpart.	$4.60	AEP	AEP (100.00%)	6/1/2030
b3966.1	Replace 138 kV circuit breakers A, AA, D, E, F, XT1 and XT2 with 63 kA fault-current-capable counterpart. Reroute one line entrance in the station to make more room for the larger breakers.	$3.56	AEP	AEP (100.00%)	9/30/2030
b3967.1	Replace the existing Cambridge 34.5 kV circuit breaker F with a 40 kA, 3000A unit.	$0.80	AEP	AEP (100.00%)	6/1/2030
b3968.1	Replace North Newark TR#1 with a 90 MVA bank. DICM expansion will be required. Replace motor operators on high-side switch "Z." Install two 138 kV disconnects on existing 138 kV lattice box bay. Install two 69 kV disconnects on existing 69 kV H-frame structure.	$6.33	AEP	AEP (100.00%)	12/1/2030
b3969.1	Replace Findlay Center transformer No. 1 with a 138/69/34.5 90 MVA Unit. Replace the TR1 LS disconnect switch.	$3.94	AEP	AEP (100.00%)	6/1/2030
b3970.1	Rebuild line: ~2.87 miles Kenton-South Kenton 69 kV.	$13.19	AEP	AEP (100.00%)	6/1/2030
b3971.1	At Haviland, reconductor bus No. 1 Sub cond 500 MCM CU 37 Str toward Haviland bus No. 2 and reconductor Haviland bus No. 2 500 KCM CU, 37-Str. and 795 KCM AAC, 37-Str. toward Timber SW 138 kV.	$1.47	AEP	AEP (100.00%)	12/1/2030
b3972.1	Perform a ratings study and clearance mitigation on the ~5.55-mile section of sag derated 556.5 ACSR 26/7 DOVE conductor (East Lima-STR 28) between the East Lima-Haviland 138 kV circuit on the East Lima-West Lima 138 kV line.	$6.80	AEP	AEP (100.00%)	4/15/2030
b3974.1	Replace circuit breaker R with a new 69 kV, 40 kA circuit breaker.	$0.85	AEP	AEP (100.00%)	6/1/2030
b3975.1	Install a new 138/69 kV transformer at Catawba station with a high-side circuit switcher and a low-side circuit breaker.	$7.77	AEP	AEP (100.00%)	12/1/2030
b3975.2	Upgrade one 69 kV breaker at Huntington Court.	$1.00	AEP	AEP (100.00%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b3976.1	At Bedington: • Install foundation, conduit and grounding for new equipment. • Install three 138 kV surge arresters. • Replace one existing 138 kV CVT with three 138 kV CVTs. • Replace one lot of limiting conductor. • Install one lot of cables and grounding. • Replace one existing 138 kV Eagle line terminal relay panel and breaker failure, with one standard line relaying panel consisting of one SEL-421, one SEL-411L and one SEL-451.	$1.96	APS	APS (100.00%)	6/1/2030
b3977.1	At Meadow Brook: • Install conduit and grounding for new equipment. • Install one lot of cables and grounding for new equipment. • Replace one 138 kV wave trap on the West Winchester line terminal.	$0.36	APS	APS (100.00%)	6/1/2030
b3978.1	• Reconductor one span of transmission line outside Ottawa substation. • Reconductor one span of transmission line outside Lakeview substation.	$1.09	ATSI	ATSI (100.00%)	6/1/2030
b3978.2	Replace limiting terminal equipment at Lakeview substation. • Two thermal relays • Two 138 kV disconnect switches • Limiting substation conductor	$0.32	ATSI	ATSI (100.00%)	6/1/2030
b3979.1	Abbe-Johnson No.1 69 kV line (Johnson-Elyria Water P.C.): • Reconductor one span of transmission line between Johnson substation and Elyria Water P.C. • Replace one 69 kV disconnect switch. • Upgrade one thermal relay. • Modify Elyria Loop Tap configuration. • Install one 69 kV disconnect switch.	$2.07	ATSI	ATSI (100.00%)	6/1/2030
b3979.2	Abbe-Johnson No.1 69 kV line (Elyria Water P.C.-Spring Valley): • Replace one 69 kV disconnect switch.	$0.71	ATSI	ATSI (100.00%)	6/1/2030
b3979.3	Abbe-Johnson No.1 69 kV line (Spring Valley-Lorain College):	$0.44	ATSI	ATSI (100.00%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
	• Replace two 69 kV disconnect switches.				
b3980.1	Bellevue-Groton 69 kV line: • Rebuild 4 miles of the Bellevue-Groton 69 kV line.	$9.53	ATSI	ATSI (100.00%)	6/1/2030
b3980.2	Bellevue substation: • Replace three 69 kV disconnect switches. • Revise relay settings. • Replace limiting substation conductor.	$0.47	ATSI	ATSI (100.00%)	6/1/2030
b3980.3	Groton substation: • Revise relay settings	$0.10	ATSI	ATSI (100.00%)	6/1/2030
b3981.1	Install a new 345/138 kV TR83 at Elk Grove and associated equipment. Install three 138 kV and one 345 kV circuited breakers and associated equipment at Elk Grove substation.	$28.96	ComEd	ComEd (100.00%)	6/1/2030
b3982.1	Disconnect and remove the 34 kV tertiary cap bank on the Cherry Valley 345/138 kV transformer TR 82 and install a 138 kV bus 3 cap bank and associated equipment at Cherry Valley substation.	$7.73	ComEd	ComEd (100.00%)	6/1/2030
b3983.2	Belmont substation – Replace B-8 138 kV circuit breaker with a 63 kA, 3000A breaker. This will not affect the line ratings of the Belmont-Trissler 138 kV 604 line, which is currently rated at 176/229 SN/SE or the Belmont-Edgelawn 138 kV line, which is currently rated at 292/314 SN/SE.	$0.96	APS	APS (100.00%)	6/1/2030
b3984.1	Replace 69 kV circuit breakers • 501-B-24 • 501-B-272 • 501-B-274	$1.53	ATSI	ATSI (100.00%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b3985.2	Eastlake substation – Replace the following breakers with 80 kA, 3000A circuit breakers. This will not affect the existing line ratings at the station. • 46-B-18 • 46-B-21 • 46-B-24 • 46-B-35 • 46-B-36 • 46-B-32 • 46-B-33 • 46-B-27 • 46-B(795) • 46-B-45 • 46-B-54 • 46-B-97	$11.48	ATSI	ATSI (100.00%)	6/1/2030
b3985.3	Hoytdale substation – Replace 83-B-14, 83-B-18, 83-B-22 breakers with 63 kA, 3000A circuit breakers. This will not affect the Hoytdale-New Castle line ratings, which are currently rated at 435/500 SN/SE for circuit Z104 and 329/413 SN/SE for circuit Z110.	$2.87	ATSI	ATSI (100.00%)	6/1/2030
b3985.4	Johnson substation – Replace 451-B-163 breaker with a 63 kA, 3000A circuit breaker.	$0.96	ATSI	ATSI (100.00%)	6/1/2030
b3986.1	Replace Windsor 34.5 kV Breakers: • KQ • Q143 • 324-B-25 (J136-1) • 324-B-22 (J2) • 324-B-31 (MG) • 324-B-34 (K137-1) • 324-B-19 (BK2) • 324-B-28 (M65-1) • 324-B-16 (G215-1) • BK4 • 324-B-7 (H4) • 324-B-8 (H60) • 324-B-54 (BK5_BBUS) • 324-B-51 (BK5_ABUS)	$8.36	JCPL	JCPL (100.00%)	6/1/2029

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b3987.1	Replace East Flemington 34.5 kV circuit breakers C731, V724, A729, TC, H736, AV, YH and Y727 with 40 kA, 3000A breakers.	$3.46	JCPL	JCPL (100.00%)	6/1/2030
b4001.1	Construct the McCanns Rd. 138 kV switching station and interconnect the existing Redbud-West Winchester 138 kV line and Bartonville-Stephenson 138 kV line.	$18.83	POTED	APS (100.00%)	6/1/2030
b4001.2	Reconductor new Redbud McCanns Rd. 138 kV line with 795 kcmil 45/7 ACSS for 0.5 miles from Redbud 138 kV substation to Str. 175 of the existing Redbud-West Winchester 138 kV line at approximate coordinates (39.217478, -78.128621).	$5.04	POTED	APS (100.00%)	6/1/2030
b4002.1	• Rebuild approximately 1.9 miles of 115 kV line with larger conductor. • Install OPGW for the static. • Install one new SCADA-controlled 2000A disconnect with whips.	$9.02	POTED	APS (100.00%)	6/1/2029
b4002.2	Adjust the relay settings at Penn Mar, Garrett and Deep Creek substations to accommodate the new ratings and impedance changes associates with the Garrett-Garrett tap 115 kV line rebuild.	$0.13	POTED	PENELEC (100.00%)	6/1/2029
b4003.1	Rebuild the College Corner (AEP)-Collinsville (DEOK) 138 kV circuit from the OH/IN state line (tower 10P-X1-129) to Collinsville substation. AEP owns approximately 0.1 miles of the line from College Corner substation to the OH/IN state line. DEOK owns the remaining 11.90 miles from the state line to Collinsville substation. The entire 11.90 mile section that DEOK owns will be rebuilt with 954ACSS/TW conductor (@ 200C) and new double-circuit structures. The College Corner (AEP)-Trenton (DEOK) line is on the other side of the double-circuit structure and will also be rebuilt. DEOK will be doing a route survey to see if easement updates and/or additional structures are required.	$45.11	DEOK	DEOK (100.00%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4003.2	Rebuild parts of the College Corner (AEP)-Trenton (DEOK) 138 kV circuit that shares a common structure with the College Corner (AEP)-Collinsville (DEOK) circuit from the OH/IN state line (Tower 10P-X1-129) to Collinsville substation. AEP owns approximately 0.1 miles of the line from College Corner substation to the OH/IN state line. DEOK owns the remaining 24.19 miles from the state line to Trenton substation. Only the 11.90-mile DEOK section that shares a common structure with College Corner (AEP)-Collinsville (DEOK) will be rebuilt with 954ACSS/TW conductor (@ 200C) and new double-circuit structures. The remaining sections from Collinsville-Trenton will be left untouched. DEOK will be doing a route survey to see if easement updates and/or additional structures are required.	$13.24	DEOK	Dayton (100.00%)	6/1/2030
b4003.3	Relay Settings at College Corner station needed due to Duke rebuilding their College Corner-Collinsville 138 kV line section.	$0.06	AEP	DEOK (100.00%)	6/1/2030
b4003.4	Update relay settings for the College Corner-Collinsville line at DEOK's Collinsville substation.	$0.03	DEOK	DEOK (100.00%)	6/1/2030
b4003.5	Update relay settings for the College Corner-Trenton line at DEOK's Trenton substation.	$0.03	DEOK	Dayton (100.00%)	6/1/2030
b4004.1	Upgrade existing 1590 ACSR stranded bus on facility.	$0.03	DPL	DPL (100.00%)	6/1/2030
b4006.1	Install 765/345 kV TR 91 and associated 765 kV and 345 kV circuit breakers at Wilton Center.	$45.81	ComEd	ComEd (100.00%)	12/1/2030
b4007.1	2024W1 P5: Install open-circuit battery monitoring: Addressing FG No. 2024-P5-BGE03	$0.02	BGE	BGE (100.00%)	6/1/2029
b4007.2	2024W1 P5: Install open-circuit battery monitoring: Addressing FG No. 2024-P5-BGE07	$0.06	BGE	BGE (100.00%)	6/1/2029
b4007.3	2024W1 P5: Install open-circuit battery monitoring: Addressing FG No. 2024-P5-BGE11	$0.04	BGE	BGE (100.00%)	6/1/2029
b4007.4	2024W1 P5: Install trip coil monitors: Addressing FG No. 2024-P5-BGE14	$0.10	BGE	BGE (100.00%)	6/1/2029
b4007.5	2024W1 P5: Install open-circuit battery monitoring: Addressing FG No. 2024-P5-BGE05	$0.02	BGE	BGE (100.00%)	6/1/2029

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4007.6	2024W1 P5: Install open-circuit battery monitoring: Addressing FG No. 2024-P5-BGE04	$0.08	BGE	BGE (100.00%)	6/1/2029
b4007.7	2024W1 P5: Install open-circuit battery monitoring: Addressing FG No. 2024-P5-BGE13	$0.02	BGE	BGE (100.00%)	6/1/2029
b4008.1	2024W1 P5: Install open-battery monitoring and modify relay wiring: Addressing FG No. 2024-P5DYN-PN01	$0.97	PENELEC	PENELEC (100.00%)	6/1/2029
b4009.1	2024W1 P5: Modify relay wiring: Addressing FG No. 2024-P5-PN03	$0.33	PENELEC	PENELEC (100.00%)	6/1/2029
b4010.1	2024W1 P5: Install open-battery monitoring and modify relay wiring: Addressing FG No. 2024-P5DYN-PN05	$0.97	PENELEC	PENELEC (100.00%)	6/1/2029
b4011.1	Install new 115 kV capacitor; replace limiting conductors, line relaying and disconnect switches at North Hanover on the Jackson terminal.	$3.56	ME	ME (100.00%)	6/1/2030
b4011.2	Replace limiting conductors, line relaying, circuit breaker and two 115 kV disconnect switches at Jackson on the North Hanover terminal.	$0.57	ME	ME (100.00%)	6/1/2030
b4011.3	Rebuild the Jackson-North Hanover 115 kV 968 line as a double circuit, approximately 13.2 miles, using 954 ACSR 45/7. The line will be energized in a six-wire configuration.	$57.65	ME	ME (100.00%)	6/1/2030
b4012.1	Belleville-Center Union 46 kV line – Replace structures and use 795 ACSR 26/7 conductor on spans D-356 through D-360.	$2.72	PENELEC	PENELEC (100.00%)	6/1/2030
b4013.1	Install a 10.8 MVAR capacitor at Colts Neck 34.5 kV substation.	$2.69	JCPL	JCPL (100.00%)	6/1/2030
b4014.1	Install a 5.4 MVAR capacitor at Sussex 34.5kV substation.	$2.28	JCPL	JCPL (100.00%)	6/1/2030
b4015.1	At Long Branch substation, replace the 34.5 kV line terminal disconnect switch	$0.53	JCPL	JCPL (100.00%)	6/1/2030
b4016.1	Rebuild the Jamesburg-Monroe 34.5 kV N40 line from Jamesburg substation to Monroe Junction substation, approximately 1.2 miles.	$5.13	JCPL	JCPL (100.00%)	6/1/2030
b4016.2	Replace limiting conductor and revise relay settings at Monroe substation.	$0.21	JCPL	JCPL (100.00%)	6/1/2030
b4016.3	Install new relay and revise relay settings at Costco substation.	$0.25	JCPL	JCPL (100.00%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4016.4	Rebuild a section of the Englishtown-Monroe Junction 34.5 kV H34 line that is mutual with the Costco-Monroe Junction 34.5 kV N40 line near Monroe Junction substation, approximately 0.4 miles.	$0.76	JCPL	JCPL (100.00%)	6/1/2030
b4017.1	Upgrade line relaying at Van Hiseville substation.	$0.55	JCPL	JCPL (100.00%)	6/1/2030
b4017.2	Rebuild Great Adventure 34.5 kV substation as an eleven-breaker, breaker-and-a-half station	$26.17	JCPL	JCPL (100.00%)	6/1/2030
b4017.3	Upgrade line relaying at Windsor Substation.	$0.08	JCPL	JCPL (100.00%)	6/1/2030
b4017.4	Rebuild the Cookstown-Windsor 34.5 kV H60 line from Cookstown substation to Str No. 58 as a double circuit, approximately 4.7 miles. Terminate new line into Cookstown substation.	$14.59	JCPL	JCPL (100.00%)	6/1/2030
b4017.5	Rebuild the Cookstown-Van Hiseville 34.5 kV V22 line from Str No. 91445 to Greater Adventure substation as a double circuit, approximately 5.2 miles.	$17.93	JCPL	JCPL (100.00%)	6/1/2030
b4017.6	At Cookstown Substation, replace 34.5 kV breaker, two disconnect switches, relaying and ancillary terminal equipment.	$2.36	JCPL	JCPL (100.00%)	6/1/2030
b4018.1	Purchase land needed to support construction of new 34.5 kV switching station.	$0.15	JCPL	JCPL (100.00%)	6/1/2030
b4018.2	Replace line relaying at South Lakewood Substation.	$0.15	JCPL	JCPL (100.00%)	6/1/2030
b4018.3	Terminate 34.5 kV lines to new 34.5 kV ring bus station.	$0.22	JCPL	JCPL (100.00%)	6/1/2030
b4018.4	Replace limiting conductor at Larrabee substation.	$0.13	JCPL	JCPL (100.00%)	6/1/2030
b4018.5	Remove equipment and add breakers and switches at Metedeconk Substation. Remove equipment to isolate transformers.	$14.46	JCPL	JCPL (100.00%)	6/1/2030
b4018.6	Replace line relaying at Leisure Village Substation.	$0.15	JCPL	JCPL (100.00%)	6/1/2030
b4018.7	Reconfigure 34.5 kV switchyard at Metedeconk Substation to a breaker-and-a-half yard.	$2.18	JCPL	JCPL (100.00%)	6/1/2030
b4018.8	Build a new 34.5 kV ring bus switching station (adjacent to Vermont Avenue substation).	$13.33	JCPL	JCPL (100.00%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4018.9	Loop the Leisure Village-South Lakewood 34.5 kV F214 line into the new 34.5 kV ring bus station, approximately 0.1 miles.	$0.92	JCPL	JCPL (100.00%)	6/1/2030
b4018.10	Install new hardware and wire on the Herbertsville - Larrabee 34.5 kV Q43 line to support the rebuild project of approximately 2.6 miles.	$14.82	JCPL	JCPL (100.00%)	6/1/2030
b4018.11	Install new hardware and wire on the Larrabee - Point Pleasant No. 2 34.5 kV R44 line to support the rebuild project, approximately 2.6 miles.	$17.80	JCPL	JCPL (100.00%)	6/1/2030
b4018.12	Install a new tie line from the existing Vermont Avenue substation to the new 34.5 kV ring bus station, approximately 0.1 miles.	$0.75	JCPL	JCPL (100.00%)	6/1/2030
b4018.13	Install a new tie line from the existing Vermont Avenue substation to the new 34.5 kV ring bus station, approximately 0.1 miles	$0.68	JCPL	JCPL (100.00%)	6/1/2030
b4019.1	Replace/update riser structure, pot head, cable and sweeps as required to accept high-capacity conductor at Rahway 69 kV. Rebuild duct banks as needed.	$1.05	PSEG	PSEG (100.00%)	6/1/2030
b4019.2	Replace/update riser structure, pot head, cable and sweeps as required to accept high-capacity conductor at Roselle 69 kV. Rebuild duct banks as needed.	$1.35	PSEG	PSEG (100.00%)	6/1/2030
b4019.3	Reconductor 69 kV line from Rahway to Roselle station. High-capacity conductor to be rated at least 1100 summer normal and 1200 summer emergency. • 2 miles of OH wreck and rebuild • 2.5 miles of OH new construction • 0.2 miles of UG. Replace fiber as required.	$27.00	PSEG	PSEG (100.00%)	6/1/2030
b4020.1	• Replace/update pole riser, pot head riser, associated sweeps and cable as required to accept high-capacity conductor at Gloucester 230 kV. • Replace LP41K relays with new primary SEL-311L and backup SEL-411L relays. Replace duct banks as required.	$1.20	PSEG	PSEG (100.00%)	6/1/2030
b4020.2	Replace existing OH wire with high-capacity conductor at Nicholson 230 kV. Replace LP10K relays with new primary SEL-311L and backup SEL-411L relays.	$0.15	PSEG	PSEG (100.00%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4020.3	• Wreck and rebuild OH circuit including transfer of any underbuilt circuits below the 69 kV. • Install composite poles instead of wood poles. • Install shield wire. • Install fiber and all necessary fiber accessories. • Install high-capacity conductor from Gloucester to Nicholson. • Minimum ratings: summer normal -1100A (131 MVA) • Replace UG cable with high-capacity conductor and sweeps as required.	$9.45	PSEG	PSEG (100.00%)	6/1/2030
b4021.1	Upgrade the Pfisterer connection inside of Prospect Park to accept new high-capacity cable; modify conduit as needed.	$0.67	PSEG	PSEG (100.00%)	6/1/2030
b4021.2	Upgrade the Pfisterer connection inside of North Paterson to accept new high-capacity cable; reconfigure duct banks in North Paterson to accommodate new high-capacity cable.	$1.17	PSEG	PSEG (100.00%)	6/1/2030
b4021.3	Reconductor 69 kV line from Prospect Park to North Paterson with a high-capacity conductor, including installing new composite poles and manholes along the line as required.	$13.87	PSEG	PSEG (100.00%)	6/1/2030
b4022.1	Replace approx. 2 miles per circuit of existing HPFF cables with new 3500 KCM CU LPP HPFF cables.	$58.49	BGE	BGE (100.00%)	6/1/2030
b4023.1	Upgrade existing 500 and 750 SDCU on Vienna side of Vienna-Loretto facility with 2x954 ACSR. Replace three 138 kV 600A disconnect switches with 2000A rated units.	$1.81	DPL	DPL (100.00%)	12/1/2030
b4024.1	Rebuild existing Sharptown-Laurel 69 kV circuit utilizing 954 ACSR "Rail" 45/7 conductor.	$36.55	DPL	DPL (100.00%)	6/1/2030
b4024.2	Upgrade breaker, rigid bus, relay and disconnect switch at Laurel substation on the Sharptown-Laurel facility.	$1.70	DPL	DPL (100.00%)	6/1/2030
b4025.1	Build new 28-mile transmission line from Mendota to Sandwich.	$159.57	ComEd	ComEd (100.00%)	4/15/2030
b4025.2	Convert Mendota straight bus to ring by installing four new 138 kV circuit breakers.	$10.37	ComEd	ComEd (100.00%)	4/15/2030
b4025.3	Install 138 kV BT circuit breaker and associated equipment at Sandwich.	$1.95	ComEd	ComEd (100.00%)	4/15/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4026.1	Rebuild approximately 3.5 miles of 69 kV line from Platter Creek to Sherwood station.	$7.17	AEP	AEP (100.00%)	4/15/2030
b4026.2	Rebuild approximately 11.1 miles of 69 kV line from Sherwood to Auglaize station.	$21.51	AEP	AEP (100.00%)	4/15/2030
b4027.1	Sag study the Smith Mountain-Moneta 138 kV line. Approximately 14 structures will need to be added in existing rights-of-way to increase the sag along the existing centerline such that the higher requested ampacity can be achieved along the corridor and maintain safety clearances.	$9.60	AEP	AEP (100.00%)	6/1/2030
b4027.2	Replace the 2" IPS Sch. 40 conductor with 4" IPS Sch. 40 conductor at Smith Mountain station on the Smith Mountain-Rock Castle branch allowing the branch to exceed a summer emergency rating of 1765A.	$0.28	AEP	AEP (100.00%)	6/1/2030
b4028.1	Rebuild 2.3 miles of the Mound Street-St Clair Avenue 138 kV UG line with 5000 KCM XLPE cable.	$41.59	AEP	AEP (100.00%)	6/1/2030
b4029.1	Expand existing Slykerville 230 kV station to add a 500 kV yard. Build a new Kelayres 500 kV breaker-and-a-half substation. Add two 890 MVA, 500/230 kV transformers at Kelayres.	$72.92	PPL	PPL (100.00%)	5/1/2030
b4029.2	Add one 500 kV, 4000A circuit breaker, two 500 kV, 4000A MODs and a Kelayres 890 MVA 500/230 kV T3 transformer.	$29.02	PPL	PPL (100.00%)	5/1/2030
b4029.5	Susquehanna-Tomhicken 230 kV 1 and 2 DCT line reconductor: Reconduct both circuits on the existing DCT tower with ACCC 1036/87/392 (2045 kcmil) conductor.	$29.73	PPL	PPL (100.00%)	5/1/2030
b4029.6	Upgrade the existing Monroe 230/138 kV substation to a two-bay breaker and a half on the 230 kV side (with space to accommodate two future bays), and a double-bus double-breaker design on the 138 kV side.	$30.95	PPL	PPL (100.00%)	5/1/2030
b4029.7	Retermination of the Monroe-Fox Hill and Monroe-Martins Creek 230 kV lines into their new locations in the upgraded 230 kV breaker-and-a-half yard.	$8.27	PPL	PPL (100.00%)	5/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4029.9	The Montour-Glen Brook 230 kV 1 and 2 DCT line is 24.9 miles long. For this project, the developer will reconduct 0.70 miles of this route with ACCC 1036/87/392 (2045 kcmil) conductor. Another 5.2 miles of the route will be rebuilt with new steel pole structures and double-bundle 1590 ACSR conductor. The remaining 19 miles of the route is being rebuilt and reconductored as part of supplemental project s2373 to address end of life for CORTEN structures.	$37.15	PPL	PPL (100.00%)	5/1/2030
b4029.10	At Glen Brook 230/69 kV substation, replace ten 230 kV, 2000A MODs with 230 kV, 3000A MODs.	$2.50	PPL	PPL (100.00%)	5/1/2030
b4029.11	At the Jenkins 230/69 kV substation, re-terminate the Jenkins 230/69 kV T2 and T4 transformers into bay positions in the 69 kV and 230 kV yards, respectively. Add one new 230 kV, 3000A circuit breaker, and two 230 kV, 3000A MODs to accommodate the retermination of the T4 transformer into the east bay position in the existing 230 kV breaker-and-a-half bay 2. Add two new 69 kV, 3000A circuit breakers and four 69 kV, 3000A switches to accommodate the retermination of the T2 transformer into a new 69 kV double-bus double-breaker bay 4.	$8.71	PPL	PPL (100.00%)	5/1/2030
b4029.12	Reterminate high side of T4 transformer into bay 2E of the 230 kV yard.	$1.46	PPL	PPL (100.00%)	5/1/2030
b4029.13	Glen Brook - Susquehanna T10 1 & 2 DCT line reconductor	$2.63	PPL	PPL (100.00%)	5/1/2030
b4029.14	Susquehanna T10-Susquehanna 230 kV No. 3 line: Construct a new Susquehanna T10-Susquehanna 230 kV No. 3 line (~2.7 miles) using an approximately 75% brownfield route, with a short greenfield segment near the Susquehanna station.	$14.33	PPL	PPL (100.00%)	5/1/2030
b4029.15	Construct a new breaker-and-a-half bay at Susquehanna T10 230 kV station and initially populate with two 230 kV, 3000A circuit breakers and four 230 kV, 3000A MODs, leaving a position for a future breaker to be added.	$6.62	PPL	PPL (100.00%)	5/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4029.16	Reuse existing bay and upgrade to 3000A. Existing bay at Susquehanna vacated by the former Sunbury line. Inspect all facilities, refurbish and insure bay rating of 3000A.	$1.24	PPL	PPL (100.00%)	5/1/2030
b4029.18	Replace Six 230 kV breakers at Susquehanna	$4.50	PPL	PPL (100.00%)	6/1/2030
b4030.1	Chesterfield-Basin 230 kV rebuild: Wreck and rebuild approximately 12.5 miles of Chesterfield-Basin 230 kV line.	$100.31	VEPCO	Dominion (100.00%)	6/1/2030
b4030.2	Chesterfield-Hopewell 230 kV reconductor: Reconductor 230 kV lines No. 211 and No. 228 between the existing Chesterfield-Hopewell 230 kV substation. Each line reconductor is ~3 miles long.	$6.34	VEPCO	Dominion (100.00%)	6/1/2030
b4030.3	Basin 230 kV substation scope: Replace all terminal equipment, line leads and bus at Basin 230 kV substation to be rated to 4000A.	$1.96	VEPCO	Dominion (100.00%)	6/1/2030
b4030.4	Chesterfield 230 kV substation scope: Replace all terminal equipment, line leads and bus at Chesterfield 230 kV substation to be rated to 4000A.	$3.51	VEPCO	Dominion (100.00%)	6/1/2030
b4030.5	Chesterfield 230 kV substation scope: Install a new 230 kV, 80 kA 4000A circuit breaker at Chesterfield 230 kV substation.	$1.50	VEPCO	Dominion (100.00%)	6/1/2030
b4030.9	Charlottesville-Fork Union 230 kV rebuild: Wreck and rebuild ~24 miles of Charlottesville-Fork Union 230 kV line.	$106.49	VEPCO	Dominion (100.00%)	6/1/2030
b4030.10	Fork Union-Bremo 230 kV rebuild: Wreck and Rebuild approximately 1.74 miles of Fork Union-Bremo 230 kV line.	$10.81	VEPCO	Dominion (100.00%)	6/1/2030
b4030.11	Charlottesville 230 kV substation scope: Replace all terminal equipment at Charlottesville 230 kV substation to support the new line conductor ratings of the Charlottesville-Fork Union 230 kV rebuild.	$3.35	VEPCO	Dominion (100.00%)	6/1/2030
b4030.12	Fork Union 230 kV substation scope: Replace all terminal equipment at Fork Union 230 kV substation to support the new line conductor ratings of the Charlottesville-Fork Union 230 kV rebuild.	$2.24	VEPCO	Dominion (100.00%)	6/1/2030
b4030.13	Fork Union 230 kV substation scope: Replace all terminal equipment at Fork Union 230 kV substation to support the new conductor ratings of the Fork Union-Bremo 230 kV rebuild.	$1.60	VEPCO	Dominion (100.00%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4030.14	Bremo 230 kV substation scope: Replace all terminal equipment at Bremo 230 kV substation to support the new conductor ratings of the Fork Union-Bremo 230 kV rebuild.	$1.80	VEPCO	Dominion (100.00%)	6/1/2030
b4030.15	Mt. Eagle tap 230 kV substation scope: Upgrade disconnect switches at Mt. Eagle tap 230 kV substation to 4000A.	$0.65	VEPCO	Dominion (100.00%)	6/1/2030
b4030.16	Sycamore Springs 230 kV substation scope: Reset relays at Sycamore Springs 230 kV substation.	$0.04	VEPCO	Dominion (100.00%)	6/1/2030
b4031.1	Wreck and rebuild line No. 5 using conductor with minimum summer rating of 393 MVA.	$5.00	Dominion	Dominion (100.00%)	6/30/2030
b4031.2	At Bremo substation, upgrade relevant equipment below 2000A, such as line leads, breakers, switches and CTs to accommodate the upgraded line 5.	$1.00	Dominion	Dominion (100.00%)	6/30/2030
b4031.3	At Fork Union substation, upgrade relevant equipment below 2000A, such as line leads, breakers, switches and CTs to accommodate the upgraded line 5.	$1.00	Dominion	Dominion (100.00%)	6/30/2030
b4032.2	Replace the 2-pole wood structure No. 154 on the Montville-Whippany 34.5 kV, K115 line with a monopole and UG riser. Install approximately 200 ft. of new UG conductor to be spliced with existing section of UG conductor into Montville substation.	$1.49	JCPL	JCPL (100.00%)	6/1/2030
b4032.3	Replace the 2-pole wood structure No. 154 on the Montville-Whippany 34.5 kV O93 line with a monopole UG riser and install approximately 200 ft. of new UG conductor to be spliced with existing section of UG conductor into the Montville substation.	$1.13	JCPL	JCPL (100.00%)	6/1/2030
b4033.1	At Tasley Substation (69kV) replace one capacitor bank (14.4 MVAR) and install one new capacitor bank (7.2 MVAR).	$2.64	ODEC	DPL (100.00%)	12/31/2030
b4033.2	Convert Tasley Substation (69kV) to breaker-and-a-half (BAAH) configuration with two new breaker bays in order to accommodate new Tasley - Oak Hall line and Tasley cap banks.	$18.83	ODEC	DPL (100.00%)	12/31/2030
b4033.3	At Kellam Substation (69kV), replace one capacitor bank (14.4 MVAR) and install one new capacity bank (7.2 MVAR).	$2.52	ODEC	DPL (100.00%)	12/31/2030
b4033.4	At Cheriton Substation (69kV), install one new capacitor bank (3.6 MVAR).	$1.19	ODEC	DPL (100.00%)	12/31/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4033.5	At Belle Haven Substation (69kV), replace one capacitor bank (14.4 MVAR).	$1.14	ODEC	DPL (100.00%)	12/31/2030
b4033.6	Rebuild Oak Hall Substation 69kV yard and upgrade to breaker-and-a-half (BAAH) configuration to accommodate new Tasley - Oak Hall line.	$32.46	DPL	DPL (100.00%)	12/31/2030
b4033.7	Rebuild 69kV line from Oak Hall - Hallwood - Tasley.	$29.81	ODEC	DPL (100.00%)	12/31/2030
b4033.8	Construct new 69kV transmission line from Oak Hall - Tasley in existing ROW.	$41.74	ODEC	DPL (100.00%)	12/31/2030
b4033.9	Upgrade line relaying at Tasley Substation (69kV).	$1.11	ODEC	DPL (100.00%)	12/31/2030
b4033.10	Upgrade line relaying at Kellam Substation (69kV).	$0.58	ODEC	DPL (100.00%)	12/31/2030
b4035.1	Reconductor one span of the Smith Mountain-Museville 138 kV line with 2-556 ACSR conductor.	$1.43	AEP	AEP (100.00%)	1/1/2029
b4035.2	Replace Smith Mountain 138 kV switches CS1, CS2 and C1S2 with 3000A switches and replace switch jumpers with 2-1272 AAC.	$0.37	AEP	AEP (100.00%)	1/1/2029
b4036.19	Replace nine 500 kV circuit breakers Conemaugh 500 kV substation with new 63 kA, 5000A breakers.	$22.24	MAIT	PENELEC (100.00%)	6/1/2031
b4037.1	2024W1 P5: Install open battery monitoring and modify relay wiring: Addressing FG No. 2024-P5-APS25.	$0.60	APS	APS (100.00%)	6/1/2029
b4038.1	2024W1 P5: Modify relay wiring: Addressing FG No. 2024-P5-APS02	$0.66	APS	APS (100.00%)	6/1/2029
b4039.1	2024W1 P5: Replace three relay panels and modify relay wiring. Addresses FG No. 2024-P5-APS24.	$4.22	APS	APS (100.00%)	6/1/2029
b4039.2	2024W1 P5: Replace one relay panel at a confidential substation connected to the substation associated with b4039.1. Addresses FG No. 2024-P5-APS24.	$0.00	APS	APS (100.00%)	6/1/2029
b4039.3	2024W1 P5: Replace one relay panel at a confidential substation connected to the substation associated with b4039.1. Addresses FG No. 2024-P5-APS24.	$0.00	APS	APS (100.00%)	6/1/2029
b4039.4	2024W1 P5: Replace one relay panel at a confidential substation connected to the substation associated with b4039.1. Addresses FG No. 2024-P5-APS24.	$0.00	APS	APS (100.00%)	6/1/2029
b4040.1	2024W1 P5: Install battery monitoring, DC panel and modify relay wiring: Addressing FG No. 2024-P5-APS03	$0.97	APS	APS (100.00%)	6/1/2029

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4041.1	2024W1 P5: Install battery monitoring, DC panel, line panel and modify relay wiring: Addressing FG No. 2024-P5-ATSI15	$1.23	ATSI	ATSI (100.00%)	6/1/2029
b4042.1	2024W1 P5: Install open battery monitoring and modify relay wiring: Addressing FG No. 2024-P5DYN-JCPL03	$0.48	JCPL	JCPL (100.00%)	6/1/2029
b4043.1	2024W1 P5: Modify relay wiring: Addressing FG No. 2024-P5-JCPL06	$0.66	JCPL	JCPL (100.00%)	6/1/2029
b4044.1	2024W1 P5: Install open battery monitoring and modify relay wiring: Addressing FG No. 2024-P5DYN-ME04	$0.64	ME	ME (100.00%)	6/1/2029
b4045.1	2024W1 P5: Install relay panel and modify relay wiring: Addressing FG No. 2024-P5-JCPL01	$0.66	JCPL	JCPL (100.00%)	6/1/2029
b4046.1	2024W1 P5: Install battery monitoring, DC panel and modify relay wiring: Addressing FG No. 2024-P5DYN-JCPL04	$0.81	JCPL	JCPL (100.00%)	6/1/2029
b4047.1	2024W1 P5: Install open battery monitoring and modify relay wiring: Addressing FG No. 2024-P5-JCPL03	$0.64	JCPL	JCPL (100.00%)	6/1/2029
b4048.1	2024W1 P5: Install open battery monitoring and modify relay wiring: Addressing FG No. 2024-P5DYN-ME02	$0.97	ME	ME (100.00%)	6/1/2029
b4049.1	2024W1 P5: Install open battery monitoring and modify relay wiring: Addressing FG No. 2024-P5DYN-JCPL02	$0.97	JCPL	JCPL (100.00%)	6/1/2029
b4050.1	2024W1 P5: Modify relay wiring: Addressing FG No. 2024-P5-ATSI05	$0.66	ATSI	ATSI (100.00%)	6/1/2029
b4051.1	2024W1 P5: Install open battery monitoring and modify relay wiring: Addressing FG No. 2024-P5-ATSI09	$0.45	ATSI	ATSI (100.00%)	6/1/2029
b4052.11	Replace Bells Mill T3 XF with new PEPCO standard 260 MVA 230/138 kV transformer.	$12.80	PEPCO	PEPCO (100.00%)	6/1/2032
b4053.30	Replace 230 kV, 63 kA breakers 205182, 2051T2063, 221282 with 80 kA breakers at Clifton substation.	$3.00	VEPCO	Dominion (100.00%)	6/1/2030
b4053.31	Replace 500 kV, 40 kA breakers H1T559 with 63 kA breakers at Clifton substation.	$1.00	VEPCO	Dominion (100.00%)	6/1/2030
b4053.32	Replace 230 kV, 63 kA breakers H592, L292, 203292, 207592, 28392-3, H692, L192 with 80 kA breakers at Elmont substation.	$7.00	VEPCO	Dominion (100.00%)	6/1/2030
b4053.33	Replace 230 kV 63 kA breakers 213732, 226132 with 80 kA breakers at Celestial substation.	$2.00	VEPCO	Dominion (100.00%)	6/1/2030
b4054.1	2024W1 P5: Install open battery monitoring and modify relay wiring: Addressing FG No. 2024-P5DYN-ME03	$0.33	ME	ME (100.00%)	6/1/2029

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4055.1	2024W1 P5: Install open battery monitoring and modify relay wiring: Addressing FG No. 2024-P5DYN-PN04	$0.40	PENELEC	PENELEC (100.00%)	6/1/2029
b4056.1	2024W1 P5: Move backup relaying DC supply to separate battery and modify relay wiring Addresses FG No. 2024-P5DYN-PN02	$0.48	PENELEC	PENELEC (100.00%)	6/1/2029
b4057.1	2024W1 P5: Install relay panel and modify relay wiring: Addressing FG No. 2024-P5-APS06	$0.36	APS	APS (100.00%)	6/1/2029
b4058.1	2024W1 P5: Install open battery monitoring and modify relay wiring: Addressing FG No. 2024-P5-ME04	$0.51	ME	ME (100.00%)	6/1/2029
b4059.1	2024W1 P5: Install open battery monitoring, install relay panel, modify relay wiring: Addressing FG No. 2024-P5-ME05	$0.69	ME	ME (100.00%)	6/1/2029
b4060.1	2024W1 P5: Install open battery monitoring, install relay panel, modify relay wiring: Addressing FG No. 2024-P5-APS01	$1.14	APS	APS (100.00%)	6/1/2029
b4061.1	2024W1 P5: Install open battery monitoring and modify relay wiring: Addressing FG No. 2024-P5-APS05	$0.97	APS	APS (100.00%)	6/1/2029
b4062.1	2024W1 P5: Install open battery monitoring and modify relay wiring: Addressing FG No. 2024-P5-APS08	$0.64	APS	APS (100.00%)	6/1/2029
b4063.1	2024W1 P5: Install battery monitoring, DC panel(s); replace bus differential scheme and modify relay wiring: Addressing FG No. 2024-P5-APS22	$1.29	APS	APS (100.00%)	6/1/2029
b4064.1	2024W1 P5: Install battery monitoring, relay panels; modify relay wiring: Addressing FG No. 2024-P5-APS23	$1.94	APS	APS (100.00%)	6/1/2029
b4065.1	2024W1 P5: Install battery monitoring system and replace two 115 kV line protection schemes. Addresses FG No. 2024-P5-PN04	$2.90	PENELEC	PENELEC (100.00%)	6/1/2029
b4065.2	2024W1 P5: Install one relay panel at a confidential substation connected to the substation associated with b4065.1. Addresses FG No. 2024-P5-PN04	$0.00	PENELEC	PENELEC (100.00%)	6/1/2029
b4066.1	2024W1 P5: Install open battery monitoring and modify relay wiring: Addressing FG No. 2024-P5-PN05	$2.58	PENELEC	PENELEC (100.00%)	6/1/2029
b4067.1	2024W1 P5: Install battery monitoring, DC panel and modify relay wiring: Addressing FG No. 2024-P5DYN-JCPL01	$0.81	JCPL	JCPL (100.00%)	6/1/2029
b4068.6	Teddy 765/345 kV substation: Install two 345 kV capacitor banks at Teddy substation.	$5.56	ATSI	ATSI (100.00%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4068.13	Teddy-Cole single-circuit 345 kV: Construct a new 18.66-mile 345 kV line between the proposed Teddy 345 kV substation and existing Cole 345 kV substation on a shared structure with Teddy-Beatty single-circuit 345 kV (FE portion). The total length of Teddy-Cole 345 kV circuit is 41.7 miles.	$50.19	GGOHLLC	ATSI (100.00%)	6/1/2030
b4068.14	Teddy-Cole single-circuit 345 kV: Construct a new 13.34-mile 345 kV line between the proposed Teddy 345 kV substation and existing Cole 345 kV substation on a shared structure with Teddy-Beatty single-circuit 345 kV (AEP portion). The total length of Teddy-Cole 345 kV circuit is 41.7 miles.	$37.40	GGOHLLC	AEP (100.00%)	6/1/2030
b4068.15	Teddy-Cole single-circuit 345 kV: • Install second circuit on the vacant side of the existing 9.7-mile 345 kV AC overhead transmission line between the existing Cole 345 kV substation and the existing Beatty 345 kV substation. • The total length of Teddy-Cole 345 kV circuit is 41.7 miles.	$21.63	AEPOTC	AEP (100.00%)	6/1/2030
b4068.16	Cole 345 kV substation scope: Create a new 345 kV line position to interconnect the new 345 kV Teddy line.	$1.00	AEPOTC	AEP (100.00%)	6/1/2030
b4068.24	Ohio Central 138 kV scope: Extend existing Ohio Central 345 kV extension by one span to cut into the existing Conesville-Newark Center 138 kV line to loop the existing Conesville-Newark Center 138 kV line into Ohio Central station by installing four new three-pole steel pole structures.	$3.50	AEPOTC	AEP (100.00%)	6/1/2030
b4068.25	Bixby 345 kV substation Scope: New relaying at Bixby 345 kV substation	$0.08	AEPOTC	AEP (100.00%)	6/1/2030
b4068.28	Hyatt-Maliszewski 345 and 138 kV rebuild: Rebuild 5.25-mile section of the 345 kV circuit from Hyatt station to Maliszewski station that shares tower with 138 kV line.	$17.06	AEP	Dayton (100.00%)	6/1/2030
b4068.29	Hayden-Cole 345 kV: Rebuild 7.8 miles of Beatty-Hayden 345 kV line.	$37.87	AEPOTC	AEP (100.00%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4068.30	Newark 138 kV Center station scope: Replace wave trap and limiting bus conductor at Newark Center substation.	$0.70	AEPOTC	AEP (100.00%)	6/1/2030
b4068.31	Allen 138 kV substation scope: Replace bus conductor at Allen station.	$0.05	IMPC	AEP (100.00%)	6/1/2030
b4068.32	Roberts-Kenny 138 kV rebuild: Retire 3.18 miles of the Roberts-Kenny 138 kV underground line and install new underground cable for increased require ratings.	$66.36	OHPC	AEP (100.00%)	6/1/2030
b4068.33	Wilson-Fifth Avenue 138 kV line: Perform sag remediation on the Wilson-Fifth Avenue 138 kV line.	$18.25	AEPOTC	AEP (100.00%)	6/1/2030
b4068.34	Bethel 138 kV substation scope: Replace one 138 kV circuit breaker.	$0.50	AEPOTC	AEP (100.00%)	6/1/2030
b4068.35	OSU 138 kV station scope: Replace one 138 kV circuit breaker.	$0.50	AEPOTC	AEP (100.00%)	6/1/2030
b4068.36	Hess 138 kV substation scope: Replace one 138 kV circuit breaker to alleviate CT thermal limit.	$0.70	AEPOTC	AEP (100.00%)	6/1/2030
b4068.37	South Kenton 138 kV substation scope: Replace line-side disconnect switches and bus tie switch on East Lima line at South Kenton substation.	$0.11	AEPOTC	AEP (100.00%)	6/1/2030
b4068.38	Meadow Lake 345 kV substation scope: Replace four 345 kV circuit breakers.	$4.00	IMPC	AEP (100.00%)	6/1/2030
b4068.42	Ohio Central station scope: Install two new 138 kV circuit breakers.	$3.00	AEPOTC	AEP (100.00%)	6/1/2030
b4068.46	East Springfield-London structures: Lower the existing First Energy East Springfield 138 kV line between structures 29 and 30 on the proposed Teddy-Beatty 345 kV line.	$1.00	ATSI	ATSI (100.00%)	6/1/2030
b4068.47	Beatty-Hayden structures: Lower the existing Beatty-Hayden 345 kV line between structures 2 and 3 to facilitate crossing the proposed Teddy-Beatty 345 kV line.	$3.00	AEPOTC	AEP (100.00%)	6/1/2030
b4068.48	Marysville 765 kV substation: Add two 345 kV capacitor banks.	$5.56	AEP	AEP (100.00%)	6/1/2030
b4068.49	Hyatt-Maliszewski 345 and 138 kV rebuild: Rebuild 5.25-mile section of the 138 kV circuit from Hyatt station to Maliszewski station that shares tower with 345 kV line.	$17.06	AEP	AEP (100.00%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4070.1	2024W1 P5: Modify relay wiring: Addressing FG No. 2024-P5DYN-ME01	$0.33	ME	ME (100.00%)	6/1/2029
b4071.1	2024W1 P5: Separate DC supply to backup relaying and the second trip coils; modify relay wiring: Addressing FG No. 2024-P5DYN-PN03	$0.66	PENELEC	PENELEC (100.00%)	6/1/2029
b4072.1	2024W1 P5: Install open battery monitoring and modify relay wiring: Addressing FG No. 2024-P5-ME02	$0.97	ME	ME (100.00%)	6/1/2029
b4073.1	2024W1 P5: Install battery monitoring: Addressing FG No. 2024-P5-COMED01	$0.25	ComEd	ComEd (100.00%)	6/1/2029
b4073.2	2024W1 P5: Install battery monitoring: Addressing FG No. 2024-P5-COMED30	$0.10	ComEd	ComEd (100.00%)	6/1/2029
b4073.3	2024W1 P5: Install battery monitoring: Addressing FG No. 2024-P5-COMED28	$0.05	ComEd	ComEd (100.00%)	6/1/2029
b4073.4	2024W1 P5: Install battery monitoring: Addressing FG No. 2024-P5-COMED31	$0.10	ComEd	ComEd (100.00%)	6/1/2029
b4073.5	2024W1 P5: Install battery monitoring: Addressing FG No. 2024-P5-COMED29	$0.10	ComEd	ComEd (100.00%)	6/1/2029
b4073.6	2024W1 P5: Install battery monitoring: Addressing FG No. 2024-P5-COMED14	$0.10	ComEd	ComEd (100.00%)	6/1/2029
b4074.1	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the control center: Addressing FG No. 2024-P5-PECO01	$0.03	PECO	PECO (100.00%)	6/1/2029
b4074.2	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO02	$0.03	PECO	PECO (100.00%)	6/1/2029
b4074.3	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO03	$0.03	PECO	PECO (100.00%)	6/1/2029

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4074.4	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO04	$0.03	PECO	PECO (100.00%)	6/1/2029
b4074.5	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO05	$0.03	PECO	PECO (100.00%)	6/1/2029
b4074.6	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install Shunt enclosure; and connect alarm points to SCADA to monitor and report low voltage and open circuit conditions on the station DC supply to the Control Center.: Addressing FG No. 2024-P5-PECO06	$0.03	PECO	PECO (100.00%)	6/1/2029
b4074.7	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO07	$0.03	PECO	PECO (100.00%)	6/1/2029
b4074.8	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO08	$0.05	PECO	PECO (100.00%)	6/1/2029
b4074.9	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO09	$0.03	PECO	PECO (100.00%)	6/1/2029
b4074.10	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO10	$0.03	PECO	PECO (100.00%)	6/1/2029

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4074.11	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO11	$0.03	PECO	PECO (100.00%)	6/1/2029
b4074.12	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO12	$0.03	PECO	PECO (100.00%)	6/1/2029
b4074.13	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO13	$0.03	PECO	PECO (100.00%)	6/1/2029
b4074.14	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO14	$0.03	PECO	PECO (100.00%)	6/1/2029
b4074.15	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO15	$0.03	PECO	PECO (100.00%)	6/1/2029
b4074.16	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO16	$0.03	PECO	PECO (100.00%)	6/1/2029
b4074.17	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO17	$0.05	PECO	PECO (100.00%)	6/1/2029

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4074.18	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5-PECO18	$0.03	PECO	PECO (100.00%)	6/1/2029
b4074.19	2024W1 P5: Replace existing battery charger; install auxiliary alarm relay board; install shunt enclosure; and connect alarm points to SCADA to monitor and report low-voltage and open-circuit conditions on the station DC supply to the Control Center: Addressing FG No. 2024-P5DYN-PECO01	$0.03	PECO	PECO (100.00%)	6/1/2029
b4075.1	2024W1 P5: Install open circuit battery monitoring: Addressing FG No. 2024-P5-AEC01	$0.02	ACE	AEC (100.00%)	6/1/2029
b4075.2	2024W1 P5: Install open circuit battery monitoring: Addressing FG No. 2024-P5-AEC02	$0.02	ACE	AEC (100.00%)	6/1/2029
b4075.3	2024W1 P5: Install open-circuit battery monitoring: Addressing FG No. 2024-P5-AEC03	$0.02	ACE	AEC (100.00%)	6/1/2029
b4075.4	2024W1 P5: Install open-circuit battery monitoring: Addressing FG No. 2024-P5-AEC04	$0.02	ACE	AEC (100.00%)	6/1/2029
b4075.5	2024W1 P5: Install open-circuit battery monitoring: Addressing FG No. 2024-P5-AEC05	$0.02	ACE	AEC (100.00%)	6/1/2029
b4075.6	2024W1 P5: Install open-circuit battery monitoring: Addressing FG No. 2024-P5-AEC06	$0.02	ACE	AEC (100.00%)	6/1/2029
b4075.7	2024W1 P5: Install open-circuit battery monitoring: Addressing FG No. 2024-P5-AEC07	$0.02	ACE	AEC (100.00%)	6/1/2029
b4075.8	2024W1 P5: Install open-circuit battery monitoring: Addressing FG No. 2024-P5-AEC08	$0.02	ACE	AEC (100.00%)	6/1/2029
b4076.1	2024W1 P5: Install open-circuit monitoring. Addresses FG No. 2024-P5-DPL01	$0.02	DPL	DPL (100.00%)	6/1/2029
b4076.2	2024W1 P5: Install open circuit monitoring. Addresses FG No. 2024-P5-DPL02	$0.02	DPL	DPL (100.00%)	6/1/2029
b4076.3	2024W1 P5: Install open-circuit monitoring. Addresses FG No. 2024-P5-DPL03	$0.02	DPL	DPL (100.00%)	6/1/2029
b4076.4	2024W1 P5: Install open-circuit monitoring. Addresses FG No. 2024-P5-DPL04	$0.02	DPL	DPL (100.00%)	6/1/2029

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4076.5	2024W1 P5: Install open-circuit monitoring. Addresses FG No. 2024-P5-DPL05	$0.02	DPL	DPL (100.00%)	6/1/2029
b4076.6	2024W1 P5: Install open-circuit monitoring. Addresses FG No. 2024-P5-DPL07	$0.02	DPL	DPL (100.00%)	6/1/2029
b4076.7	2024W1 P5: Install open-circuit monitoring. Addresses FG No. 2024-P5-DPL08	$0.02	DPL	DPL (100.00%)	6/1/2029
b4076.8	2024W1 P5: Install open-circuit monitoring. Addresses FG No. 2024-P5-DPL09	$0.02	DPL	DPL (100.00%)	6/1/2029
b4076.9	2024W1 P5: Install open-circuit monitoring. Addresses FG No. 2024-P5-DPL10, 2024-P5DYN-DPL02	$0.02	DPL	DPL (100.00%)	6/1/2029
b4076.10	2024W1 P5: Install open-circuit monitoring. Addresses FG No. 2024-P5DYN-DPL01	$0.02	DPL	DPL (100.00%)	6/1/2029

Attachment B – Reliability Project Multi-Zone Allocations

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4005.1	Replace the existing 1590 ACSR single conductor on the Roseland to Livingston 230 kV line with a 1590 ACSS single conductor.	$4.87	PSEG	PSEG (96.50%) RE (3.50%)	3/1/2028
b4005.2	Replace the existing 1590 ACSR single conductor on the Roseland to Laurel Ave 230 kV line with a 1590 ACSS single conductor.	$5.06	PSEG	PSEG (96.50%) RE (3.50%)	3/1/2028
b4029.3	Bifurcate the Sunbury-Susquehanna 500 kV line. From the bifurcation point, build a 13-mile extension to Kelayres, resulting in a Susquehanna-Kelayres 500 kV line.	$20.87	PPL	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** PPL (99.99%) PSEG (0.01%)	5/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4029.4	Bifurcate the Sunbury-Susquehanna 500 kV line bringing both segments into a new Kelayres 500 kV station on separate towers. From the bifurcation point, build a 24-mile extension to Kelayres, resulting in a Sunbury-Kelayres 500 kV line.	$133.64	PPL	Load-Ratio Share Allocation: AEC (1.63%)/AEP (14.27%)/APS (5.89%)/ATSI (7.62%)/BGE (3.96%)/ComEd (12.47%)/Dayton (2.04%)/DEOK (3.12%)/DL (1.62%)/Dominion (14.85%)/DPL (2.53%)/EKPC (2.26%)/JCPL (3.78%)/ME (1.81%)/Neptune (0.41%)/OVEC (0.07%)/PECO (5.04%)/PENELEC (1.75%)/PEPCO (3.62%)/PPL (4.85%)/PSEG (6.16%)/RE (0.25%) **DFAX Allocation:** AEC (3.17%) JCPL (17.96%) Neptune (1.87%) PPL (35.04%) PSEG (40.49%) RE (1.47%)	5/1/2030
b4029.8	Address end-of-life concerns by rebuilding the existing 38-mile Juniata-Sunbury 500 kV line using single-circuit design.	$162.89	PPL	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEC (1.22%) DL (14.42%) JCPL (4.70%) Neptune (0.40%) PENELEC (21.67%) PEPCO (34.99%) PPL (14.92%) PSEG (7.41%) RE (0.27%)	5/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4030.6	Suffolk-Yadkin 500 kV rebuild: Rebuild approximately 13.2 miles of Suffolk-Yadkin 500 kV line.	$68.86	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** Dominion (100.00%)	6/1/2030
b4030.7	Suffolk 500 kV substation scope: Replace all terminal equipment at Suffolk 500 kV substation to be rated to 5000 A.	$5.23	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** Dominion (100.00%)	6/1/2030
b4030.8	Yadkin 500 kV substation scope: Replace all terminal equipment at Yadkin 500 kV substation to be rated to 5000A.	$0.24	VEPCO	Load-Ratio Share Allocation: AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:**	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
				Dominion (100.00%)	
b4032.1	Install a 500 kV double-breaker double-bus at Montville substation Install a 500/230 kV transformer and 500 kV breaker. Install new breaker string in the 230 kV yard to create a breaker-and-a-half layout. Reterminate the 230-34.5 kV transformers.	$72.14	JCPL	JCPL (42.72%) PSEG (55.27%) RE (2.01%)	6/1/2030
b4032.4	PSEG 500 kV transmission line work: Loop the Roseland-Hopatcong 500 kV line into JCPL Montville substation.	$9.04	PSEG	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) DFAX Allocation: JCPL (29.69%) Neptune (2.69%) PSEG (65.25%) RE (2.37%)	6/1/2030
b4032.5	500 kV terminal upgrade at Hopatcong and Roseland-Loop the Roseland-Hopatcong 500 kV line into Montville substation	$0.65	PSEG	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** JCPL (29.69%) Neptune (2.69%) PSEG (65.25%) RE (2.37%)	6/1/2030
b4032.6	PSEG 230 kV transmission line work: Rework PSEG 230 kV lines into JCPL Montville substation.	$13.63	PSEG	Neptune (4.82%) PSEG (91.85%) RE (3.33%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4034.1	The existing line 2016 in the corridor will be cut into the Goalders Creek three-breaker ring bus station such that the remaining section of line going to Harmony Village will be renumbered to 2XX1.	$4.48	VEPCO	AEC (0.67%) AEP (2.90%) APS (2.06%) ATSI (1.53%) BGE (3.95%) ComEd (10.43%) Dayton (0.06%) DEOK (0.26%) DL (0.34%) Dominion (60.33%) DPL (1.24%) ECP (0.06%) EKPC (0.43%) HTP (0.04%) JCPL (1.60%) ME (2.14%) Neptune (0.17%) PECO (2.52%) PENELEC (0.13%) PEPCO (3.90%) PPL (1.52%) PSEG (3.71%) RE (0.01%)	1/1/2029
b4034.2	This project involves installing a new 230/115 kV TX1 transformer using a 115 kV breaker and associated switches, as well as a new 230 kV line from Lanexa & Harmony Village with a 230 kV breaker and associated switches.	$17.33	VEPCO	AEC (0.67%) AEP (2.90%) APS (2.06%) ATSI (1.53%) BGE (3.95%) ComEd (10.43%) Dayton (0.06%) DEOK (0.26%) DL (0.34%) Dominion (60.33%) DPL (1.24%) ECP (0.06%) EKPC (0.43%) HTP (0.04%) JCPL (1.60%) ME (2.14%) Neptune (0.17%) PECO (2.52%) PENELEC (0.13%) PEPCO (3.90%) PPL (1.52%) PSEG (3.71%) RE (0.01%)	1/1/2029
b4034.3	This project at Harmony Village substation requires a relay reset only on line 2016 relays.	$0.02	VEPCO	AEC (0.67%) AEP (2.90%) APS (2.06%) ATSI (1.53%) BGE (3.95%) ComEd (10.43%) Dayton (0.06%) DEOK (0.26%) DL (0.34%) Dominion (60.33%) DPL (1.24%) ECP (0.06%) EKPC (0.43%) HTP (0.04%) JCPL (1.60%) ME (2.14%) Neptune (0.17%) PECO (2.52%) PENELEC (0.13%) PEPCO (3.90%) PPL (1.52%) PSEG (3.71%) RE (0.01%)	1/1/2029
b4034.4	This project at Lanexa substation requires a relay reset only on line 2016 relays.	$0.02	VEPCO	AEC (0.67%) AEP (2.90%) APS (2.06%) ATSI (1.53%) BGE (3.95%) ComEd (10.43%) Dayton (0.06%) DEOK (0.26%) DL (0.34%) Dominion (60.33%) DPL (1.24%) ECP (0.06%) EKPC (0.43%) HTP (0.04%) JCPL (1.60%) ME (2.14%) Neptune (0.17%) PECO (2.52%) PENELEC (0.13%) PEPCO (3.90%) PPL (1.52%) PSEG (3.71%) RE (0.01%)	1/1/2029

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4036.1	Upgrade Keystone terminal of Keystone-South Bend 500 kV line.	$0.76	MAIT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** APS (5.36%) DL (1.06%) PENELEC (2.23%) PPL (91.35%)	6/1/2031
b4036.2	Upgrade South Bend terminal of Keystone-South Bend 500 kV line.	$0.76	KATCo	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** APS (5.36%) DL (1.06%) PPL (93.58%)	6/1/2031
b4036.3	Upgrade Keystone terminal of Keystone-Juniata 500 kV line.	$7.76	MAIT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEC (3.70%) JCPL (12.60%) ME (8.26%) Neptune (1.36%) PECO (14.05%) PPL (39.85%) PSEG (19.47%) RE (0.71%)	6/1/2031

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4036.4	Upgrade Juniata Terminal of Keystone - Juniata 500 kV Line	$0.00	PPL	**Load-Ratio Share Allocation:** AEC (1.63%)/AEP (14.27%)/APS (5.89%)/ATSI (7.62%)/BGE (3.96%)/ComEd (12.47%)/Dayton (2.04%)/DEOK (3.12%)/DL (1.62%)/Dominion (14.85%)/DPL (2.53%)/EKPC (2.26%)/JCPL (3.78%)/ME (1.81%)/Neptune (0.41%)/OVEC (0.07%)/PECO (5.04%)/PENELEC (1.75%)/PEPCO (3.62%)/PPL (4.85%)/PSEG (6.16%)/RE (0.25%) **DFAX Allocation:** AEC (3.70%)/JCPL (12.60%)/ME (8.26%)/Neptune (1.36%)/PECO (14.05%)/PPL (39.85%)/PSEG (19.47%)/RE (0.71%)	6/1/2031
b4036.5	Upgrade Mountaineer terminal of Mountaineer-Belmont 765 kV line.	$1.03	AEP	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEP (3.31%) APS (3.71%) ATSI (51.69%) BGE (0.65%) Dayton (0.91%) DEOK (1.66%) DL (20.41%) EKPC (0.36%) OVEC (0.03%) PEPCO (17.27%)	6/1/2031

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4036.6	Upgrade Belmont Terminal of Mountaineer - Belmont 765 kV Line	$0.00	APS	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEP (3.31%) APS (3.71%) ATSI (51.69%) BGE (0.65%) Dayton (0.91%) DEOK (1.66%) DL (20.41%) EKPC (0.36%) OVEC (0.03%) PEPCO (17.27%)	6/1/2031
b4036.7	Kammer substation work for new Kammer-Buttermilk Falls 765 kV line termination	$16.80	AEP	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEC (2.99%) AEP (2.09%) APS (21.19%) ATSI (17.66%) BGE (1.07%) Dayton (0.47%) DEOK (0.61%) EKPC (0.16%) JCPL (10.52%) ME (0.26%) Neptune (1.14%) PECO (11.36%) PEPCO (13.71%) PSEG (16.18%) RE (0.59%)	6/1/2031

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4036.8	Construct a new single-circuit 765 kV transmission line between Kammer and proposed Buttermilk Falls substations (AEP Zone). The total length of the line is 114 miles.	$96.98	KJT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEC (2.99%) AEP (2.09%) APS (21.19%) ATSI (17.66%) BGE (1.07%) Dayton (0.47%) DEOK (0.61%) EKPC (0.16%) JCPL (10.52%) ME (0.26%) Neptune (1.14%) PECO (11.36%) PEPCO (13.71%) PSEG (16.18%) RE (0.59%)	6/1/2031
b4036.9	Construct a new single-circuit 765 kV transmission line between Kammer and proposed Buttermilk Falls substations (APS Zone). The total length of the line is 114 miles.	$571.11	KJT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEC (2.99%) AEP (2.09%) APS (21.19%) ATSI (17.66%) BGE (1.07%) Dayton (0.47%) DEOK (0.61%) EKPC (0.16%) JCPL (10.52%) ME (0.26%) Neptune (1.14%) PECO (11.36%) PEPCO (13.71%) PSEG (16.18%) RE (0.59%)	6/1/2031

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4036.10	Construct a new single-circuit 765 kV transmission line between Kammer and proposed Buttermilk Falls substations (PENELEC Zone). The total length of the line is 114 miles.	$26.63	KJT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEC (2.99%) AEP (2.09%) APS (21.19%) ATSI (17.66%) BGE (1.07%) Dayton (0.47%) DEOK (0.60%) EKPC (0.16%) JCPL (10.52%) ME (0.26%) Neptune (1.14%) PECO (11.36%) PENELEC (0.01%) PEPCO (13.71%) PSEG (16.18%) RE (0.59%)	6/1/2031
b4036.11	Construct a new single-circuit 765 kV transmission line between proposed Buttermilk Falls and proposed Mountain Stone substations (PENELEC Zone). The total length of the line is 108 miles.	$541.32	KJT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEC (3.01%) APS (11.60%) DPL (2.65%) JCPL (10.45%) ME (5.35%) Neptune (1.13%) PECO (11.33%) PEPCO (5.18%) PPL (31.99%) PSEG (16.70%) RE (0.61%)	6/1/2031

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4036.12	Construct a new single-circuit 765 kV transmission line between proposed Buttermilk Falls and proposed Mountain Stone substations (PPL Zone). The total length of the line is 108 miles.	$92.03	KJT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEC (3.01%) APS (11.60%) DPL (2.65%) JCPL (10.45%) ME (5.35%) Neptune (1.13%) PECO (11.33%) PEPCO (5.18%) PPL (31.99%) PSEG (16.70%) RE (0.61%)	6/1/2031
b4036.13	765/500 kV substation work at new Mountain Stone	$166.94	KJT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEC (3.01%) APS (11.60%) DPL (2.65%) JCPL (10.45%) ME (5.35%) Neptune (1.13%) PECO (11.33%) PEPCO (5.18%) PPL (31.99%) PSEG (16.70%) RE (0.61%)	6/1/2031

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4036.14	765/500 kV substation work at new Buttermilk station	$170.29	KJT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (27.67%) Dayton (30.41%) DEOK (41.83%) DL (0.04%) PENELEC (0.01%) PEPCO (0.04%)	6/1/2031
b4036.15	Install two new 500 kV circuit breaker at north and south bus to terminate the 765-500 kV transformers leads. Upgrade protection settings at Juniata (PPL work).	$9.95	PPL	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEC (3.01%) APS (11.60%) DPL (2.65%) JCPL (10.45%) ME (5.35%) Neptune (1.13%) PECO (11.33%) PEPCO (5.18%) PPL (31.99%) PSEG (16.70%) RE (0.61%)	6/1/2031
b4036.16	Install two new 500 kV circuit breaker at north and south bus to terminate the 765-500 kV transformers leads. Upgrade protection settings at Juniata (NextEra work).	$0.00	NEET	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEC (3.01%) APS (11.60%)	6/1/2031

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
				DPL (2.65%) JCPL (10.45%) ME (5.35%) Neptune (1.13%) PECO (11.33%) PEPCO (5.18%) PPL (31.99%) PSEG (16.70%) RE (0.61%)	
b4036.17	Install two new 500 kV circuit breakers with 63 kA, 5000A rating in transformer T24 and T25 bay. Both transformers will be in double-bus, double-breaker position after adding these two new breakers (Sunbry).	$4.98	PPL	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) DFAX Allocation: AEC (3.01%) APS (11.60%) DPL (2.65%) JCPL (10.45%) ME (5.35%) Neptune (1.13%) PECO (11.33%) PEPCO (5.18%) PPL (31.99%) PSEG (16.70%) RE (0.61%)	6/1/2031
b4036.18	Construct two new single-circuit 500 kV t-lines between proposed Mountain Stone substation and Juniata substation. The total length of the line is 0.6 miles.	$5.32	KJT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEC (3.01%) APS (11.60%) DPL (2.65%) JCPL (10.45%) ME (5.35%) Neptune (1.13%) PECO (11.33%) PEPCO (5.18%) PPL (31.99%) PSEG (16.70%) RE (0.61%)	6/1/2031

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4036.20	Transmission line work: Loop in Keystone-Conemaugh 500 kV into Buttermilk Falls-Establish Keystone-Buttermilk Falls.	$11.20	MAIT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** APS (0.85%) ATSI (0.84%) DL (0.44%) PECO (32.96%) PENELEC (0.09%) PEPCO (21.75%) PPL (43.07%)	6/1/2031
b4036.21	Upgrade Keystone terminal of Keystone-Buttermilk Fall 500 kV line (formerly Keystone-Conemaugh).	$15.01	MAIT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** APS (0.85%) ATSI (0.84%) DL (0.44%) PECO (32.96%) PENELEC (0.09%) PEPCO (21.75%) PPL (43.07%)	6/1/2031

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4036.22	Transmission line work: Loop in Keystone-Conemaugh 500 kV into Buttermilk Falls. Establish Conemaugh-Buttermilk Falls.	$11.20	MAIT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** APS (5.45%) ATSI (30.97%) BGE (19.73%) DL (11.03%) PENELEC (3.04%) PEPCO (2.88%) PPL (26.90%)	6/1/2031
b4036.23	Upgrade Conemaugh terminal of Conemaugh-Buttermilk Falls 500 kV line (formerly Keystone-Conemaugh).	$17.08	MAIT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** APS (5.45%) ATSI (30.97%) BGE (19.73%) DL (11.03%) PENELEC (3.04%) PEPCO (2.88%) PPL (26.90%)	6/1/2031
b4052.1	New 500/230 kV substation (Dickerson) by cutting into the Aspen-Rocky Point 500 kV line	$161.83	PEPCO	APS (29.97%) BGE (23.86%) PEPCO (46.17%)	6/1/2032
b4052.2	Install two 500/230 kV transformers connecting a new 500 kV Dickerson station and DIckeson "H" 230 kV station including 230 kV substation work.	$67.05	PEPCO	APS (29.97%) BGE (23.86%) PEPCO (46.17%)	6/1/2032

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4052.3	Rocky Point-Dickerson (new 500 kV) termination work at Dickerson 500 kV	$9.49	PEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** Dominion (84.83%) PEPCO (15.17%)	6/1/2032
b4052.4	Aspen-Dickerson (new 500 kV) termination work at Dickerson 500 kV	$9.49	PEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** Dominion (100.00%)	6/1/2032
b4052.5	Rocky Point 500 kV remote work for Dickerson (new 500 kV)-Rocky Point line	$0.00	APS	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** APS (1.65%) Dominion (83.43%) PEPCO (14.92%)	6/1/2032

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4052.6	Aspen 500 kV remote work for Dickerson (new 500 kV)-Aspen line	$0.00	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** Dominion (100.00%)	6/1/2032
b4052.7	Install 3.2% 230 kV series reactor at Dickerson "H" terminal side of the Edwards Ferry-Dickerson circuit.	$0.85	PEPCO	BGE (6.60%) Dominion (81.09%) PEPCO (12.31%)	6/1/2032
b4052.8	Relocate Dickerson "D"-Quince Orchard 23035 to terminate at Dickerson "H" at Dickerson No. 2 tie location.	$8.88	PEPCO	BGE (33.43%) PEPCO (66.57%)	6/1/2032
b4052.9	Replace two breakers, one bushing CT, one stranded bus conductor, four disconnect switches at Brighton 500 kV substation.	$8.00	PEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEC (2.60%) BGE (46.66%) DL (1.79%) Dominion (10.73%) DPL (7.02%) PECO (8.99%) PEPCO (22.21%)	6/1/2032
b4052.10	Replace one stranded bus conductor, three thermal relays, two disconnect switches at Quince Orchard 230 kV substation.	$3.75	PEPCO	BGE (32.84%) PEPCO (67.16%)	6/1/2032

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4053.1	Uprate 500 kV line No. 560 terminal equipment at Possum Point substation so as not to limit the conductor rating.	$0.40	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (15.58%) Dominion (34.85%) ME (1.10%) PEPCO (40.00%) PPL (8.47%)	6/1/2032
b4053.2	Rebuild approximately 0.19-mile segment of 500 kV line No. 560 from Possum Point substation (structure 560/1A) to Burches Interconnection (structure 560/1F) using 6000A conductor.	$3.49	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (15.58%) Dominion (34.85%) ME (1.10%) PEPCO (40.00%) PPL (8.47%)	6/1/2032
b4053.3	Construct a new bipolar +/- 525 kV HVDC link connecting Heritage and Mosby substations, where the link has a capability of transmitting 3,000 MW. The HVDC link, approximately 185 miles in length, will be fully routed underground between the two new proposed converter stations, one at Heritage and one at Mosby.	$2,271.70	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (5.17%) DL (1.48%)	6/1/2032

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
				Dominion (87.78%) PEPCO (5.57%)	
b4053.4	Design and construct a new Voltage Source Converter (VSC) HVDC station at Heritage substation to support the new HVDC link.	$773.73	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (5.17%) DL (1.48%) Dominion (87.78%) PEPCO (5.57%)	6/1/2032
b4053.5	Design and construct a new Voltage Source Converter (VSC) HVDC station at Mosby substation to support the new HVDC link.	$745.42	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (5.17%) DL (1.48%) Dominion (87.78%) PEPCO (5.57%)	6/1/2032
b4053.6	Rebuild 20 miles of 500 kV line No. 576 from North Anna substation to Vontay substation using 6000A conductor.	$102.70	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:**	6/1/2032

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
				BGE (9.81%) Dominion (77.75%) PEPCO (12.44%)	
b4053.7	Upgrade/install 6000A equipment at North Anna substation to support the new conductor termination.	$2.16	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (9.81%) Dominion (77.75%) PEPCO (12.44%)	6/1/2032
b4053.8	Build a new 500 kV line from Elmont-Kraken (approximately 31 miles). The new line will be constructed primarily of double-circuit 500 kV/230 kV monopole structures. The proposed route follows existing 230 kV line No. 2032 from Elmont-Hanover-Four Rivers and 230 kV line No. 256 from Four Rivers-Kings Dominion-St Johns-Kraken.	$147.85	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (9.85%) Dominion (77.18%) PEPCO (12.97%)	6/1/2032
b4053.9	Construct one new 500 kV line terminal position at the existing Elmont substation.	$6.04	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%)	6/1/2032

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
				DFAX Allocation: BGE (9.85%) Dominion (77.18%) PEPCO (12.97%)	
b4053.10	Construct one new 500 kV line terminal position at the proposed Kraken substation.	$8.61	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (9.85%) Dominion (77.18%) PEPCO (12.97%)	6/1/2032
b4053.11	Cut and loop line No. 5008 into Mosby substation, which will result in two 500 kV lines: line No. 5008 Morrisville-Mosby and line No. 9573 Mosby-Wishing Star.	$6.69	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** Dominion (100.00%)	6/1/2030
b4053.12	Install two 500 kV breakers and all associated terminal equipment in the available bay adjacent to existing breaker XT590 to achieve a redundant breaker arrangement. Upgrade existing terminal equipment to 500 kV, 5000A 63 kAIC standards including breaker (XT590), disconnect switches (59078, X74), leads and bus work. Install two 500 kV breakers and all associated terminal equipment in the available bay adjacent to existing	$9.56	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
	breaker 55972 to achieve a redundant breaker arrangement. Upgrade existing terminal equipment to 500 kV, 5000A 63 kAIC standards including breaker (55972), disconnect switches (55975, 55974), leads and bus work.			**DFAX Allocation:** APS (15.21%) Dominion (84.79%)	
b4053.13	Construct a new 765/500 kV Vontay switching station at the crossing of 500 kV line No. 553 Cunningham-Elmont and 765 kV line Joshua Falls-Yeat. Develop two 765 kV line terminal positions and three 500 kV line terminal positions. Install one 765/500 kV transformer, with provisions for a future second transformer.	$217.76	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** Dominion (100.00%)	6/1/2032
b4053.14	Loop 500 kV line No. 553 into the new Vontay substation, which will result in two 500 kV lines: Cunningham-Vontay and Vontay-Elmont.	$6.69	VEPCO	**Load-Ratio Share Allocation**: AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (4.83%) Dominion (88.42%) PEPCO (6.75%)	6/1/2032

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4053.15	Loop 500 kV line No. 576 into the new Vontay substation, which will result in two 500 kV lines: from North Anna-Vontay and Vontay-Midlothian.	$6.69	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (9.81%) Dominion (77.75%) PEPCO (12.44%)	6/1/2032
b4053.16	Loop 765 kV Joshua Falls-Yeat into the new Vontay substation, which will result in two 765 kV lines: from Joshua Falls-Vontay and Vontay-Yeat.	$8.36	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** APS (7.31%) BGE (9.65%) Dominion (70.72%) PEPCO (12.32%)	6/1/2032
b4053.17	Replace equipment on the 500 kV side of Carson substation with 5000A equipment.	$12.44	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** Dominion (92.95%) PEPCO (7.05%)	6/1/2032

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4053.18	Rebuild approximately 37.4 miles of 500 kV line No. 563 from Carson-Midlothian. The proposed structures to be installed are mainly 500/230 kV double-circuit V-string suspension towers. The 230 kV circuit position will be vacant at the completion of this project but serves to accommodate a future 230 kV line.	$228.48	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** Dominion (92.95%) PEPCO (7.05%)	6/1/2032
b4053.19	Uprate 500 kV line No. 563 associated terminal equipment at Carson to 5000A standards.	$6.15	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** Dominion (92.95%) PEPCO (7.05%)	6/1/2032
b4053.20	Uprate 500 kV line No. 563 associated terminal equipment at Midlothian to 5000A standards.	$2.43	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** Dominion (92.95%) PEPCO (7.05%)	6/1/2032

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4053.21	Uprate 500 kV line No. 567 associated terminal equipment at Chickahominy to 5000A standards.	$0.03	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** Dominion (100.00%)	6/1/2032
b4053.22	Uprate 500 kV line No. 567 associated terminal equipment at Surry to 5000A standards.	$2.46	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** Dominion (100.00%)	6/1/2032
b4053.23	Rebuild approximately 22 miles of 500 kV line No. 539 Yeat-Ox using 6000A conductor on double-circuit structures with the option of adding a 230 kV line at a later time.	$122.66	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (10.06%) Dominion (73.45%) PEPCO (16.49%)	6/1/2032

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4053.24	Upgrade 500 kV line No. 539 associated equipment at Ox substation to support the new conductor rating.	$2.25	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (10.06%) Dominion (73.45%) PEPCO (16.49%)	6/1/2032
b4053.25	Upgrade 500 kV line No. 539 associated equipment at Yeat substation to support the new conductor rating.	$0.33	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (10.06%) Dominion (73.45%) PEPCO (16.49%)	6/1/2032
b4053.26	Rebuild 20 miles of 500 kV line No. 576 from Vontay substation to Midlothian substation using 6000A conductor.	$102.70	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** DL (4.46%) Dominion (85.46%) PEPCO (10.08%)	6/1/2032

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4053.27	Upgrade/install 6000A equipment at Midlothian substation to support the new conductor termination from Vontay.	$2.16	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** DL (4.46%) Dominion (85.46%) PEPCO (10.08%)	6/1/2032
b4053.28	Replace 500 kV circuit breakers (54265 and 553T564) and all associated equipment to line No. 553 including switches and CT with 5000A equipment at Cunningham substation.	$9.20	VEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (4.83%) Dominion (88.42%) PEPCO (6.75%)	6/1/2032
b4053.29	Uprate 500 kV line No. 560 terminal equipment at Burches Hill substation in PEPCO so as not to limit the conductor rating. The scope includes upgrading/replacing two circuit breakers, four switches and two different portions of stranded bus.	$10.31	PEPCO	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** BGE (15.58%) Dominion (34.85%) ME (1.10%) PEPCO (40.00%) PPL (8.47%)	6/1/2032

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4068.1	Greentown 765 kV substation scope (AEP): Create a new 765 kV line position with three 100 MVAR single-phase reactors. Install two 765 kV circuit breakers.	$45.29	AEPIMT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEP (78.72%) ATSI (13.72%) Dayton (3.84%) DL (3.72%)	6/1/2030
b4068.2	Greentown-Teddy 765 kV line: Construct a 60-mile 765 kV AC overhead transmission line between the existing Greentown 765 kV substation and the proposed Teddy 765 kV substation (AEP Portion). The total line length is 137 miles of the Greentown to Teddy 765 kV line.	$277.57	AEPIMT	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEP (78.72%) ATSI (13.72%) Dayton (3.84%) DL (3.72%)	6/1/2030
b4068.3	Greentown-Teddy 765 kV line: Construct a 49.92-mile 765 kV AC overhead transmission line between the existing Greentown 765 kV substation and the proposed Teddy 765 kV substation (DAYTON Portion). The total line length is 137 miles of the Greentown to Teddy 765 kV line.	$230.94	GGOHLLC	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEP (78.72%) ATSI (13.72%) Dayton (3.84%) DL (3.72%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4068.4	Greentown-Teddy 765 kV line: Construct a 27.08-mile 765 kV AC overhead transmission line between the existing Greentown 765 kV substation and the proposed Teddy 765 kV substation (ATSI Portion). The total line length is 137 miles of the Greentown to Teddy 765 kV line.	$125.28	GGOHLLC	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEP (78.72%) ATSI (13.72%) Dayton (3.84%) DL (3.72%)	6/1/2030
b4068.5	Teddy 765/345 kV substation scope: Construct a new 765/345 kV greenfield substation interconnecting the new 765 kV Marysville line and the new 765 kV Greentown line with three 100 MVAR single-phase reactors on each 765 kV line. Install nine 765 kV circuit breakers. Install two 765/345 kV, 2250 MVA transformers. Install nine 345 kV circuit breakers.	$222.77	ATSI	AEP (83.47%) ATSI (5.46%) Dayton (11.07%)	6/1/2030
b4068.7	Teddy-Marysville 765 kV: Construct a 35.4-mile 765 kV AC overhead transmission line between the proposed 765 kV Teddy substation and the existing 765 kV Marysville substation (FE Portion).	$45.50	GGOHLLC	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** ATSI (75.81%) Dayton (0.01%) DEOK (0.01%) DL (24.17%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4068.8	Teddy-Marysville 765 kV: Construct a 35.4-mile 765 kV AC overhead transmission line between the proposed 765 kV Teddy substation and the existing 765 kV Marysville substation (AEP Portion).	$130.96	GGOHLLC	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEP (85.96%) Dayton (0.01%) DEOK (0.01%) DL (14.02%)	6/1/2030
b4068.9	Marysville 765 kV substation scope: Create a new 765 kV line position. Install two 765 kV circuit breakers. Create a new 765 kV line position to relocate the existing 765 kV Sorenson line. Install one 765 kV circuit breaker. Add one 765/345 kV, 2250 MVA transformer.	$112.01	AEPOTC	AEP (66.21%) Dayton (33.79%)	6/1/2030
b4068.10	Marysville 765 kV substation: Add one 765 kV STATCOM.	$164.25	AEP	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEP (100.00%)	6/1/2030
b4068.11	Teddy-Beatty single-circuit 345 kV: Construct a new 18.66-mile 345 kV line between the proposed Teddy 345 kV substation and existing Beatty 345 kV substation on a shared structure with Teddy-Cole single-circuit 345 kV (FE portion).	$50.19	GGOHLLC	ATSI (14.18%) Dayton (45.37%) DEOK (40.45%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
	The total length of Teddy-Beatty 345 kV circuit is 32 miles.				
b4068.12	Teddy-Beatty single-circuit 345 kV: Construct a new 13.34-mile 345 kV line between the proposed Teddy 345 kV substation and existing Beatty 345 kV substation on a shared structure with Teddy-Cole single-circuit 345 kV (AEP portion). The total length of Teddy-Beatty 345 kV circuit is 32 miles.	$37.40	GGOHLLC	AEP (61.77%) Dayton (20.21%) DEOK (18.02%)	6/1/2030
b4068.17	Beatty 345 kV substation scope: Create a new 345 kV line position to interconnect the new 345 kV Teddy line. Install two 345 kV circuit breakers.	$3.86	AEPOTC	AEP (61.77%) Dayton (20.21%) DEOK (18.02%)	6/1/2030
b4068.18	Guernsey 765 kV substation scope: Create a new 765 kV line position to interconnect the new 765 kV Conesville line. Install one 765 kV circuit breaker.	$5.54	AEPOTC	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEP (71.03%) APS (6.07%) Dayton (9.59%) DEOK (10.08%) DL (1.68%) EKPC (1.39%) OVEC (0.16%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4068.19	Guernsey-Conesville 765 kV: Construct a new 32-mile single-circuit 765 kV AC overhead transmission line between the existing Guernsey 765 kV substation and the new 765 kV Conesville substation.	$166.17	GGOHLLC	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEP (71.03%) APS (6.07%) Dayton (9.59%) DEOK (10.08%) DL (1.68%) EKPC (1.39%) OVEC (0.16%)	6/1/2030
b4068.20	West Millersport substation scope: Construct a new 765 kV West Millersport yard. Install four circuit breakers. Install one 765/345 kV, 2250 MVA transformer. Install one 345 kV circuit breaker.	$118.11	AEPOTC	AEP (86.42%) Dayton (6.91%) DEOK (6.57%) OVEC (0.10%)	6/1/2030
b4068.21	Ohio Central 345 kV scope: Retire a segment of the Bixby to Ohio Central 345 kV line and install approximately 3 miles of greenfield single-circuit 345 kV line from stucture 284 to West Millersport substation.	$12.00	AEPOTC	AEP (64.37%) Dayton (16.44%) DEOK (18.95%) OVEC (0.24%)	6/1/2030
b4068.22	Ohio Center-Conesville 345 kV: Wreck Ohio Center-Conesville 345 kV circuit to facilitate the Conesville-West Millersport 765 kV line. Note: The cost for Conesville-West Millersport 765 kV is a different component.	$1.46	AEPOTC	AEP (31.83%) Dayton (8.03%) DEOK (10.30%) DL (49.65%) OVEC (0.19%)	6/1/2030
b4068.23	Ohio Center-Bixby 345 kV: Wreck part of Ohio Center-Bixby 345 kV circuit around West Millersport 345 kV to facilitate the Conesville-West Millersport 765 kV line. Note: The cost for Conesville-West Millersport 765 kV is a different component.	$3.86	AEPOTC	AEP (31.83%) Dayton (8.03%) DEOK (10.30%) DL (49.65%) OVEC (0.19%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4068.26	West Millersport-Adkins 765 kV: Construct a new 38-mile single-circuit 765 kV AC overhead transmission line between the new 765 kV West Millersport substation and the new 765 kV Adkins substation.	$201.83	GGOHLLC	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEP (71.83%) ATSI (22.22%) DL (5.95%)	6/1/2030
b4068.27	West Millersport-Kirk 345 kV: Rebuild 6.37-mile section of the double-circuit West Millersport-Kirk 345 kV circuit.	$24.30	AEPOTC	AEP (92.64%) Dayton (7.36%)	6/1/2030
b4068.39	Conesville 765 kV substation scope: Upgrade the existing Conesville substation to include a 765 kV yard and expand the 345 kV yard. Install six 765 kV circuit breakers. Install one 765/345 kV, 2250 MVA transformer. Install one-circuit 345 kV circuit breaker. Replace wave trap and circuit switcher in 138 kV yard.	$140.97	AEPOTC	AEP (92.01%) Dayton (7.99%)	6/1/2030
b4068.40	Conesville-West Millersport 765 kV: Construct a new 49.1-mile single-circuit 765 kV AC overhead transmission line between the new Conesville 765 kV substation and the new West Millersport 765 kV substation.	$243.65	AEPOTC	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEP (31.83%) Dayton (8.03%) DEOK (10.30%) DL (49.65%) OVEC (0.19%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4068.41	Adkins 765 kV substation scope: Construct a 765 kV yard at Adkins substation. Install seven 765 kV circuit breakers. Install three 100 MVAR single-phase reactors on each 765 kV line.	$102.97	AEPOTC	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEP (100.00%)	6/1/2030
b4068.43	Kammer Dumont structures: Lower the existing Kammer to Dumont 765 kV line between structure 169 and 170 to facilitate crossing the proposed Conesville to Guernsey 765 kV line.	$2.00	AEPOTC	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEP (76.08%) Dayton (11.10%) DEOK (9.96%) DL (0.22%) Dominion (1.18%) EKPC (1.34%) OVEC (0.12%)	6/1/2030
b4068.44	Ohio Central-Fostoria Central structure: Remove structure 10 and replace with lower structure to lower the line.	$1.00	AEPOTC	AEP (7.26%) ATSI (92.74%)	6/1/2030

Upgrade ID	Description	Cost Estimate ($M)	Designated Entity / Transmission Owner	Cost Responsibility	Required IS Date
b4068.45	Gavin-Marysville structures: Raise the existing Gavin to Marysville 765 kV line between structures 358 and 359 to facilitate crossing the proposed Teddy to Beatty 345 kV line.	$3.00	AEPOTC	**Load-Ratio Share Allocation:** AEC (1.63%) AEP (14.27%) APS (5.89%) ATSI (7.62%) BGE (3.96%) ComEd (12.47%) Dayton (2.04%) DEOK (3.12%) DL (1.62%) Dominion (14.85%) DPL (2.53%) EKPC (2.26%) JCPL (3.78%) ME (1.81%) Neptune (0.41%) OVEC (0.07%) PECO (5.04%) PENELEC (1.75%) PEPCO (3.62%) PPL (4.85%) PSEG (6.16%) RE (0.25%) **DFAX Allocation:** AEP (67.19%) BGE (0.93%) Dayton (15.05%) DEOK (9.62%) DL (0.40%) Dominion (5.79%) PEPCO (1.02%)	6/1/2030