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

PJM Staff White Paper

PJM Interconnection
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I. Executive Summary

On July 15, 2026, the PJM Board of Managers approved changes to the Regional Transmission Expansion Plan (RTEP), totaling a net decrease of $1,165.59 million for baseline projects to resolve baseline reliability criteria violations and address changes to existing projects.

Since then, PJM has identified that new scope and/or cost changes to existing projects will result in a net increase of $3,512.39 million. PJM is also providing the 2026 annual update of RTEP generation and merchant transmission Network Upgrades in this white paper. New projects with signed Generation Interconnection Agreements (GIAs), project scope changes and project cancellations have resulted in a net increase of $436.05 million for Network Upgrades. This yields an overall RTEP net increase of approximately $3,948.44 million. With these changes, RTEP projects will total approximately $73,546.93 million since the first Board approvals in 2000.

PJM sought the Reliability and Security Committee consideration and full Board approval of the RTEP baseline project changes summarized in this white paper.

On November 17, 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. Changes to Previously Approved Projects

A. Scope/Cost Changes

The following scope/cost modifications are recommended:

Juniata 765/500 kV and Sunbury 500 kV Substations:

The cost estimate for baseline project b4036.15 and .17 has increased by a total of $146.6 million. PPL completed its review of the NextEra proposed scope, part of the 2025 RTEP Kammer to Juniata 765 kV transmission line, and the evaluation identified broader scope of work than originally anticipated. The additional scope involves constructing a new station adjacent to the existing Juniata 500 kV facility and additional work for the existing Sunbury 500kV GIS Substation.

The larger scope is required because:

- Bringing the 765/500 kV transformer lead lines into the existing Juniata 500 kV buses would cause thermal requirements that exceed the capability of the existing Juniata 500 kV buses.
- Given outage constraints and the limited footprint of the existing Juniata substation, it is not feasible to upgrade the existing facility to meet the required rating.
- The Juniata 500 kV substation is already the designated termination point for multiple new 500 kV transmission lines, further limiting expansion and upgrade options. 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.
- The installation of the two new 500 kV circuit breakers with 63 kA, 5000 A rating for the Transformers T24 and T25 will requires additional work at the Sunbury 500 kV substation. This reconfiguration of the Sunbury 500 kV substation includes the installation of a new 500 kV circuit breaker at bay 4 and move T24 to bay 4 making it a breaker and a half configuration.

For these reasons, the modified scope of work is recommended. The cost estimate for this project has increased from $1,789.39 million to $1,935.99 million, resulting in a net increase of $146.6 million.

Waldwick Shunt Reactors:

The baseline project b3794.1–.2 has increased by $15.8 million. Equipment costs have increased since the project was proposed and approved. Tariffs have added to equipment costs as well.

A recent uptick of reactor failures has resulted in PSE&G modifying its standards for switching methods for reactors going forward. New reactor breakers with "point-on-wave" switching capability provide a safer and more reliable method to switch the reactors while helping to preserve the lifespan of the reactors. The original scope did not include replacement of reactor breakers.

For these reasons, the modified scope of work is recommended. The cost estimate for this project has increased from $45.4 million to $61.2 million, resulting in a net increase of $15.8 million.

Joshua Falls 765 Substation:

Project b4000.359 is being brought forward for a scope change and cost increase. The scope change is associated with additional scope of work identified by AEP for terminating the Joshua Falls – Yeat 765 kV circuit into Joshua Falls which requires expanding the original Joshua Falls site. The reason for the cost increase is due to AEP's recommended alternative to relocate the Joshua Falls 765 kV substation, the installation of five 765 kV breakers and relocation of Joshua Falls 765/138 kV transformer to the new site, the termination of the 765 kV Cloverdale line and the 765 kV Yeat line into the relocated station, and the construction of a 138 kV line to reconnect the existing Joshua Falls 138 kV yard to the relocated station. To implement the original expansion of Joshua Falls site and add the two 765 kV breakers, significant grading is required. This work includes extensive movement and imports of fill, even after making concessions to slope away from the site aggressively to limit the amount of fill required. Also, because of the magnitude of movement, a temporary retaining wall would be required just to complete construction. If this project were to be completed as originally proposed, there would be no opportunity to expand Joshua Falls substation further. AEP provided a revised cost estimate of $216.6M for the original expansion option.

Relocating the Joshua Falls substation is a comparable cost but would enable more space to allow a more traditional 765 kV station configuration and flexibility for future growth. Property under consideration for the new site does not need fill to be imported or exported.

For these reasons, the modified scope of work is recommended. The cost estimate for this project has increased from $99.19 million to $225.5 million, resulting in a net increase of $126.31 million.

Smith Mountain 138 kV Upgrade:

Project b4000.201 is being brought forward for a scope change and cost increase. PJM loading requirements and target ratings were reviewed between AEP and PJM to ensure the ultimate scope of work would accommodate the anticipated loadings with an appropriate operating margin.

As a result of that review, additional work was identified, including the replacement of the 138 kV disconnect switches associated with breakers C and C2.

The cost estimate for this project has increased from $0.4 million to $1.4 million, resulting in a net increase of $1 million.

Yadkins to Fentress 500 kV:

The cost for project b3850.1–.3 is being brought forward for a cost increase. Construction bids for the transmission line work were received above the original estimate. Permitting delays resulted in schedule impacts, leading to change orders for both standby time and schedule acceleration. Material delivery delays affected project execution and required additional change orders to recover schedule and maintain project milestones.

The cost estimate for this project has increased from $79.70 million to $113.8 million, resulting in a net increase of $34.1 million.

502 Junction-Woodside-Aspen 500 kV & Doubs Corridor Projects:

The cost for project b3800.375 is being brought forward for a cost increase. Project cost updates are driven by upgraded conductor design, catwalk installation, updated geotechnical conditions, additional splice boxes, increased crossing requirements, taller structures for EMF and clearance compliance, and the inclusion of forestry and access work not accounted for in the previous project.

The cost estimate for this project has increased from $15.6 million to $38.35 million, resulting in a net increase of $22.75 million.

Thornburg 500/230 kV Substation:

Project b4000.351–.352 is being brought forward for a scope change without cost change. New scope was identified to terminate line 568 Ladysmith to Possum Point from the line of demarcation into Thornburg substation (Ladysmith-Thornburg portion – b4000.364) and terminate line 568 Ladysmith to Possum Point from the line of demarcation into Thornburg substation (Possum Point-Thornburg portion – b4000.365). Further discussion between Valley Link Transmission and Dominion determined that the work for the cut-in of 500 kV line No. 568 Ladysmith-Possum Point

into Thornburg substation should be split as highlighted above. The cost difference of these off set resulting in a zero net change.

Nokesville-Bristow 230 kV Line:

Project b4000.351–.352 is being brought forward for a scope change with no change in cost. Bristow will be located directly adjacent to Hornbaker. At the Dec. 3, 2024, TEAC meeting, the scope of DOM-2022-0045-DNH (Nokesville-Hornbaker 230 kV circuit No. 1) was reconfigured to terminate from Nokesville into Bristow rather than Hornbaker. This scope change revises the original termination of the 2nd 230kV circuit from Nokesville – Hornbaker to Nokesville – Bristow. There is no cost change to this project.

Ladysmith-Possum Point 500 kV Cut-In:

Project b4053.34 is being brought forward for a scope change (change in designated entity). Further discussion between Valley Link Transmission and Dominion determined that the designated entity for this baseline ID should be Valley Link Transmission over Dominion. There is no cost change to this project.

BGE 2022 Window 1 Projects:

The costs for projects b3770 and b3771 are being brought forward for cost change. The cost changes are visible in the following table:

RTEP ID	Project Description	Transmission Owner	Original Cost Estimate ($M)	Updated Cost Estimate ($M)	Cost Change
b3770	Rebuild 1.4 miles of existing single circuit 230 kV tower line between BGE's Graceton substation to the PPL tie line at the MD/PA state line to double-circuit steel pole line with one circuit installed to uprate 2303 circuit.	BGE	8.4	11.04	2.64
b3771	Reconductor two 230 kV circuits from Conastone to Northwest No. 2.	BGE	37.76	136.2	98.44
		Total	**46.16**	**147.24**	**101.08**

Primary drivers of cost increases include:

- Reactivation of transmission projects required revalidation of key project assumptions under current field conditions. Further engineering analysis and field assessments identified constructability constraints and execution requirements not previously captured.
- The b3770 and b3771 projects were selected to address reliability needs in PJM's 2022W1 RTEP, which replaced and reactivated scope from the suspended 9A market efficiency project (East portion). The scope for these transmission projects needed to be reactivated with the original 9A projects suspended in 2021 due to regulatory challenges in PA.
- Accelerated execution strategies were necessary to resolve outage constraints and achieve required in-service dates.

Increases in electric utility labor rates for engineering, construction and commissioning services driven by a combination of workforce shortages, unprecedented infrastructure investment, competition for skilled resources, wage inflation and project complexity

BGE/PEPCO/PECO 2022 Window 3 Projects:

Projects listed in the table below are being brought forward for cost change. The cost changes are provided in the following table:

RTEP ID	Project Description	Transmission Owner	Original Cost Estimate ($M)	Updated Cost Estimate ($M)	Cost Change
b3800.27	High Ridge 500 kV substation (cut into Brighton-Waugh Chapel 500 kV line) – Waugh Chapel side	BGE	33.67	40.16	6.49
b3800.28	High Ridge 500 kV substation (cut into Brighton-Waugh Chapel 500 kV line) – Brighton side	BGE	33.67	40.16	6.49
b3800.29	High Ridge termination for the Bramah-High Ridge 500 kV line	BGE	33.67	40.16	6.49
b3800.30	High Ridge – Install two 500/230 kV transformers.	BGE	22.11	78.34	56.23
b3800.32	Build new Bramah-High Ridge 500 kV line. (~59 miles)	BGE	407.11	810.14	403.03
b3800.34	Rebuild 5012 (existing Peach Bottom-Conastone) (Graceton-Conastone) 500 kV line on single-circuit structures and cut into Bramah and Graceton 500 kV stations.	BGE	70	61.17	-8.83
b3800.36	Rebuild 5012 (existing Peach Bottom-Conastone) (Bramah-Graceton BGE) 500 kV line on single-circuit structures and cut into Bramah and Graceton 500 kV stations.	BGE	10.44	21.32	10.88
b3800.37	Replace terminal equipment limitations at Conastone 500 kV on the (existing Peach Bottom-Conastone) or (new Graceton-Conastone) 500 kV line.	BGE	4.93	6.27	1.34
b3800.4	New Otter Creek to Doubs 500 kV line (MD Border-PSEG Demarcation Point). Rebuild and expand existing ~1.6 miles of Otter Creek-Conastone 230 kV line to become a double-circuit 500 and 230 kV lines.	BGE	11.11	33.73	22.62
b3800.41	Conastone-Brighton 500 kV (5011 circuit) – Replace terminal equipment limitations at Conastone 500 kV.	BGE	7.16	8.01	0.85

RTEP ID	Project Description	Transmission Owner	Original Cost Estimate ($M)	Updated Cost Estimate ($M)	Cost Change
b3800.38	Chalk Point 5073 terminal	PEPCO	0.34	0.76	0.42
b3800.243	New 500 kV Doubs to Aspen	PEPCO	37.2	26.53	-10.67
b3800.244	Dickerson H 23111 rebuild and relocation	PEPCO	18.6	65.06	46.46
b3800.31	Build new Bramah-High Ridge 500 kV line.	PECO	13.36	71.2	57.84
b3800.35	Rebuild 5012 (existing Peach Bottom-Conastone) (Bramah-Graceton PECO) 500 kV line on single-circuit structures and cut into Bramah and Gracetone 500 kV stations.	PECO	29.86	60.9	31.04
b3800.42	Peach Bottom North bus upgrade – Replace 11 instances of strain bus conductor, seven 500 kV switches, seven CTs, one 500 kV breaker, two breaker relays or meters.	PECO	2.7	7.27	4.57
b3800.44	Bramah termination for the Bramah-High Ridge 500 line (PECO work)	PECO	3.4	5	1.6
b3800.45	Bramah 500 kV termination for the Rock Springs 500 kV line (5034/5014 line) (PECO work).	PECO	0.8	1.9	1.1
b3800.47	Build new Peach Bottom South-Bramah 500 kV line – cut in to Peach Bottom tie No. 1 and extending line to Bramah (~1.25 miles new ROW).	PECO	5.5	21.4	15.9
b3800.52	Reconfigure Peach Bottom North/South to allow for termination of 500 kV lines from Peach Bottom to Bramah. Bramah termination for the new Peach Bottom-Bramah line.	PECO	7.86	21.5	13.64
		Total	**753.49**	**1,420.98**	**667.49**

Costs submitted during the RTEP process were based upon preliminary concept-level project definition and limited design and engineering analysis. Updated cost estimates reflect an advanced level of project scope maturity and are based upon completion of at least 30% design and engineering and procurement of long-lead major equipment. The 30% design included constructability reviews, which resulted in more comprehensive plans for right-of-way (ROW) access and construction and outage requirements.

Primary drivers of cost increases include:

- Competition for labor, materials, manufacturing capacity and specialized resources from rapidly expanding data center construction projects, electrification initiatives, grid modernization programs and renewable interconnections have significantly increased market demand and cost escalation across the industry. As a result, actual vendor quotes received through the competitive bid process for major long-lead equipment were higher than the budgetary estimates developed during the conceptual phase to support RTEP. Higher pricing reflects constrained global manufacturing capacity, elevated commodity costs and broader supply chain pressures.
- Increases in electric utility labor rates for engineering, construction and commissioning services driven by a combination of workforce shortages, unprecedented infrastructure investment, competition for skilled resources, wage inflation and project complexity
- Extended permitting and regulatory review timelines have increased project complexity and execution risk. Prolonged approval processes often require schedule adjustments, compressed construction windows, additional coordination efforts and increased resource requirements to maintain critical in-service dates.
- Increased overhead costs necessary to manage significant volume and complexity of work

Cost containment provisions are applicable to most of the BGE and PEPCO 2022 Window 3 projects. These provisions are intended to soften the cost increase impacts on rates. Please refer to BGE & PEPCO 2022 Window 3 DEAs posted on PJM's competitive planning page for applicable cost containment provisions.

BGE 2024 Window 1 Project b3906.1 – Marley Neck 115 kV Substation:

Project b3906.1 is being brought forward for cost change. Costs submitted during the RTEP process were based upon preliminary concept-level project definition and limited design and engineering analysis. Updated cost estimates reflect an advanced level of project scope maturity and are based upon completion of 30% design and engineering and procurement of long-lead major equipment.

Primary drivers of cost increases include:

- Competition for labor, materials, manufacturing capacity and specialized resources from rapidly expanding data center construction projects, electrification initiatives, grid modernization programs and renewable interconnections have significantly increased market demand and cost escalation across the industry. As a result, actual vendor quotes received through the competitive bid process for major long-lead equipment were higher than the budgetary estimates developed during the conceptual phase to support RTEP. Higher pricing reflects constrained global manufacturing capacity, elevated commodity costs and broader supply chain pressures.

- Increases in electric utility labor rates for engineering, construction and commissioning services driven by a combination of workforce shortages, unprecedented infrastructure investment, competition for skilled resources, wage inflation and project complexity
- Increased overhead costs necessary to manage significant volume and complexity of work

The cost estimate for this project has increased from $107.62 million to $122.07 million, resulting in a net increase of $14.45 million.

Valley Link Transmission - 2024 Window 1 Project(s)

Valley Link Transmission provided notice to PJM on October 22nd regarding anticipated changes to in-service dates and cost estimates associated with the 2024 RTEP Window 1 Projects for Proposal IDs, 2024-W1-967 (500kV Kraken Loop), 2024-W1-820 (765kV Line from Joshua Falls – Yeat), and 2024-W1-708 (765kV line from Amos - Welton Springs – Rocky Point).

The original proposals assumed a June 1, 2029 in-service date across all project components. Following continued post-award project development, the anticipated in-service date has been revised to May 31, 2031 reflecting more detailed routing analysis, expanded stakeholder and regulatory engagement, and further development and understanding of permitting and other required approvals.

Valley Link has also updated the project cost estimate from approximately $2.732 billion in 2024 dollars to $5.115 billion in 2026 dollars. The revised estimate reflects project maturation and current market conditions, including increased construction labor and outside services costs, right-of-way and land costs, and material and equipment costs. These project costs will continue to be updated as the project matures.

All of the scope and cost changes noted above result in a net RTEP cost increase of $3,512.39 million.

B. Cost Responsibility Assignment Change

PJM staff requests the Board's approval of a correction to the cost responsibility assignment for a single July 2026 Board-approved RTEP project (approximately $1.37 million).

Following the Board's approval of the July 2026 RTEP update, Planning identified an error in the cost responsibility assignment for one of the approved projects (b3800.55). Project b3800.55 which is a solution to replace terminal equipment at Rock Springs with an estimated cost of $1.37 million.

The error occurred because the project was inadvertently allocated as 100% PECO, but the host zone was later identified as DPL. As a result, the cost responsibility assignment approved by the Board (100% allocation to PECO) was incorrect. The correct cost responsibility assignment is **100% to DPL, rather than PECO**.

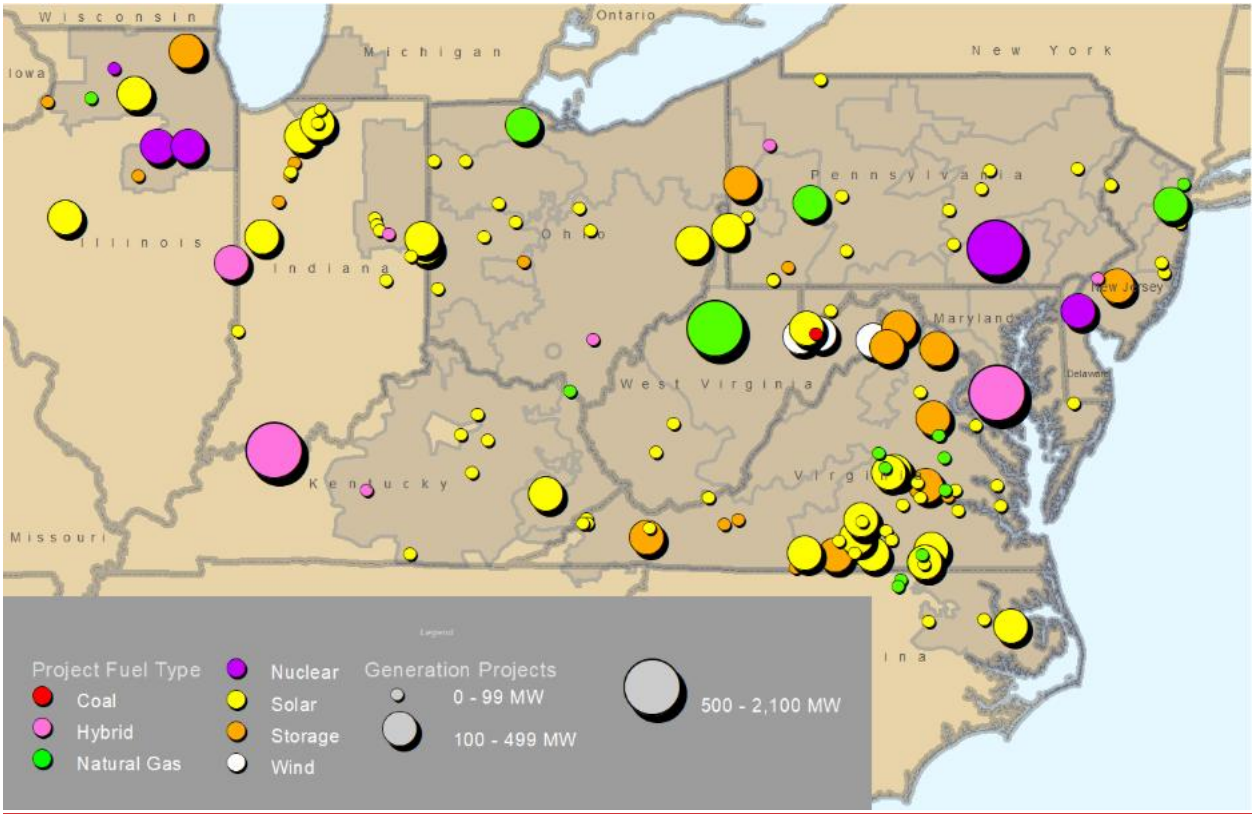
The request does not affect the Board's approval of the project itself, or any other aspect of the July 2026 RTEP. It is limited to correcting the cost responsibility assignment for this project.

IV. Interconnection New Service Requests

Throughout 2026, PJM has continued to study New Service Requests. These studies evaluate the impact of the New Service Request and include an evaluation of new generation interconnections, increases in generation at existing stations, long-term firm transmission service requests and merchant transmission interconnection requests.

These studies were last reviewed with the Board Reliability Committee in December of 2025. Since that time, PJM has completed 270 System Impact Studies, and 615 New Service Requests have withdrawn. New projects with signed Generation Interconnection Agreements (GIAs), project scope changes and project cancellations have resulted in a net increase of $1.249 billion for network upgrades. The map below shows the locations of the new units associated with the completed interconnection System Impact Studies along with the fuel type and relative size. A listing of the projects with System Impact Study reports issued in 2026 is provided in Attachment C. A listing of the newly securitized Network Upgrades in 2026 is shown in Attachment D. The cost for the Network Upgrades associated with these interconnection projects is the responsibility of the Project Developer.

Completed Interconnection System Impact Studies



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

The project needs and recommended solutions discussed in this report were reviewed with stakeholders during 2026, most recently at the October and November 2026 TEAC meetings. In addition to receiving verbal feedback and comments during the relevant meetings, written comments were requested to be submitted to PJM to communicate any concerns with project recommendations.

VI. Cost Allocation

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

Cost allocations are calculated in accordance with Schedule 12 of the Open Access Transmission Tariff. 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.

VII. 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 November 17, 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
b3800.55	Replace terminal equipment at Rock Springs 500 kV to increase the rating of the Bramah/North Delta-Rock Springs circuit to match the conductor rating.	$1.37	EPRS	DPL (100.00%)	6/1/2027

Attachment B – Interconnection New Service Requests With System Impact Study Reports Issued

Transmission Owner	Queue Position	Fuel Type	MW Capacity (FTIR/FTWR)	MW Energy (nFTIR/nFTWR)
AEC	AG2-297	Solar	11.40	19.00
AEC	AG2-616	Solar	32.35	50.00
AEC	AH1-260	Storage	300.00	300.00
AEC	AH1-641	Solar	7.00	15.00
AEC	AH1-701	Other	20.00	0.00
AEP	AG2-014	Storage	20.00	50.00
AEP	AG2-029	Solar	32.50	250.00
AEP	AG2-072	Natural Gas, Other, Hybrid	700.00	700.00
AEP	AG2-082	Solar	133.40	200.00
AEP	AG2-104	Solar	126.85	200.00
AEP	AG2-106	Storage	150.00	0.00
AEP	AG2-107	Storage	150.00	0.00
AEP	AG2-126	Solar, Storage, Hybrid	90.00	150.00
AEP	AG2-152	Solar	79.00	131.00
AEP	AG2-163	Solar	35.00	250.00
AEP	AG2-184	Solar	126.00	210.00
AEP	AG2-191	Solar	18.00	30.00
AEP	AG2-192	Solar	11.40	19.00
AEP	AG2-230	Solar	90.00	150.00
AEP	AG2-245	Solar	126.00	210.00
AEP	AG2-248	Storage	0.00	100.00
AEP	AG2-272	Storage	21.30	55.00
AEP	AG2-289	Storage	0.00	66.60
AEP	AG2-290	Storage	0.00	38.40

Transmission Owner	Queue Position	Fuel Type	MW Capacity (FTIR/FTWR)	MW Energy (nFTIR/nFTWR)
AEP	AG2-329	Storage	156.00	200.00
AEP	AG2-332	Storage	100.00	100.00
AEP	AG2-343	Storage	78.00	100.00
AEP	AG2-345	Storage	39.00	50.00
AEP	AG2-360	Storage	250.00	250.00
AEP	AG2-370	Storage	20.00	50.00
AEP	AG2-401	Solar	44.00	0.00
AEP	AG2-405	Solar	10.98	0.00
AEP	AG2-406	Solar	10.98	0.00
AEP	AG2-487	Solar	10.60	0.00
AEP	AG2-491	Solar	60.00	100.00
AEP	AG2-492	Storage	20.00	50.00
AEP	AG2-518	Storage	32.00	80.00
AEP	AG2-519	Solar, Storage, Hybrid	66.50	66.50
AEP	AG2-548	Solar, Storage, Hybrid	54.00	80.00
AEP	AG2-550	Solar	60.00	100.00
AEP	AG2-551	Storage	20.00	50.00
AEP	AG2-562	Natural Gas	0.00	52.00
AEP	AG2-568	Solar	48.00	80.00
AEP	AG2-637	Solar	90.00	150.00
AEP	AG2-657	Solar	37.80	90.00
AEP	AG2-665	Solar, Storage, Hybrid	54.00	80.00
AEP	AH1-059	Solar	12.60	21.00
AEP	AH1-072	Solar	12.00	20.00
AEP	AH1-073	Solar	12.00	20.00
AEP	AH1-098	Solar	24.00	40.00
AEP	AH1-133	Solar	29.40	70.00
AEP	AH1-144	Solar	29.40	70.00
AEP	AH1-145	Storage	80.00	80.00
AEP	AH1-153	Solar	30.00	50.00
AEP	AH1-188	Solar	84.00	140.00
AEP	AH1-227	Solar	30.78	51.30
AEP	AH1-269	Storage	50.00	50.00
AEP	AH1-272	Solar	123.90	185.00
AEP	AH1-282	Solar	45.90	49.90
AEP	AH1-292	Solar	44.00	0.00
AEP	AH1-302	Storage	75.00	75.00

Transmission Owner	Queue Position	Fuel Type	MW Capacity (FTIR/FTWR)	MW Energy (nFTIR/nFTWR)
AEP	AH1-304	Solar	9.80	0.00
AEP	AH1-305	Solar	35.72	0.00
AEP	AH1-306	Solar	28.80	0.00
AEP	AH1-314	Storage	100.00	100.00
AEP	AH1-327	Solar	8.44	0.00
AEP	AH1-348	Solar	6.00	10.00
AEP	AH1-392	Solar	60.00	90.00
AEP	AH1-461	Storage	80.00	80.00
AEP	AH1-482	Storage	78.00	78.00
AEP	AH1-535	Solar, Storage, Hybrid	40.00	100.00
AEP	AH1-580	Solar	134.00	200.00
AEP	AH1-617	Solar	120.00	200.00
AEP	AH1-661	Other	9.06	10.07
AEP	AH1-686	Natural Gas	21.00	24.00
AEP	AH1-704	Natural Gas	20.00	24.00
AEP	AH1-719	Natural Gas	21.00	24.00
APS	AG2-062	Wind	21.61	147.00
APS	AG2-288	Storage	150.00	150.00
APS	AG2-300	Storage	70.00	100.00
APS	AG2-423	Solar	48.00	80.00
APS	AG2-429	Solar, Storage, Hybrid	46.50	46.50
APS	AG2-448	Solar	30.00	50.00
APS	AG2-582	Natural Gas	2075.00	2100.00
APS	AH1-206	Storage	60.00	60.00
APS	AH1-247	Solar	24.00	40.00
APS	AH1-248	Solar	15.00	25.00
APS	AH1-249	Storage	80.00	80.00
APS	AH1-254	Wind	36.54	171.40
APS	AH1-283	Solar	120.00	200.00
APS	AH1-387	Wind	22.05	150.00
APS	AH1-452	Solar	8.35	19.90
APS	AH1-545	Solar	20.00	200.00
APS	AH1-734	Natural Gas	268.60	270.30
ATSI	AG2-057	Solar	6.00	10.00
ATSI	AG2-109	Solar	28.10	40.00
ATSI	AG2-119	Solar	53.60	80.00
ATSI	AG2-236	Solar	2.00	20.00

Transmission Owner	Queue Position	Fuel Type	MW Capacity (FTIR/FTWR)	MW Energy (nFTIR/nFTWR)
ATSI	AG2-621	Storage	150.00	150.00
ATSI	AH1-060	Solar	12.00	20.00
ATSI	AH1-542	Solar, Storage, Hybrid	22.00	110.00
ATSI	AH1-680	Natural Gas	1300.00	1300.00
ATSI	AH1-699	Natural Gas	69.00	58.00
ATSI	AH1-706	Natural Gas	23.82	30.45
ATSI	AH1-711	Natural Gas	292.50	408.20
BGE	AG2-617	Solar	33.00	55.00
BGE	AH1-261	Storage	135.00	135.00
BGE	AH1-725	Storage	500.00	500.00
ComEd	AG2-061	Storage	20.00	50.00
ComEd	AG2-114	Solar	60.00	100.00
ComEd	AG2-363	Solar	180.00	300.00
ComEd	AG2-364	Solar	120.00	200.00
ComEd	AG2-453	Solar	196.00	280.00
ComEd	AG2-516	Solar	72.00	120.00
ComEd	AG2-524	Solar, Storage, Hybrid	110.00	110.00
ComEd	AG2-544	Storage	80.00	200.00
ComEd	AG2-545	Storage	160.00	400.00
ComEd	AG2-585	Solar	33.00	55.00
ComEd	AG2-660	Storage	20.00	0.00
ComEd	AG2-675	Storage	32.00	80.00
ComEd	AH1-044	Solar	120.00	200.00
ComEd	AH1-150	Solar	120.00	200.00
ComEd	AH1-151	Solar	120.00	200.00
ComEd	AH1-165	Storage	0.00	72.00
ComEd	AH1-196	Solar	90.00	150.00
ComEd	AH1-338	Solar	23.40	180.00
ComEd	AH1-341	Solar	96.60	150.00
ComEd	AH1-541	Solar, Storage, Hybrid	27.72	92.40
ComEd	AH1-543	Solar, Storage, Hybrid	31.48	157.40
ComEd	AH1-563	Natural Gas, Storage, Hybrid	150.00	150.00
ComEd	AH1-564	Natural Gas, Storage, Hybrid	150.00	150.00
ComEd	AH1-567	Natural Gas	5.00	5.00
ComEd	AH1-673	Storage	85.00	85.00
ComEd	AH1-698	Nuclear	57.60	130.00
ComEd	AH1-702	Nuclear	43.00	88.00

Transmission Owner	Queue Position	Fuel Type	MW Capacity (FTIR/FTWR)	MW Energy (nFTIR/nFTWR)
ComEd	AH1-714	Nuclear	174.10	169.00
ComEd	AH1-718	Natural Gas	38.00	11.00
DAYTON	AG2-125	Solar	15.44	0.00
DAYTON	AG2-216	Solar	25.92	0.00
DAYTON	AH1-328	Solar	21.30	0.00
DL	AG2-037	Solar	2.82	4.70
Dominion	AG2-049	Other	20.00	20.00
Dominion	AG2-068	Solar	60.00	100.00
Dominion	AG2-069	Solar	90.00	150.00
Dominion	AG2-077	Solar	120.00	200.00
Dominion	AG2-086	Solar, Storage, Hybrid	45.00	75.00
Dominion	AG2-088	Storage	150.00	150.00
Dominion	AG2-095	Solar	10.80	18.00
Dominion	AG2-121	Storage	0.00	0.00
Dominion	AG2-124	Solar	33.34	0.00
Dominion	AG2-151	Solar	60.00	100.00
Dominion	AG2-171	Solar	36.00	60.00
Dominion	AG2-182	Solar	133.33	200.00
Dominion	AG2-193	Solar	12.00	20.00
Dominion	AG2-198	Solar	48.00	80.00
Dominion	AG2-213	Solar	48.00	80.00
Dominion	AG2-238	Storage	0.00	0.00
Dominion	AG2-240	Storage	0.00	0.00
Dominion	AG2-262	Solar	6.60	11.00
Dominion	AG2-270	Storage	105.00	150.00
Dominion	AG2-339	Storage	85.00	85.00
Dominion	AG2-341	Storage	20.00	50.00
Dominion	AG2-369	Solar	51.60	86.00
Dominion	AG2-382	Solar	42.00	70.00
Dominion	AG2-384	Storage	24.00	60.00
Dominion	AG2-426	Solar, Storage, Hybrid	33.50	33.50
Dominion	AG2-436	Solar	140.00	350.00
Dominion	AG2-440	Solar	45.00	75.00
Dominion	AG2-441	Solar	67.80	113.00
Dominion	AG2-442	Solar	84.00	140.00
Dominion	AG2-522	Solar	48.00	80.00
Dominion	AG2-566	Storage	12.00	30.00

Transmission Owner	Queue Position	Fuel Type	MW Capacity (FTIR/FTWR)	MW Energy (nFTIR/nFTWR)
Dominion	AG2-570	Solar	100.00	400.00
Dominion	AG2-571	Storage	40.00	100.00
Dominion	AG2-581	Solar	90.00	150.00
Dominion	AG2-583	Solar	69.00	115.00
Dominion	AG2-659	Solar	48.00	80.00
Dominion	AG2-661	Solar, Storage, Hybrid	20.00	0.00
Dominion	AH1-033	Solar	13.00	19.50
Dominion	AH1-040	Solar	90.00	150.00
Dominion	AH1-071	Solar	12.00	20.00
Dominion	AH1-091	Storage	0.00	0.00
Dominion	AH1-106	Solar	15.60	26.00
Dominion	AH1-107	Solar	15.60	26.00
Dominion	AH1-108	Natural Gas	9.00	0.00
Dominion	AH1-138	Solar	8.40	20.00
Dominion	AH1-170	Solar	12.00	20.00
Dominion	AH1-216	Solar, Storage, Hybrid	79.20	99.00
Dominion	AH1-221	Storage	45.00	0.00
Dominion	AH1-223	Storage	20.00	0.00
Dominion	AH1-251	Storage	50.00	50.00
Dominion	AH1-263	Storage	200.00	200.00
Dominion	AH1-271	Solar	24.00	40.00
Dominion	AH1-280	Solar	12.00	20.00
Dominion	AH1-311	Solar	2.25	0.00
Dominion	AH1-343	Solar	41.40	69.00
Dominion	AH1-345	Solar	8.40	14.00
Dominion	AH1-396	Solar	1.80	11.89
Dominion	AH1-397	Solar	2.97	19.67
Dominion	AH1-399	Solar	1.48	9.87
Dominion	AH1-439	Solar	51.00	85.00
Dominion	AH1-528	Solar	180.00	300.80
Dominion	AH1-546	Solar	39.00	65.00
Dominion	AH1-637	Solar	9.60	16.00
Dominion	AH1-677	Natural Gas	67.00	0.00
Dominion	AH1-678	Natural Gas	34.00	0.00
Dominion	AH1-679	Natural Gas	20.00	20.00
Dominion	AH1-681	Natural Gas	27.30	0.00
Dominion	AH1-682	Natural Gas	21.00	0.00

Transmission Owner	Queue Position	Fuel Type	MW Capacity (FTIR/FTWR)	MW Energy (nFTIR/nFTWR)
Dominion	AH1-683	Natural Gas	25.00	0.00
Dominion	AH1-684	Natural Gas	23.00	0.00
Dominion	AH1-685	Natural Gas	26.00	0.00
Dominion	AH1-687	Natural Gas	51.00	0.00
Dominion	AH1-691	Natural Gas	26.00	0.00
Dominion	AH1-692	Natural Gas	26.00	0.00
Dominion	AH1-693	Natural Gas	20.00	0.00
Dominion	AH1-694	Natural Gas	18.00	0.00
Dominion	AH1-696	Natural Gas	94.00	0.00
Dominion	AH1-712	Natural Gas	611.00	776.00
Dominion	AH1-713	Coal	14.00	0.00
Dominion	AH1-716	Storage	650.00	650.00
Dominion	AH1-723	Natural Gas	712.00	776.00
Dominion	AH1-727	Storage	425.00	425.00
DPL	AG2-380	Storage	20.00	20.00
DPL	AG2-447	Solar	12.00	20.00
DPL	AH1-057	Solar	3.00	7.20
DPL	AH1-672	Solar	44.00	68.00
EKPC	AG2-073	Solar	50.88	53.00
EKPC	AG2-081	Solar	18.00	30.00
EKPC	AG2-298	Solar	23.33	35.00
EKPC	AG2-424	Solar, Storage, Hybrid	34.95	63.25
EKPC	AH1-004	Solar	24.00	40.00
EKPC	AH1-239	Solar	48.00	80.00
EKPC	AH1-570	Solar	15.60	25.00
EKPC	AH1-571	Solar	12.50	20.00
EKPC	AH1-664	Solar	66.80	100.00
EKPC	AH1-665	Solar	53.50	80.00
EKPC	AH1-666	Solar	48.00	80.00
EKPC	AH1-721	Natural Gas	758.95	786.00
JCPL	AG2-016	Solar	8.32	19.80
JCPL	AG2-625	Solar	8.23	19.60
JCPL	AG2-626	Solar	5.25	12.50
JCPL	AH1-054	Solar	3.47	8.25
JCPL	AH1-257	Solar	8.09	19.25
JCPL	AH1-258	Solar	8.09	19.25
JCPL	AH1-334	Solar	8.09	19.25

Transmission Owner	Queue Position	Fuel Type	MW Capacity (FTIR/FTWR)	MW Energy (nFTIR/nFTWR)
ME	AH1-695	Nuclear	803.00	859.00
OVEC	AH1-055	Solar	154.00	220.00
OVEC	AH1-537	Solar	17.85	178.50
PENELEC	AG2-176	Solar	90.00	150.00
PENELEC	AG2-200	Solar	9.18	15.30
PENELEC	AG2-356	Solar	12.00	20.00
PENELEC	AG2-411	Solar	40.70	63.00
PENELEC	AG2-420	Solar, Storage, Hybrid	14.00	25.00
PENELEC	AG2-561	Solar	12.00	20.00
PENELEC	AH1-460	Solar	39.60	66.00
PENELEC	AH1-667	Solar	10.80	18.00
PENELEC	AH1-746	Wind	20.00	0.00
PEPCO	AG2-618	Solar	71.50	110.00
PEPCO	AH1-552	Solar, Storage, Hybrid	670.20	670.20
PEPCO	AH1-744	Natural Gas	48.29	53.50
PPL	AG2-074	Solar	26.20	38.00
PPL	AG2-166	Solar	0.00	10.00
PPL	AG2-479	Solar	4.10	0.00
PPL	AG2-481	Solar	4.10	0.00
PPL	AG2-484	Solar	4.60	0.00
PSEG	AH1-703	Natural Gas	51.25	35.61
PSEG	AH1-710	Nuclear	228.20	256.80
PSEG	AH1-715	Natural Gas	149.37	127.17
PSEG	AH1-722	Natural Gas	158.10	130.40

Attachment D – Interconnection Network Upgrades

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n6605	Wreck and rebuild 0.99 miles of line 271 between Pocaty and Landstown with two 768 ACSS (20/7) "MAUMEE" conductor @ 250 degrees C. Replace the line lead at Landstown.	6.5558	12/31/2026
n6639.2	Replace existing 345 kV line conductor and possibly tower structures for approx. 27 miles. Sag mitigation on existing 345 kV line conductor for up to 13 miles. Upgrade station 345 kV conductor and motor operated switches. Upgrade 345 kV relay scheme at one terminal substation. Tower work and cost will be identified during the Facilities Study Phase.	146.0000	2/15/2029
n7175	EKPC to construct a new 138 kV switching station (Three Forks tap switching) to facilitate connection of the Madison solar generation project.	3.5700	12/31/2028
n7176	EKPC to construct facilities (~125 feet) to loop the existing Dale-Fawkes 138 kV line section into the new Three Forks tap switching substation and reroute the existing Three Forks distribution 138 kV Line (~900 feet) into the new Three Forks tap switching station.	0.8200	12/31/2028
n7177	EKPC to upgrade relays and modify relay settings at Dale substation for existing line to Three Forks tap switching substation.	0.0900	12/31/2028
n7178	EKPC to upgrade relays and modify relay settings at Fawkes substation for existing line to Three Forks tap switching substation.	0.0900	12/31/2028
n7179	EKPC to install OPGW on the Fawkes-Three Forks tap 138 kV line section (3.6 miles).	0.6350	12/31/2028
n7553	Replace Northern Neck 115/230 kV transformer No. 6 with a 224 MVA (260/271/295 MVA).	7.2423	12/31/2029
n8205.1	Build a three breaker AF2-222 115 kV switching station.	7.9720	10/14/2027
n8205.2	Rearrange line No. 154 to loop into and out of the new three-breaker AF2-222 115 kV switching station.	3.9800	10/14/2027
n8213.1	Rearrange line No. 65 to loop into and out of the new three-breaker AG1-135 115 kV switching station.	2.8250	3/11/2026
n8213.2	Build a three-breaker AG1-135 115 kV switching station.	7.9950	2/24/2026
n8213.3	Remote protection and communication work.	0.3050	3/3/2026
n8218	Add fourth breaker to interconnection switchyard.	0.8440	1/8/2026
n8282	Install one new interconnect at Chesterfield 230 kV station.	3.7480	6/30/2027
n8316	AG1-153 breaker addition	-3.3930	6/28/2030
n9101	L1 8806-Brokaw-AB2-070-AC1-053 345 kV line – Mitigate sag on the line.	15.0000	12/15/2030
n9107	Replace 477 KCM station conductor at Moore Park.	0.1500	1/31/2029
n9116	Rebuild approximately 11 miles of the Homer City-Shelocta 230 kV line with double-bundled 795 kcmil 26/7 ACSS conductor.	39.3122	9/1/2028

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9119	Reconductor/rebuild the Shelocta-Keystone 230 kV line, approximately 2.5 miles, with 1272 kcmil 45/7 ACSR 2-conductor.	9.5336	1/1/2028
n9153	Wreck and rebuild 5.74 miles of 230 kV line 2128 between Fentress and Thrasher with two 768.2 ACSS/TW (20/7) "MAUMEE" conductor @ 250 degrees C and replace line lead at Fentress.	33.2972	7/1/2027
n9195	Install a new 345 kV circuit breaker at station 12 Dresden.	5.0000	11/30/2029
n9207	Replace 6ELMONT 230 kV to 8ELMONT 500 kV circuit 1 with larger transformer (3-480 MVA single phase transformer).	38.2545	12/31/2028
n9217	Wreck and rebuild 12.73 miles of 230 kV line 298 from Buckingham to Farmville with dual two 768 ACSS/TW (20/7) "MAUMEE" conductor @ 250 degrees C.	40.4148	11/1/2029
n9220	Wreck and rebuild 15.41 miles of 230 kV line 298 from Buckingham to Bremo with dual two 768.2 ACSS/TW (20/7) "MAUMEE" conductor @ 250 degrees C. Replace line lead at Bremo.	44.4659	1/1/2029
n9225	Replace 230 kV substation conductor and line drops at Shelocta substation for the Homer City-Shelocta 230 kV line terminal.	0.1076	2/1/2027
n9259	Need for two 230 kV gas-insulated switchgear ("GIS") bus ties for Coastal Virginia Offshore Wind ("CVOW").	25.3049	1/1/2030
n9267	Construct new 10.5-mile 115 kV line between Northern Neck and Moon Corner (AE1-155 tap).	45.7301	10/1/2029
n9323	Remote relay at Stone Mill substation.	0.2886	6/9/2028
n9324	Transmission line tie-in for new single-breaker tap switching station for AE2-185 and AF2-404.	1.2576	6/9/2028
n9325	Extend existing distribution power 3 miles to tie in the auxiliary power for the new interconnection substation.	2.2770	12/31/2030
n9326	Build new fiber path (estimated ~4 miles) from TSS 934 Herman Road substation to existing fiber at TSS 155 Nelson substation and new fiber path (estimated ~4 miles) from TSS 934 Herman Road substation to existing fiber at TSS 111 Electric Junction substation.	4.9311	12/31/2030
n9327	Cut the Nelson-Electric Junction 345 kV line to loop into the new TSS 934 Herman Road interconnection substation.	6.4608	12/31/2030
n9328	Perform relay upgrades at TSS 111 Electric Junction substation.	0.7582	12/31/2030
n9329	Perform relay upgrades at TSS 120 Lombard substation.	0.2662	12/31/2030
n9330	Perform relay upgrades at TSS 155 Nelson substation.	0.7582	12/31/2030

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9331	Install new Integrated Communications Optical Network (ICON) nodes at four remote-end substations: STA 6 Byron, TSS 144 Wayne, TSS 937 Lee County and TSS 113 Waterman.	0.4074	12/31/2030
n9332	Extend existing distribution power 2 miles to tie in the auxiliary power for the new interconnection substation.	1.4931	6/1/2029
n9333	Build new fiber path (estimated ~7.5 miles) from TSS 971 Prairie to TSS 123 Marengo substation existing fiber and new fiber path (estimated ~5.5 miles) from TSS 971 Prairie to Garden Prairie area existing fiber.	6.8177	6/1/2029
n9334	Perform relaying upgrades at TSS156 Cherry Valley.	0.3063	6/1/2029
n9335	Perform relaying upgrades at TSS138 Silver Lake.	0.3063	6/1/2029
n9336	Cut the TSS 156 Silver Lake-TSS 138 Cherry Valley 345 kV line to loop into the new TSS 971 Prairie substation.	8.1989	6/1/2029
n9337	Fiber multiplexer installation at six remote substations: TSS 155 Nelson, TSS 937 Lee County, STA 6 Byron, TSS 144 Wayne, TSS 111 Electric Junction, TSS 113 Waterman	0.7972	9/30/2029
n9338	Extend existing distribution power no more than 1 mile to tie in the auxiliary power for the new interconnection substation.	0.7293	9/30/2029
n9339	Build new fiber path (estimated ~9 miles) from TSS 953 Renner Road to TSS 155 Nelson substation existing fiber and new fiber path (estimated ~4 miles) from TSS 953 Renner Road to TSS 937 Lee County substation existing fiber.	13.9503	9/30/2029
n9340	Perform relaying upgrades at TSS 937 Lee County substation.	0.6796	9/30/2029
n9341	Perform relaying upgrades at TSS 155 Nelson substation.	0.6796	9/30/2029
n9342	Cut the L15501 transmission line to loop into the new TSS 953 Renner Road substation.	8.0998	9/30/2029
n9348	Proposed AF1-119 345 kV station: Review and revise the protective relay settings to account for the additional generation of AG1-433.	0.0608	10/29/2027
n9349	Remote relay work at Chesapeake substation.	0.1730	12/1/2027
n9350	Expand existing Yadkin substation.	7.8514	12/1/2027
n9351	Build a new 115 kV three-breaker ring switching station located along VEPCO's existing 115 kV No. 31 line from Altavista substation to Perth substation.	11.5680	7/10/2028
n9352	Rearrange line No. 31 to loop into and out of the new three-breaker AE2-291 115 kV switching station.	3.6184	7/10/2028
n9353	Remote relay at substation Perth	0.1814	7/10/2028
n9354	Remote relay at substation Otter River	0.1289	7/10/2028
n9355	Remote relay at substation Altavista	0.1761	7/10/2028
n9367	Perform relay upgrades at STA4 Quad Cities station.	0.4136	3/15/2029

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9368	The existing 345 kV line L0403 will be rerouted to accommodate the expansion of TSS 940 Cordova.	4.2267	3/15/2029
n9369	Expand existing 345 kV TSS 940 Cordova station from a bus ring switchyard to the ultimate breaker-and-a-half bus configuration.	28.5953	3/15/2029
n9370	Proposed AF1-119 345 kV station: Expansion • Install one new 345 kV, 5000A 63 kA circuit breaker and associated control relaying. • Install two new 3000A breaker disconnect switches. • Install three single-phase surge arresters on the generation lead to the proposed AF2-388 collector station. • Associated bus work, bus supports, jumpers, insulators, grounding, SCADA (Supervisory Control and Data Acquisition) connectivity, structures and foundations	1.3829	10/29/2027
n9378	Replace existing Carson transformer 2 with 3-480 MVA single-phase transformer.	37.8013	12/31/2029
n9379	Replace existing 230/500 kV T1 XFRM at Midlothian with 3-480 MVA single-phase XFRM.	37.8363	12/31/2029
n9380	Replace existing Ladysmith XFRM 1 with 3-480 MVA single-phase XFRM.	37.5876	12/31/2029
n9393	Timber Switch 138 kV: Review and revise the protective relay settings to account for the additional generation of AF2-376.	0.0608	5/15/2029
n9394	Proposed AG1-410 345 kV station: Review and revise the protective relay settings at the AG1-410 proposed 345 kV station to account for the additional generation.	0.0608	2/15/2030
n9399	Remote relay at Moon Corner substation (including fiber)	0.3074	2/24/2026
n9408	Remote relay work at Finneywood substation	0.1358	6/1/2032
n9409	Remote relay work at Clover substation	0.1781	6/1/2032
n9410	Rearrange line No. 556 to loop into and out of the new three-breaker AF2-042 500 kV switching station.	9.2365	6/1/2032
n9411	Build a new 500 kV three-breaker ring switching station located along Dominion's existing 500 kV, 556 line from Clover substation to Finneywood substation.	26.7413	6/1/2032
n9413	Remote relay at Lone Pine substation	0.1864	11/10/2028
n9414	Remote relay at Dennisville Road substation	0.1442	11/10/2028
n9415	Rearrange line No. 1007 to loop into and out of the new three-breaker AF1-294/AF2-115/AG1-021 115 kV switching station (including fiber).	3.7816	11/10/2028
n9416	Rearrange line #TBD to loop into and out of the new three-breaker AG1-285 230 kV switching station.	6.0291	3/1/2031

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9417	Build a new 230 kV three-breaker ring switching station located along VEPCO's new 230 kV line from Farmville substation to Finneywood substation.	12.9251	3/1/2031
n9419	Interconnection substation tie-in	1.9572	3/31/2030
n9429	Rearrange line No. 35 to loop into and out of the new AE2-283 single-breaker 69 kV tap.	3.5215	12/1/2030
n9432	Expand the existing Moyock 230 kV substation by adding one new circuit breaker.	3.6630	1/31/2031
n9452	Fiber Installation from TSS 956 Rimsnider Rd to TSS 113 Waterman.	2.2774	12/31/2029
n9453	Aux Power	1.5625	12/31/2029
n9454	Perform relay and communication upgrades at TDC 569 Sugar Grove 138 kV.	0.4023	12/31/2029
n9455	Perform relay and communication upgrades at TSS 113 Waterman 138 kV.	0.4057	12/31/2029
n9456	Cut existing L11106 138 kV transmission line between existing structures 245 and 246 to loop into the new TSS 956 Rimsnider Road substation and break into new L95602.	3.0323	12/31/2029
n9460	Remote relay at Mount Laurel substation	0.1205	12/10/2026
n9461	Remote relay at Clay Mills substation	0.0519	12/10/2026
n9462	Remote relay at Chase City substation	0.0519	12/10/2026
n9463	Rearrange line No. 33 to loop into and out of the new three-breaker AG1-105 115 kV switching station.	3.1257	12/10/2026
n9464	Build a new 115 kV three-breaker ring switching station located along VEPCO's existing 115 kV, 33 line from Chase City substation to Clays Mill substation.	10.9346	12/10/2026
n9472	Remote-end upgrades	1.0397	1/30/2030
n9473	New interconnecting substation	12.4121	1/30/2030
n9474	Interconnecting substation tie-in	1.0157	1/30/2030
n9485	Loop existing Summer Shade-Green County 161 kV line into new interconnection switching station.	1.0410	5/30/2028
n9487	Revise relay settings at Summer Shade substation.	0.1460	5/30/2028
n9488	Revise relay settings at Greene County substation.	0.1460	5/30/2028
n9490	Install/test approximately 3.12 miles of new 48-count ADSS fiber from the AG1-548 substation control house to the nearest splice point on the Zayo-owned fiber backbone (near 41.914, -79.820). Utilize the Union City to Backbone ADSS fiber cable to create a full fiber path between AG1-548 and Union City.	0.7976	12/8/2028

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9491	Design, installation and testing/commissioning for Multiprotocol Label Switching (MPLS) equipment for Supervisory Control and Data Acquisition (SCADA) transport at AG1-548 substation, including: Crossbow engineering and materials, new All-Dielectric Self-Supporting (ADSS) fiber installation, one in-sub fiber run from AG1-548 substation control house to developer-built fiber run to support communications and control to generator site.	1.0487	12/8/2028
n9492	The Erie South-Union City 115 kV, PNT-115-RC line will be cut and looped into the new interconnection substation at a point approximately 2.8 miles from Union City substation, between structures 116 and 117.	1.3581	12/8/2028
n9493	Install new relaying and carrier equipment and modify drawings for line name change at Erie South substation.	0.9127	12/8/2028
n9494	Install new relaying and modify drawings for line name change at Union City substation.	0.6569	12/8/2028
n9495	Proposed AF2-177 345 kV, 3M 345 kV and Jay 345 kV stations: Install two station exit all dielectric loose tube (ADLT) station exit transitions and two new fiber optic cable paths consisting of a total 6.9 miles of 144 count ADLT cable installed underground in new right-of-way.	2.3777	11/15/2029
n9496	Sorenson-Desoto No. 2 345 kV circuit: Construct a new 345 kV breaker-and-a-half station, initially populated with three circuit breakers, expandable to six circuit breakers. • Three 5000A 63 kA circuit breakers with associated control relaying • Nine 3000A circuit breaker disconnect switches • Two single-phase station service voltage transformers (SSVT) • One 16' x 48' DICM • Four single-phase wave traps, two each on the line exits to the Desoto and proposed AF1-148 345 kV stations • A directional comparison blocking (DCB) protective relaying scheme for the line to the proposed AF1-148 345 kV station • A DCB protective relaying scheme for the line to the Desoto 345 kV station • Two three-phase coupling capacitor voltage transformers (CCVT), one each for the line exits to the proposed AF1-148 and Desoto 345 kV stations • Two A-frame line exit structures, one each for the line exits to the proposed AF1-148 and Desoto 345 kV stations • Associated conductors (bus work, ground grid, jumpers), telecom terminal equipment, insulators, arresters, foundations and structures	14.9206	11/15/2029

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9497	Sorenson-Desoto No. 2 345 kV circuit: Proposed AF2-177 345 kV station tie-in; Remove two tower structures (No. 419 and No. 421) along with approximately 0.4 miles of existing wire. • Install two new 150' custom steel, single-circuit, single-pole dead-end structures on concrete piers with anchor bolt cages along the existing Sorenson-Desoto No. 2 345 kV circuit. • Install two new 130' custom steel, single-circuit, single-pole, running angle structures on concrete piers with anchor bolt cages along the perimeter of the proposed AF2-177 345 kV station. • Install four spans of double-bundle aluminum conductor steel-reinforced (ACSR) 2156 (Bluebird) transmission line conductor with 12/7 Guinea shield wire.	2.8558	11/15/2029
n9498	Proposed AF1-148 345 kV station: Review and revise the protective relay settings.	0.0608	11/15/2029
n9499	Desoto 345 kV station: Review and revise the protective relay settings.	0.0608	11/15/2029
n9500	Jay 345 kV station: Reconfigure the existing ethernet switch, installing one new Small Form-Factor Pluggable (SFP) transceiver.	0.0701	11/15/2029
n9501	3M 345 kV station: Reconfigure the existing ethernet switch, installing one new Small Form-Factor Pluggable (SFP) transceiver.	0.0701	11/15/2029
n9502	Proposed AF2-177 345 kV, 3M 345 kV and Jay 345 kV stations: Final tie in for fiber installation in new right of way	0.3786	11/15/2029
n9510	Install new overhead optical ground wire (OPGW) on the existing Wayne County-Massingale Road and Massingale Road-Summer Shade 69 kV line sections for a total of 44.2 miles.	5.4570	12/15/2028
n9511	Loop existing Upchurch Tap-Wayne County 69 kV line into new interconnection switching station.	0.5540	12/15/2028
n9512	Revise relay settings at Wayne County substation.	0.0630	12/15/2028
n9513	Revise relay settings at Summer Shade substation.	0.0630	12/15/2028
n9514	Massingale Road substation: Construct new 69 kV switching station.	7.0500	12/15/2028
n9521	Install equipment for anti-islanding scheme at Union City substation.	0.4737	12/8/2028
n9522	Install equipment for anti-islanding scheme at Titusville substation.	0.3503	12/8/2028
n9523	Install equipment for anti-islanding scheme at Erie South substation.	0.2999	12/8/2028

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9524	Install equipment for anti-islanding scheme at Grandview substation.	0.2999	12/8/2028
n9534	Riverville-Gladstone 138 kV and proposed AG1-124 138 kV switching station: Final tie-in for Fiber installation	0.3610	3/15/2030
n9535	Proposed AG1-124 138 kV switching station: Install two station exit transitions and two new fiber optic cable paths, one consisting of 0.3 miles of underground 144 count ADLT cable and the other consisting of 0.1 miles of optical ground wire (OPGW) fiber optic shield wire.	0.4280	3/15/2030
n9536	Riverville-Gladstone 138 kV circuit: Proposed AG1-124 138 kV switching station tie-in. Install two new steel, 75', double-circuit, two-pole dead-end structures on concrete piers with anchor bolt cages, and three spans of ACSR 795 26/7 (Drake) transmission line conductor with 7#8 Alumoweld shield wire in the existing Riverville-Gladstone 138 kV right-of-way, cutting in the proposed AG1-124 138 kV station in an in-and-out arrangement from an existing structure.	1.7549	3/15/2030
n9537	Riverville-Gladstone 138 kV circuit: Construct a new 138 kV ring bus station; initially populated with three circuit breakers, expandable to four breakers. • Three 138 kV 40 kA circuit breakers with associated control relaying • One 16' x 27' DICM • Six breaker disconnect switches • Three line disconnect motor-operated air breaker (MOAB) switches with associated control relaying, one each on the line exits to the AG1-124 collector, Gladstone 138 kV and Riverville 138 kV stations • Six single-phase CCVTs, three each on the line exits to the Riverville and Gladstone 138 kV stations • Two single-phase station service voltage transformers (SSVT) • Two Monopole dead-end take-off structures, one each for the line exits to Riverville and Gladstone 138 kV stations • A direct fiber current differential line protection relay scheme for the line to the Riverville 138 kV station • A direct fiber current differential line protection relay scheme for the line to the Gladstone 138 kV station • Associated conductors (bus work, ground grid, jumpers), telecom terminal equipment, insulators, arresters, foundations and structures	7.5325	3/15/2030
n9539	Relay and SCADA updates	0.0652	3/31/2029

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9541	Valley 138 kV station: Review and revise the protective relay settings to account for the additional generation.	0.0608	1/31/2029
n9542	Build new fiber path (estimated ~6.5 miles) from TSS 978 Miller Road substation to TDC 527 Plano West and new fiber (estimated ~5.5 miles) from TSS 978 Miller Road substation to Sta 1 LaSalle substation.	6.7569	2/28/2030
n9543	Perform relay upgrades at TSS 146 Sandwich substation.	0.1704	2/28/2030
n9544	Perform relay upgrades at TSS 167 Plano substation.	0.6891	2/28/2030
n9545	Perform relay upgrades at TDC 527 Plano West substation.	0.9422	2/28/2030
n9546	Cut L14609 138 kV line to loop into the new TSS 978 Miller Road interconnection substation.	5.8838	2/28/2030
n9547	Construct a new 138 kV breaker-and-a-half interconnection substation, TSS 978 Millller Road, tapping the L.14609 138 kV line.	26.8763	2/28/2030
n9556	Valley 138 kV station: Retermination of the Stinger circuit in the Valley 138 kV station: • Remove the existing Stinger-Valley 138 kV circuit connection to the Valley 138 kV station by removing one existing 65 ft. wood pole structure (No. 285) and one span of line conductor with shield wire. • Install one new custom 80 ft. steel, single-circuit, single-pole dead-end structure on a concrete foundation with an anchor bolt cage. • Install one span of ACSR 1033.5 54/7 (Curlew) transmission line conductor with 7#8 Alumoweld shield wire for the new Stinger line exit.	0.5770	1/31/2029

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9557	Valley 138 kV station: Expansion of station: • One new 3000A 138 kV 40 kA circuit breaker (breaker "Q") with breaker control relaying for the Stinger circuit relocation • Two new three-phase 3000A circuit breaker disconnect switches • Three single-phase capacitor coupled voltage transformers (CCVTs) and associated structures for the Stinger circuit relocation • Three single-phase arresters and associated structures for the Stinger circuit relocation • One 16 ft. x 18 ft. DICM expansion to the existing Valley 138 kV station DICM control house • Dual fiber-based integrated communications optical network multiplexor (ICON MUX) current differential relays for the protection scheme for the reterminated Stinger circuit • Expansion of a 132' section of the Valley 138 kV station fence by 20' to the East, across from the east side of the middle box bay • Associated jumpers, insulators, grounding, fiber-optic relaying connectivity & equipment, cables, pull boxes and foundations • Protection and control settings review for the existing relays at the Valley 138 kV station and adjustment as needed	2.1665	1/31/2029
n9558	Stinger 138 kV station: • One 3000A 40 kA circuit breaker with associated control relaying • One breaker disconnect switch • Two single-phase CCVT for the line exit to the Brody 138 kV station • Expand the station by 24 ft. x 225 ft to the north. • Review and revision of the protective relay settings for the remainder of the Stinger 138 kV station. • Associated conductors (bus work, ground grid, jumpers), telecom terminal equipment, insulators, arresters, foundations and structures	2.1692	6/1/2029

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9564	Jay 138 kV substation: • Extend the north bus No. 1 to the east. • Install one new circuit breaker string with two new 3000A 138 kV 40 kA circuit breakers with associated control relaying. • Install four new 4000 A circuit breaker disconnect switches. • Expand and extend the southeast corner of the Jay substation by 170 ft. x 75 ft. to accommodate the relocated capacitor bank and associated equipment. • Relocate capacitor bank AA, circuit breaker AA and associated equipment to the south side of the Jay 138 kV Bus No. 2. • Install associated and additional bus work, bus supports, jumpers, insulators, grounding, ground grid extension, SCADA (Supervisory Control and Data Acquisition) connectivity, fiber-optic relaying connectivity & equipment, cables, pull boxes and foundations • Review and revise the protective relay settings for the remainder of the Jay 138 kV substation to account for the addition of the new circuit breakers and the AF2-068 generation source.	1.4836	10/15/2028
n9565	Upgrade TSS 177 Burnham substation.	7.0720	2/28/2030
n9566	Proposed AF2-359 345 kV station: Review and revise the protective relay settings at the AF2-359 proposed 345 kV station to account for the additional generation of AG1-447. • Settings will need to be revised for each generation project (AG1-436 & AG1-447) unless they share an in-service date.	0.0608	10/30/2028
n9567	Proposed AF2-359 345 kV station: Review and revise the protective relay settings at the AF2-359 proposed 345 kV station to account for the additional generation of AG1-436. • Settings will need to be revised for each generation project (AG1-436 & AG1-447) unless they share an in-service date.	0.0608	10/30/2028
n9568	Fiber installation	1.5302	12/15/2030
n9569	Perform relaying upgrades at TSS 964 Clear Creek (L90302) and Sta 21 Kincaid (L2105).	0.4334	12/15/2030
n9570	Cut the STA. 21 Kincaid-Auburn Solar 345 kV line (L2105/L9032) to loop into the new TSS 903 Tovey substation.	7.4449	12/15/2030
n9571	Extend existing distribution power to tie in the auxiliary power for the new interconnection substation.	1.4915	12/15/2030
n9572	Extend distribution power to tie in the auxiliary power for the new AE1-114 interconnection substation.	3.4528	6/1/2029
n9573	Install microwave communication at TSS 923 White Eagle Road and TSS 124 Maryland substations.	2.8225	6/1/2029

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9574	Interconnection substation tie-in	3.5293	6/1/2029
n9575	Remote relay at TSS124 Maryland	0.7016	6/1/2029
n9576	Remote relay at TSS119 Lancaster	0.4858	6/1/2029
n9577	Remote relay at TSS180 Lena	0.1434	6/1/2029
n9578	Remote relay at TDC 370 Eleroy	0.1434	6/1/2029
n9579	Remote relay at ESSB-427 Titan Tire	0.1434	6/1/2029
n9580	Interconnection substation tie-in: Cut and loop Spurlock-North Clark 345 kV line into new interconnection substation with four total new guyed steel three-pole dead-end structures.	1.4490	10/30/2029
n9581	Fiber installation in existing ROW: Install overhead optical ground wire (OPGW) on the North Clark-Mason County and Mason County-Spurlock 345 kV line sections for a total of 45 miles.	6.9160	10/30/2029
n9582	Revise relay settings at Spurlock substation.	0.0570	10/30/2029
n9583	Revise relay settings at North Clark substation.	0.0570	10/30/2029
n9585	AG1-410 proposed 345 kV station: Install one station exit transition from the AG1-410 proposed 345 kV station, 0.7 miles of 96 ct all dielectric loose tube (ADLT) fiber cable in new underground right of way, and 0.6 miles of 96 ct all dielectric self-supporting fiber optic cable along existing distribution structures to a splice an existing AEP fiber cable.	0.3238	2/15/2030
n9586	Maddox Creek-RP Mone 345 kV: Install two station exit transitions and 3.05 miles of OPGW fiber cable along the existing Maddox Creek-RP Mone 345 kV circuit, terminating at the Maddox Creek 345 kV station.	0.9853	2/15/2030
n9587	Van Wert 345 kV: Reconfigure the existing integrated communications optical network at the Van Wert station, installing a new SFP transceiver.	0.0234	2/15/2030
n9588	Maddox Creek 345 kV: • Remove two single-phase line traps on the line exit to the AG1-410 proposed 345 kV station. • Replace the protective relaying scheme at the Maddox Creek 345 kV station with a dual, fiber-based integrated communications optical network multiplexor current differential scheme. • Reconfigure the existing integrated communications optical network at the Maddox Creek 345 kV station, installing a new small form-factor pluggable (SFP) transceiver.	0.4076	2/15/2030

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9589	Maddox Creek-RP Mone 345 kV: Work required for the new station tie-in. Install two steel, 150' single-circuit, single-pole dead-end structures on concrete piers with anchor bolt cages in the existing Maddox Creek-RP Mone 345 kV circuit right-of-way; two additional steel, single-circuit, single-pole dead-end structures on concrete piers with anchor bolt cages along the perimeter of the AG1-410 proposed 345 kV station; and four spans of double-bundle aluminum conductor steel-reinforced (ACSR) 954 (Cardinal) transmission line conductor with 96 fiber optical ground wire shield wire, cutting in the AG1-410 proposed 345 kV station in an in-and-out arrangement.	2.0021	2/15/2030
n9590	RP Mone 345 kV: Review and revise relay settings.	0.0608	2/15/2030
n9591	Maddox Creek-RP Mone 345 kV: Construct a new 345 kV ring bus station, initially populated with three circuit breakers, expandable to four circuit breakers, including: • Three 63 kA circuit breakers with associated control relaying • One 16' x 48' DICM • Six motorized breaker disconnect switches • Two three-phase coupling capacitor voltage transformers (CCVT), one each on the line exits to the Maddox Creek and RP Mone 345 kV stations • Two single-phase station service voltage transformers (SSVT) • Two A-Frame line exit structures, one each for the line exits to the Maddox Creek and RP Mone 345 kV stations • Two single-phase line traps for the line exit to the RP Mone 345 kV statio • Associated conductors (bus work, ground grid, jumpers), telecom terminal equipment, insulators, arresters, foundations and structures • A fiber-based integrated communications optical network multiplexor dual current differential line protective relay scheme for the line to the Maddox Creek 345 kV station • A directional comparison blocking (DCB) protective relay scheme for the line exit to the RP Mone 345 kV station • The civil work required to develop a site that accommodates the installation of the above station includes grading of a 460' x 350' pad	17.0904	2/15/2030
n9592	Proposed AG1-226, proposed AG1-237, Eugene and Dequine 345 kV stations: Final tie-in for fiber installation in new right of way	0.4806	3/31/2029

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9593	Proposed AG1-226, proposed AG1-237, Eugene and Dequine 345 kV stations: • Install exit transitions at the proposed AG1-226, Proposed AG1-237 and Eugene 345 kV stations. • Install a new fiber optic cable path consisting of 25.1 miles of 144 count ADLT cable in new underground right-of-way.	8.9527	3/31/2029
n9594	Dequine 345 kV station: Review and revise the protective relay settings.	0.0548	3/31/2029
n9595	Proposed AG1-237 345 kV station: • Review and revise the protective relay settings. • Reconfigure the ICONs, installing SFP transceivers.	0.2517	3/31/2029
n9596	Eugene 345 kV station: Review and revise the protective relay settings.	0.2791	3/31/2029
n9597	Eugene-Dequine 345 kV circuit: Proposed AG1-226 345 kV station tie-in: • Remove two steel lattice structures, No. 354 and No. 355, with associated conductor and shield wire along the existing Eugene-Dequine 345 kV circuit. • Install two single-pole, double-circuit, steel dead-end structures along the existing Eugene-Dequine 345 kV circuit. • Install two three-pole, single-circuit, horizontally configured steel dead-end structures for the Dequine-Sullivan 345 kV circuit. • Install two new steel, 120' single-circuit, single-pole dead-end structures and two spans of double-bundle ACSR 1272 (Pheasant) transmission line conductor ACSR 159 (Guinea) shield wire routing the Eugene- Proposed AG1-237 circuit above the Dequine-Sullivan 345 kV circuit, cutting in the proposed AG1-226 345 kV station in an in-and-out arrangement.	7.0027	3/31/2029

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9598	Eugene-Deguine 345 kV circuit: Construct a new 345 kV breaker-and-a-half station, to be operated as a three circuit breaker ring bus, initially expandable to six circuit breakers. • Three 63 kA circuit breakers with associated control relaying • One 16' x 48' DICM • Nine motorized breaker disconnect switches • Six single-phase CCVTs, three each on the line exits to the Eugene and proposed AG1-237 345 kV stations • Two single-phase station service voltage transformers (SSVT) • Two A-Frame line exit structures, one each for the line exits to Eugene and the proposed AG1-237 345 kV stations • Associated conductors (bus work, ground grid, jumpers), telecom terminal equipment, insulators, arresters, foundations and structures • A dual, fiber-based, integrated communications optical network multiplexor (ICON MUX) current differential line protection relay scheme for the line to the Eugene 345 kV station • A dual, fiber-based, ICON MUX current differential line protection relay scheme for the line to the proposed AG1-237 345 kV station	16.0520	3/31/2029
n9599	Eugene 345 kV station: Expansion: • Install one terminal riser for the line exit to the AF1-204 generator lead circuit. • Review and revise the protective relay settings for the remainder of the Eugene 345 kV station.	0.3912	3/31/2029
n9606	Grounding study at Flemingsburg dist. sub.	0.0850	3/1/2029
n9607	Interconnection substation tie-in: Cut and loop Spurlock-Flemingsburg 138 kV line into new interconnection substation with two total new guyed steel three-pole dead-end structures.	0.8470	3/1/2029
n9608	Fiber installation in existing ROW: Install overhead optical ground wire (OPGW) on the Spurlock-Flemmingsburg-Goddard line section (32.1 miles).	4.1064	3/1/2029
n9609	Revise relay settings at Spurlock substation.	0.1340	3/1/2029
n9610	Revise relay settings at Goddard substation.	0.1340	3/1/2029
n9611	West Flemingsburg substation.	12.6180	3/1/2029

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9612	Corey 1385 kV station: Reterminate the Hydramatic-Corey 138 kV circuit. • Remove two steel tangent structures, one steel dead-end structure and associated conductor and shield wire along the existing Corey-Hydramatic 138 kV circuit. • Install one new 90' steel, single-circuit, single-pole, running corner direct embedded structure. • Install one new 90' steel, single-circuit, single-pole dead-end structure on a concrete foundation with an anchor bolt cage. • Install two spans of aluminum conductor steel-reinforced 1033.5 (Curlew) transmission line conductor with 7#8 Alumoweld shield wire.	0.6010	2/28/2029
n9613	Corey 138 kV station: • Installation of one new 138 kV, 3000A 40 kA circuit breaker with associated control relaying • Installation of one three-phase 3000A circuit breaker disconnect switch • Installation of one three-phase coupling capacitor voltage transformer and associated structures for the line exit to the Hydramatic 138 kV station • Installation of one H-frame dead-end structure for the line exit to the Hydramatic 138 kV station • Installation of associated and additional bus work, bus supports, jumpers, insulators, grounding and foundations	0.8040	2/28/2029
n9614	Corey 138 kV station: Reterminate Kenzie Creek-Corey 138 kV line. • Remove one steel dead-end structure and associated conductor and shield wire along the Kenzie Creek-Corey 138 kV circuit. • Install one new 100' steel, single circuit, single pole dead-end structure on a concrete foundation with an anchor bolt cage and two spans of aluminum conductor steel-reinforced 1033.5 (Curlew) transmission line conductor with 7#8 Alumoweld shield wire.	0.5914	2/28/2029
n9615	Install carrier equipment at Eagle Valley substation.	0.7460	12/31/2028
n9616	Install carrier equipment at Shawville substation.	0.7805	12/31/2028
n9617	Install a new 115 kV breaker and associated controls direct connection of AG1-090/AG1-377/AG1-378 Generating Facility to the existing Philipsburg substation.	1.7720	12/31/2028
n9618	Revise relay settings Ayersville.	0.0583	4/30/2026
n9619	Revise relay settings Midway.	0.0583	4/30/2026
n9620	Revise relay settings at Bowling Green No. 2.	0.0583	4/30/2026
n9621	Revise relay settings at Sand Ridge.	0.0583	4/30/2026

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9622	Revise relay settings Fiddlers Green.	0.0511	12/17/2029
n9623	Revise relay settings at Johnstown.	0.0511	12/17/2029
n9624	Revise relay settings at Bear Rock.	0.0508	12/17/2029
n9628	Expand the Davis Creek 138 kV substation to accommodate the AF2-095 Project.	1.1668	12/31/2030
n9629	TSS132 substation expansion: Expand the TSS132 Garden Plain substation to accommodate the AF1-296 Project.	11.6720	5/31/2029
n9630	Construct a new 230 kV line from the AG1-285 substation to the Finneywood 230 kV substation. Expand AG1-285 substation and add two new 230/115 kV transformers.	71.6978	12/31/2029
n9631	Install new overhead optical ground wire (OPGW) on the existing Summersville-Green County line sections for a total of 4.2 miles.	1.0610	11/30/2029
n9632	Revise relay settings at Hodgenville substation.	0.0680	11/30/2029
n9633	Revise relay settings at Stephensburg substation.	0.0680	11/30/2029
n9634	Loop existing Glendale tap-Stephensburg 69 kV line into new interconnection switching station and install overhead optical ground wire (OPGW) on the tie-ins from South Hardin-Stephensburg 69 kV line section and from the South Hardin-Glendale Tap line section.	1.0170	11/30/2029
n9635	Expand existing 161 kV Summer Shade substation to include one 161 kV A-Frame substation structure, one 161 kV 2000 amp circuit breaker, four 2000 amp switches (includes PCO switch), three 161 kV metering CTs and three 108 kV station class surge arrestors.	6.0020	6/30/2028
n9647	Install a 300 MVAR STATCOM at Fentress substation for Coastal Virginia Offshore Wind Project.	49.1633	3/31/2029
n9651	Wreck and rebuild 10.05 miles of line 1059 between Northern Neck and Moon Corner with two 768.2 ACSS/TW (20/7) "MAUMEE" at 250 degrees C and replace line leads at Moon Corner (AE1-155) and Northern Neck.	28.4770	3/31/2029
n9654	FirstEnergy work at new Interconnection substation. Install one security system and camera system. Install one indoor security AC cabinet.	1.2122	12/8/2028
n9655	Remote-end substation work at Chase City to support new interconnection substation	0.1286	6/24/2027
n9656	Remote-end substation work at Farmville to support new interconnection substation	0.1250	6/24/2026
n9657	Remote-end substation work at Pamplin to support new interconnection substation	0.1286	6/24/2027
n9658	Remote-end substation work at Twitty's Creek to support new interconnection substation	0.2210	6/24/2027
n9659	Perform relay upgrades at TSS 189 Crego Rd substation.	0.2680	12/31/2029

Sub ID	Description	Cost Estimate ($M)	Required In-Service Date
n9660	Perform relay upgrades at TSS 56 North Aurora substation.	0.2680	12/31/2029
n9680	Sag mitigation – Remove and replace sixteen existing double-circuit towers with taller double-circuit custom steel poles (Towers 11, 14, 45, 47, 52, 57, 59, 61, 63, 66, 67, 71, 77, 84, 91 and 96). Remove and replace two existing river crossing lattice towers with taller lattice structures (Towers 2 and 140).	24.0060	5/31/2029
n9681	Reconductor 1.04-mile segment of Carson-Chaparall 230 kV line 249 between structures 86 and 93 with two 768.2 ACSS Maumee at 250 degree C.	3.0420	9/1/2027
n9682	Perform sag mitigation on the Powerton-Tazewell 345 kV line and replace disconnect switches at Powerton substation.	5.0174	2/28/2029