

Boxwood-Scottsville 138 kV Rebuild

General Information

Proposing entity name	AEPSCT
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Yes
Company proposal ID	AEP_I
PJM Proposal ID	55
Project title	Boxwood-Scottsville 138 kV Rebuild
Project description	AEP proposes rebuilding the line sections between Boxwood and Scottsville 138 kV in order to increase the emergency rating above the identified thermal overloads.
Email	nckoebler@aep.com
Project in-service date	06/2027
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	Replaces towers originally installed in the 1940s and 1950s.

Project Components

1. Boxwood-Scottsville 138 kV Rebuild

Transmission Line Upgrade Component

Component title	Boxwood-Scottsville 138 kV Rebuild
Project description	Rebuild approximately 37.5 miles of 138 kV line between Boxwood and Scottsville stations. Update remote end relay settings at Boxwood, Clifford, James River, and Scottsville stations.

Impacted transmission line	Boxwood-Scottsville 138 kV Line
Point A	Boxwood
Point B	Scottsville
Point C	Clifford, Colleen Switch, James River, Soapstone
Terrain description	The terrain around the existing line is mostly rolling hills, with a few mountains along the alignment.

Existing Line Physical Characteristics

Operating voltage	138
Conductor size and type	397.5KCM ACSR "Lark"
Hardware plan description	Existing Line hardware and structures will be replaced, aside from new structures being installed around the existing Clifford station and the two new stations, Soapstone and James River. This work should be completed in 2024 and is unrelated to this proposal.
Tower line characteristics	Existing structures are 1940-1950s vintage double circuit lattice towers.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	257.000000	359.000000
Winter (MVA)	324.000000	403.000000
Conductor size and type	795 KCM ACSR "Drake"	
Shield wire size and type	2 - 0.646" 144 count Fiber OPGW	
Rebuild line length	37.5 miles	
Rebuild portion description	Rebuild the existing line in adjacent ROW to avoid outage constraints in the area on the 138 kV network.	

Right of way

Approximately 80% of the new line route will be in adjacent Rights of Way (RoW). This is due to outage constraints not allowing us to take the line and circuit out for months to years at a time to build in existing centerline. The 20% that will be built in existing centerline are existing structures being rebuilt to accommodate the new structures being installed around the existing Clifford station and the two new stations, Soapstone and James River. There are also some existing outside stakeholder easements and conditions (historical and environmental factors) that necessitate portions of the line to be rebuilt in the existing right of way.

Construction responsibility

AEP

Benefits/Comments

Component Cost Details - In Current Year \$

Engineering & design

Detailed cost breakdown

Permitting / routing / siting

Detailed cost breakdown

ROW / land acquisition

Detailed cost breakdown

Materials & equipment

Detailed cost breakdown

Construction & commissioning

Detailed cost breakdown

Construction management

Detailed cost breakdown

Overheads & miscellaneous costs

Detailed cost breakdown

Contingency

Detailed cost breakdown

Total component cost

\$104,876,321.55

Component cost (in-service year)

\$.00

Congestion Drivers

None

Existing Flowgates

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-GD_L104	242613	05COLLEEN SS	244423	05JAMES RIVR	1	138/138	205/205	Light Load Gen Deliv	Included
2022W3-N1-LLT25	242603	05CLIFFR	242613	05COLLEEN SS	1	138/138	205/205	Light Load N-1	Excluded
2022W3-N1-LLT28	242603	05CLIFFR	242613	05COLLEEN SS	1	138/138	205/205	Light Load N-1	Included
2022W3-GD_L109	244423	05JAMES RIVR	244446	05SOAPSTONE	1	138/138	205/205	Light Load Gen Deliv	Included
2022W3-N1-LLT27	242603	05CLIFFR	242613	05COLLEEN SS	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT63	244446	05SOAPSTONE	242792	05SCOTSV	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT29	242603	05CLIFFR	242613	05COLLEEN SS	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT62	244446	05SOAPSTONE	242792	05SCOTSV	1	138/138	205/205	Light Load N-1	Included
2022W3-GD-S329	244423	05JAMES RIVR	244446	05SOAPSTONE	1	138	205	Summer Gen Deliv	Included
2022W3-N1-LLT64	244446	05SOAPSTONE	242792	05SCOTSV	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT41	244423	05JAMES RIVR	244446	05SOAPSTONE	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT22	242563	05BOXWD	242603	05CLIFFR	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT21	242563	05BOXWD	242603	05CLIFFR	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT24	242563	05BOXWD	242603	05CLIFFR	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT23	242563	05BOXWD	242603	05CLIFFR	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT52	244446	05SOAPSTONE	242792	05SCOTSV	1	138/138	205/205	Light Load N-1	Included
2022W3-GD_L81	242563	05BOXWD	242603	05CLIFFR	1	138/138	205/205	Light Load Gen Deliv	Included
2022W3-N1-LLT37	242613	05COLLEEN SS	244423	05JAMES RIVR	1	138/138	205/205	Light Load N-1	Included
2022W3-GD-S180	242603	05CLIFFR	242613	05COLLEEN SS	1	138	205	Summer Gen Deliv	Included
2022W3-N1-LLT39	242613	05COLLEEN SS	244423	05JAMES RIVR	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT38	242613	05COLLEEN SS	244423	05JAMES RIVR	1	138/138	205/205	Light Load N-1	Included
2022W3-GD-S190	242563	05BOXWD	242603	05CLIFFR	1	138	205	Summer Gen Deliv	Included
2022W3-N1-LLT52	244423	05JAMES RIVR	244446	05SOAPSTONE	1	138/138	205/205	Light Load N-1	Included
2022W3-GD-S167	242563	05BOXWD	242603	05CLIFFR	1	138	205	Summer Gen Deliv	Included
2022W3-GD_L89	242603	05CLIFFR	242613	05COLLEEN SS	1	138/138	205/205	Light Load Gen Deliv	Included
2022W3-GD-S270	242613	05COLLEEN SS	244423	05JAMES RIVR	1	138	205	Summer Gen Deliv	Included
2022W3-N1-LLT54	244423	05JAMES RIVR	244446	05SOAPSTONE	1	138/138	205/205	Light Load N-1	Included
2022W3-GD-S304	242613	05COLLEEN SS	244423	05JAMES RIVR	1	138	205	Summer Gen Deliv	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-N1-LLT53	244423	05JAMES RIVR	244446	05SOAPSTONE	1	138/138	205/205	Light Load N-1	Included
2022W3-GD-S372	244446	05SOAPSTONE	242792	05SCOTSV	1	138	205	Summer Gen Deliv	Included
2022W3-N1-LLT30	242613	05COLLEEN SS	244423	05JAMES RIVR	1	138/138	205/205	Light Load N-1	Included
2022W3-GD-S348	244423	05JAMES RIVR	244446	05SOAPSTONE	1	138	205	Summer Gen Deliv	Included
2022W3-GD-S176	242563	05BOXWD	242603	05CLIFFR	1	138	205	Summer Gen Deliv	Included
2022W3-GD_L126	244446	05SOAPSTONE	242792	05SCOTSV	1	138/138	205/205	Light Load Gen Deliv	Included
2022W3-GD-S264	242603	05CLIFFR	242613	05COLLEEN SS	1	138	205	Summer Gen Deliv	Included
2022W3-GD-S231	242603	05CLIFFR	242613	05COLLEEN SS	1	138	205	Summer Gen Deliv	Included

New Flowgates

None

Financial Information

Capital spend start date 01/2024

Construction start date 07/2026

Project Duration (In Months) 41

Additional Comments

None