

# Exelon Replacement Upgrades

## General Information

Proposing entity name	PE
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Yes
Company proposal ID	
PJM Proposal ID	600
Project title	Exelon Replacement Upgrades
Project description	This proposal focuses primarily on replacing overloaded assets within PECO, BGE, and PEPCO on an asset-by-asset basis (e.g. reconductoring existing lines, replacing terminal equipment, etc.). These upgrades will provide incremental transmission capacity throughout the Exelon MidAtlantic territory and each upgrade within this proposal can be additive to both Exelon MidAtlantic and non-Exelon MidAtlantic proposals that PJM may be considering. The Replacement Upgrades require no new right-of-way.
Email	Proprietary Information
Project in-service date	12/2027
Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	Proprietary Information

## Project Components

1. Reconductor Peach Bottom South (PECO) - Conastone (BGE) 500kV Line: PECO Portion
2. Reconductor Peach Bottom (PECO) - Conastone (BGE) 500kV Line: BGE Portion
3. Peach Bottom 500 kV Bus Tie #1 Upgrades: PECO

4. Reconductor Cooper (PECO) - Graceton (BGE) 230kV Line: PECO Portion
5. Reconductor Cooper (PECO) - Graceton (BGE) 230kV Line: BGE Portion
6. Reconductor Nottingham - Cooper 230kV Line: PECO
7. Nottingham Substation Upgrades: PECO
8. Brighton Substation Upgrades for 5011 Line: PEPCO
9. Conastone Substation Upgrades for 5011 Line: BGE
10. Reconductor Brighton - Conastone 500 kV line: BGE
11. Peach Bottom Substation Upgrades to Accommodate 5012 Reconductor: PECO
12. Five Forks-Rock Ridge Substation Upgrades: BGE
13. Windy Edge - Glenarm Tap Rebuild: BGE
14. Windy Edge Substation Upgrades: BGE
15. Conastone Substation Upgrades for 5012 Line Reconductor: BGE
16. Graceton-Manor Line Rebuild: BGE Portion
17. Graceton-Manor Line Rebuild: PPL Portion
18. Conastone - Otter Creek Reconductor: BGE Portion
19. Conastone - Otter Creek Reconductor: PPL Portion
20. Conastone Substation Upgrades for Conastone - Otter Creek: BGE
21. Dickerson - Ed's Ferry Circuit Upgrades: PEPCO Portion
22. Dickerson Substation Upgrades for Dickerson - Ed's Ferry: PEPCO
23. Peach Bottom 500 kV Bus Tie #2 Upgrades: PECO
24. Granite Substation Upgrades for 2311 Line Terminal: BGE
25. Granite Substation Upgrades for 2326 Line Terminal: BGE
26. Ed's Ferry Substation Upgrades for Dickerson - Ed's Ferry: Dominion
27. Dickerson - Ed's Ferry Circuit Upgrades: Dominion Portion
28. Conastone 500kV Capacitor Bank: BGE

### **Transmission Line Upgrade Component**

Component title

Reconductor Peach Bottom South (PECO) - Conastone (BGE) 500kV Line: PECO Portion

Project description	Reconductor the existing 5012 with 2 x 1962kcm 54/19 ACCR to achieve higher ratings required to alleviate facilities that were identified as overloaded in this window.
Impacted transmission line	Peach Bottom South- Conastone
Point A	Peach Bottom South
Point B	MD/PA State Line
Point C	
Terrain description	All construction work on the project will take place on BGE/PECO-owned property. Farmland/rural property along ROW. Hilly terrain with rocky subsurface adjacent to the Peach Bottom North and South substations.

**Existing Line Physical Characteristics**

Operating voltage	500
Conductor size and type	2-2493 KCMIL 54/37 ACAR
Hardware plan description	All hardware and all insulators will be replaced. Insulators will be toughened glass. Structure modification will be dependent on sag and tension characteristics, expected to be less than 10%.
Tower line characteristics	Existing single circuit towers / poles were installed in 1971.

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	500.000000	500.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	4503.000000	5022.000000
Winter (MVA)	5326.000000	5802.000000
Conductor size and type	1962 kcmil ACCR T11 3M	
Shield wire size and type	N/A - No modifications on shield wire are needed except where new structures are inserted.	

Rebuild line length	6.2 miles
Rebuild portion description	5012 circuit from Peach Bottom to Conastone will be reconducted on the existing poles/towers with tower reinforcement/raising as necessary dictated by loading increases and clearance criteria.
Right of way	The right-of-way will not need to be expanded, and no new right-of-way will need to be identified.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$16,894,672.84
Component cost (in-service year)	\$19,023,401.62

**Transmission Line Upgrade Component**

Component title	Reconductor Peach Bottom (PECO) - Conastone (BGE) 500kV Line: BGE Portion
Project description	Reconductor the existing 5012 line from Conastone to MD/PA state line with 2 x 1962kcm 54/19 ACCR operating at 210C normal, 240C emergency
Impacted transmission line	Peach Bottom - Conastone
Point A	MD/PA State Line

Point B	Conastone	
Point C		
Terrain description	All construction work on the project will take place on BGE-owned property. Farm land / rural area along the ROW.	
<b>Existing Line Physical Characteristics</b>		
Operating voltage	500	
Conductor size and type	2 - 2493 kcm 54/37 ACAR	
Hardware plan description	All existing wire and hardware will be replaced.	
Tower line characteristics	Existing single circuit towers / poles were installed in 1967.	
<b>Proposed Line Characteristics</b>		
	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	500.000000	500.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	4503.000000	5022.000000
Winter (MVA)	5326.000000	5802.000000
Conductor size and type	2 x 1962kcm 54/19 ACCR	
Shield wire size and type	N/A - No modifications on shield wire are needed except where new structures are inserted.	
Rebuild line length	10.3 Miles	
Rebuild portion description	5012 circuit from Peach Bottom to Conastone will be reconducted on the existing poles/towers with tower reinforcement/raising as necessary dictated by loading increases and clearance criteria.	
Right of way	This project will be constructed in the existing ROW. No ROW expansion or acquisition is required.	
Construction responsibility	BGE	

Benefits/Comments

Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$34,166,724.00
Component cost (in-service year)	\$36,734,876.00

**Substation Upgrade Component**

Component title	Peach Bottom 500 kV Bus Tie #1 Upgrades: PECO
Project description	Peach Bottom 500 kV Bus Tie #1 Upgrades (PECO). See substation upgrade scope for more details.
Substation name	Peach Bottom (North and South)
Substation zone	PECO
Substation upgrade scope	Install 8 new CTs at Peach Bottom Bus Tie #1 to achieve a minimum 3016 MVA SE rating and a minimum 3464 WE rating.

**Transformer Information**

None	
New equipment description	Install (8) 5000/5A CTs at Peach Bottom Bus Tie #1.

Substation assumptions	Assume that there is no additional land acquisition or clearance issues associated with replacing the existing equipment with the new equipment within the facility.
Real-estate description	This upgrade does not include any expansion of substation fence. No additional land is required.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$2,449,376.48
Component cost (in-service year)	\$2,677,168.50

**Transmission Line Upgrade Component**

Component title	Reconductor Cooper (PECO) - Graceton (BGE) 230kV Line: PECO Portion
Project description	Rebuild and reconductor the entire 22093 circuit with 958kcm 26/19 ACCR/TW "Suwannee" conductor to achieve higher ratings required to alleviate facilities that were identified as overloaded in this window.
Impacted transmission line	Cooper (PECO) - Graceton (BGE)
Point A	Cooper (PECO)

Point B MD/PA State Line

Point C

Terrain description All construction work on the project will take place on PECO-owned property. Farmland / rural area along the ROW.

**Existing Line Physical Characteristics**

Operating voltage 230

Conductor size and type 795 kcmil 30/19 ACSR "Mallard"

Hardware plan description All hardware and all insulator will be replaced. Insulators will be toughened glass. Structure modification will be dependent on sag and tension characteristics, expected to be less than 10%.

Tower line characteristics Existing single circuit towers/poles were installed in 1960.

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	230.000000	230.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	677.000000	865.000000
Winter (MVA)	721.000000	904.000000
Conductor size and type	958kcm 26/19 ACCR/TW "Suwannee" conductor	
Shield wire size and type	AFL DNO-7519, 0.538" 96-fiber OPGW	
Rebuild line length	4.1 miles	
Rebuild portion description	PECO portion of the 22093 circuit (MD/PA state line) will be reconducted on the existing poles/towers.	
Right of way	The right-of-way will not need to be expanded, and no new right-of-way will need to be identified.	
Construction responsibility	PECO	

Benefits/Comments

Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$11,481,452.26
Component cost (in-service year)	\$12,928,115.26

**Transmission Line Upgrade Component**

Component title	Reconductor Cooper (PECO) - Graceton (BGE) 230kV Line: BGE Portion
Project description	Rebuild/Reconductor the existing 230kV 22093 line from Graceton to MD/PA state line (BGE Portion) with 958kcm 26/19 ACCR/TW "Suwannee" conductor.
Impacted transmission line	Cooper (PECO) - Graceton (BGE)
Point A	MD/PA State Line
Point B	Graceton (BGE)
Point C	
Terrain description	All construction work on the project will take place on BGE-owned property. Farm land / rural area along the ROW.

### Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	1590 kcm 45/7 ACSR (0.34mi) and 795 kcm 30/19 ACSR (1.82mi)
Hardware plan description	All existing wire and hardware will be replaced.
Tower line characteristics	Existing single circuit towers / poles were installed in 2016/1960

### Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	677.000000	865.000000
Winter (MVA)	721.000000	904.000000
Conductor size and type	958kcm 26/19 ACCR/TW "Suwannee" conductor	
Shield wire size and type	AFL DNO-7519, 0.538" 96-fiber OPGW	
Rebuild line length	2.16 Miles	
Rebuild portion description	The lattice tower section of 22093 between Graceton to the MD/PA state line would be rebuilt with single circuit 230kV steel poles on concrete caisson foundations. The existing poles/towers from MD/PA state line to Cooper will be reused.	
Right of way	This project will be constructed in the existing ROW. No ROW expansion or acquisition is required.	
Construction responsibility	BGE	
Benefits/Comments	Proprietary Information	
<b>Component Cost Details - In Current Year \$</b>		
Engineering & design	detailed cost	
Permitting / routing / siting	detailed cost	

ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$14,019,600.00
Component cost (in-service year)	\$15,180,467.00

### **Transmission Line Upgrade Component**

Component title	Reconductor Nottingham - Cooper 230kV Line: PECO
Project description	Rebuild and reconductor the entire 22093 circuit with 958kcm 26/19 ACCR/TW "Suwannee" conductor to achieve higher ratings required to alleviate facilities that were identified as overloaded in this window.
Impacted transmission line	Nottingham - Cooper
Point A	Nottingham
Point B	Peach Bottom
Point C	Cooper
Terrain description	All construction work on the project will take place on BGE/PECO-owned property. Hilly terrain with rocky subsurface adjacent to the Peach Bottom North and South substations.

### **Existing Line Physical Characteristics**

Operating voltage	230
Conductor size and type	795 kcmil 30/19 ACSR "Mallard"
Hardware plan description	All hardware and all insulator will be replaced. Insulators will be toughened glass. Structure modification will be dependent on sag and tension characteristics, expected to be less than 10%.

Tower line characteristics

Existing single circuit towers / poles were installed in 1960.

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	230.000000	230.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	761.000000	884.000000
Winter (MVA)	798.000000	921.000000
Conductor size and type	958kcm 26/19 ACCR/TW "Suwannee"	
Shield wire size and type	Shield wire size and type will not be changed	
Rebuild line length	15.63 miles	
Rebuild portion description	Reconductor the entire 22093 circuit from Cooper to Nottingham with 958kcm 26/19 ACCR/TW "Suwannee" conductor.	
Right of way	The right-of-way will not need to be expanded, and no new right-of-way will need to be identified.	
Construction responsibility	PECO	
Benefits/Comments	Proprietary Information	
<b>Component Cost Details - In Current Year \$</b>		
Engineering & design	detailed cost	
Permitting / routing / siting	detailed cost	
ROW / land acquisition	detailed cost	
Materials & equipment	detailed cost	
Construction & commissioning	detailed cost	
Construction management	detailed cost	

Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$20,189,308.25
Component cost (in-service year)	\$19,304,458.81

### **Substation Upgrade Component**

Component title	Nottingham Substation Upgrades: PECO
Project description	Replace reactor and associated substation equipment at Nottingham substation to meet higher ratings of 230 kV lines and facility.
Substation name	Nottingham
Substation zone	PECO
Substation upgrade scope	Upgrade reactor, 2 disconnect switches, circuit breaker and bus work at Nottingham to achieve higher ratings required to alleviate facilities that were identified as overloaded in this window.

### **Transformer Information**

None	
New equipment description	Replace reactor at Nottingham with larger reactor to achieve ratings of: SE 883 (MVA) and WE 992 (MVA). Replace associated substation equipment to match increased ratings.
Substation assumptions	Assume that there is no additional land acquisition or clearance issues associated with replacing the existing equipment with the new equipment within the facility.
Real-estate description	This upgrade does not include any expansion of substation fence. No additional land is required.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information

### **Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost

ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$3,045,028.65
Component cost (in-service year)	\$3,428,702.25

### **Substation Upgrade Component**

Component title	Brighton Substation Upgrades for 5011 Line: PEPCO
Project description	Brighton 5011 Substation Terminal Equipment Upgrades (PEPCO). See Substation Upgrade Scope for more details.
Substation name	Brighton
Substation zone	PEPCO
Substation upgrade scope	Upgrade terminal equipment (Disconnects/breakers/relays) to get the full conductor rating for the 5011 line at Brighton.

### **Transformer Information**

None	
New equipment description	Install two 500kV, 4000A, 50kA Breakers and 4 disconnect switches with associated relay upgrades at Brighton 500kV Substation.
Substation assumptions	Assume that there is no additional land acquisition or clearance issues associated with replacing the existing equipment with the new equipment within the facility.
Real-estate description	This upgrade does not include any expansion of substation fence. No additional land is required.
Construction responsibility	PEPCO

Benefits/Comments

Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$4,127,579.00
Component cost (in-service year)	\$4,341,041.00

**Substation Upgrade Component**

Component title	Conastone Substation Upgrades for 5011 Line: BGE
Project description	Conastone 5011 Substation Terminal Equipment Upgrades (BGE). See Substation Upgrade Scope for more details.
Substation name	Conastone
Substation zone	BGE
Substation upgrade scope	Upgrade terminal equipment (disconnects/breakers) to get the full conductor rating for the 5011 line at Conastone.

**Transformer Information**

None

New equipment description	Install 2 500kV 4000A 63kA breakers (J, H) and 5 disconnect switches with associated relay upgrades at Conastone 500kV Substation.
Substation assumptions	Assume that there is no additional land acquisition or clearance issues associated with replacing the existing equipment with the new equipment within the facility.
Real-estate description	This upgrade does not include any expansion of substation fence. No additional land is required.
Construction responsibility	BGE
Benefits/Comments	Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$7,156,453.00
Component cost (in-service year)	\$7,650,194.00

**Transmission Line Upgrade Component**

Component title	Reconductor Brighton - Conastone 500 kV line: BGE
Project description	Rebuild/Reconductor the existing 500kV 5011 line from Conastone Sub to Mt. Airy Tap with 2 x 1962kcm 51/19 ACCR.
Impacted transmission line	Brighton - Conastone 5011

Point A	Conastone
Point B	Mt. Airy
Point C	
Terrain description	All construction work on the project will take place on BGE-owned property. Farmland / rural area along the ROW.

**Existing Line Physical Characteristics**

Operating voltage	500
Conductor size and type	2 - 2300 kcm 84/19 ACSR
Hardware plan description	All existing wire and hardware will be replaced.
Tower line characteristics	Existing single circuit towers / poles were installed in 1971.

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	500.000000	500.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	3318.000000	4054.000000
Winter (MVA)	3819.000000	4563.000000
Conductor size and type	2 x 1962kcm 51/19 ACCR	
Shield wire size and type	No shield wire being replaced.	
Rebuild line length	48 Miles	
Rebuild portion description	BGE portion of the 5011 circuit from Conastone to the Mt Air Tap (BGE/PHI Interconnection) will be reconducted on the existing poles/towers.	
Right of way	This project will be constructed in the existing ROW. No ROW expansion or acquisition is required.	

Construction responsibility	BGE
Benefits/Comments	Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$76,062,400.00
Component cost (in-service year)	\$83,711,979.00

**Substation Upgrade Component**

Component title	Peach Bottom Substation Upgrades to Accommodate 5012 Reconductor: PECO
Project description	Upgrade breaker Bushings, Breakers, Substation Conductor, disconnects and Equipment CTs in association with the Peach Bottom - Conastone rebuild.
Substation name	Peach Bottom
Substation zone	PECO
Substation upgrade scope	Upgrade bus positions to 6" IPS AL Bus, A-Frames, 5 disconnect switches, wire drops, 2 breakers and standalone CTs.

**Transformer Information**

None	
New equipment description	Upgrade bus positions to 6" IPS AL Bus, Upgrade A-Frames, Upgrade disconnect switches 233, 237, 243, 247 and 123, Upgrade wire drops to match line conductor, Upgrade breaker 235 and 245 to 5000A, Upgrade standalone CTs.
Substation assumptions	Assume that there is no additional land acquisition or clearance issues associated with replacing the existing equipment with the new equipment within the facility.
Real-estate description	This upgrade does not include any expansion of substation fence. No additional land is required.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$8,499,598.06
Component cost (in-service year)	\$9,570,547.43

**Substation Upgrade Component**

Component title	Five Forks-Rock Ridge Substation Upgrades: BGE
Project description	110511 Five Forks - Rock Ridge Tap Substation Terminal Equipment Upgrades at Five Forks (BGE). See Substation Upgrade Scope for more details.

Substation name	Five Forks
Substation zone	BGE
Substation upgrade scope	Upgrade terminal equipment (Equipment CT, OCB, Substation Conductors, Relays, Disconnects) to get the full conductor rating for the 110511 circuit at Five Forks.

**Transformer Information**

None	
New equipment description	Install one 115kV 4000A, 63kA breaker (B3) and associated terminal equipment (e.g., disconnects, relays) at Five Forks.
Substation assumptions	Assume that the current Five Forks-Windy Edge reconductoring project will be completed in 2024 (prior to 2027 RTEP year). Assume that there is no additional land acquisition or clearance issues associated with replacing the existing equipment with the new equipment within the facility.
Real-estate description	This upgrade does not include any expansion of substation fence. No additional land is required.
Construction responsibility	BGE
Benefits/Comments	Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$3,559,700.00

Component cost (in-service year) \$3,822,034.00

### Transmission Line Upgrade Component

Component title Windy Edge - Glenarm Tap Rebuild: BGE

Project description Rebuild/Reconductor the last few span of the existing 110512 line from Glenarm Tap to Windy Edge with 1590kcm 54/19 ACSR.

Impacted transmission line Windy Edge - Glenarm Tap

Point A Windy Edge

Point B Glenarm Tap

Point C

Terrain description All construction work on the project will take place on BGE-owned property. Farmland / rural area along the ROW.

### Existing Line Physical Characteristics

Operating voltage 115

Conductor size and type 634.9 kcm 12/7 ACAR

Hardware plan description All existing wire and hardware will be replaced.

Tower line characteristics Existing single circuit towers / poles were installed in 1965.

### Proposed Line Characteristics

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	115.000000	115.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	332.000000	410.000000
Winter (MVA)	382.000000	461.000000

Conductor size and type	1590kcm 54/19 ACSR
Shield wire size and type	No shield wire replacement is required.
Rebuild line length	0.2 Miles
Rebuild portion description	Replacement of 5 class 1 wood pole H-frame structures between the last new steel structure and the Windy Edge substation dead end structure. The new structures can be class H4 wood poles utilizing fiberglass crossarms and braces.
Right of way	This project will be constructed in the existing ROW. No ROW expansion or acquisition is required.
Construction responsibility	BGE
Benefits/Comments	Proprietary Information
<b>Component Cost Details - In Current Year \$</b>	
Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$178,500.00
Component cost (in-service year)	\$191,125.00
<b>Substation Upgrade Component</b>	
Component title	Windy Edge Substation Upgrades: BGE

Project description	110512 Windy Edgy - Glen Arm Tap Substation Terminal Equipment Upgrades at Windy Edge (BGE). See Substation Upgrade Scope for more details.
Substation name	Windy Edge
Substation zone	BGE
Substation upgrade scope	Upgrade terminal equipment (disconnects, breaker, CT, breaker) to get the full conductor rating for the 110512 circuit at Windy Edge.

**Transformer Information**

None	
New equipment description	Install one 115kV 3000A, 63kA breaker (B9) and associated terminal equipment (e.g., disconnects, CT) at Windy Edge.
Substation assumptions	Assume that the current Five Forks-Windy Edge reconductoring project will be completed in 2025 (prior to 2027 RTEP year). Assume that there is no additional land acquisition or clearance issues associated with replacing the existing equipment with the new equipment within the facility.
Real-estate description	This upgrade does not include any expansion of substation fence. No additional land is required.
Construction responsibility	BGE
Benefits/Comments	Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost

Total component cost	\$2,596,618.00
Component cost (in-service year)	\$2,721,833.00

### **Substation Upgrade Component**

Component title	Conastone Substation Upgrades for 5012 Line Reconductor: BGE
Project description	5012 Conastone Substation Terminal Equipment Upgrades (BGE). See Substation Upgrade Scope for more details.
Substation name	Conastone
Substation zone	BGE
Substation upgrade scope	Upgrade all the substation equipment (incl. 5000A breakers to achieve minimum 5000A/4330MVA summer normal rating at Conastone 500kV substation.

### **Transformer Information**

None	
New equipment description	Install two 500kV, 5000A, 63kA breakers (B, C) at Conastone and associated breaker bushings, other terminal equipment (e.g., disconnects, substation conductors) at Conastone 500kV substation.
Substation assumptions	Assume that there is no additional land acquisition or clearance issues associated with replacing the existing equipment with the new equipment within the facility.
Real-estate description	This upgrade does not include any expansion of substation fence. No additional land is required.
Construction responsibility	BGE
Benefits/Comments	Proprietary Information

### **Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost

Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$4,931,897.00
Component cost (in-service year)	\$5,315,556.00

### **Transmission Line Upgrade Component**

Component title	Graceton-Manor Line Rebuild: BGE Portion
Project description	Reconductor the existing 2303 line with 1622kcm 38/19 ACCR/TW “Pecos” conductor at 210C normal / 240C emergency operating temperature
Impacted transmission line	Graceton - Manor
Point A	Graceton
Point B	MD/PA State Line
Point C	Manor
Terrain description	All construction work on the project will take place on BGE-owned property. Farmland / rural area along the ROW.

### **Existing Line Physical Characteristics**

Operating voltage	230
Conductor size and type	1590 kcm 45/7 ACSR (3.04mi) and 1590 kcm 54/19 ACSR
Hardware plan description	All existing wire and hardware will be replaced.
Tower line characteristics	Existing single circuit towers / poles were installed in 2016/1937.

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	230.000000	230.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	968.000000	1212.000000
Winter (MVA)	1030.000000	1266.000000
Conductor size and type	1622kcm 38/19 ACCR/TW "Pecos" conductor	
Shield wire size and type	N/A - No shield wire replacement is required.	
Rebuild line length	1.74 Miles	
Rebuild portion description	Rebuild of the single circuit lattice towers to double circuit steel poles. Reconductor the entire 2303 circuit from Graceton to Manor.	
Right of way	This project will be constructed in the existing ROWs (BGE/PPL). No ROW expansion or acquisition is required.	
Construction responsibility	BGE	
Benefits/Comments	Proprietary Information	
<b>Component Cost Details - In Current Year \$</b>		
Engineering & design	detailed cost	
Permitting / routing / siting	detailed cost	
ROW / land acquisition	detailed cost	
Materials & equipment	detailed cost	
Construction & commissioning	detailed cost	
Construction management	detailed cost	

Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$12,293,200.00
Component cost (in-service year)	\$13,270,667.00

### Transmission Line Upgrade Component

Component title	Graceton-Manor Line Rebuild: PPL Portion
Project description	Reconductor the existing 2303 line from MD/PA state line to Manor with 1622kcm 38/19 ACCR/TW "Pecos" conductor at 210C normal / 240C emergency operating temperature
Impacted transmission line	Graceton - Manor
Point A	Graceton
Point B	MD/PA State Line
Point C	Manor
Terrain description	All construction work on the project will take place on PPL-owned property. Farmland / rural area along the ROW. The last few spans include Susquehanna River crossing near Safe Harbor.

### Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	Assume that PPL portion of the transmission conductors have the similar existing transmission conductors/ratings.
Hardware plan description	See benefits / comments
Tower line characteristics	See benefits / comments

### Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000

	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	968.000000	1212.000000
Winter (MVA)	1030.000000	1266.000000
Conductor size and type	1622kcm 38/19 ACCR/TW "Pecos" conductor	
Shield wire size and type	N/A - No shield wire replacement is required.	
Rebuild line length	14.5 Miles	
Rebuild portion description	Rebuild of the single circuit lattice towers to double circuit steel poles. Reconductor the entire 2303 circuit from Graceton to Manor.	
Right of way	This project will be constructed in the existing ROWs (BGE/PPL). No ROW expansion or acquisition is required.	
Construction responsibility	PPL	
Benefits/Comments	Proprietary Information	
<b>Component Cost Details - In Current Year \$</b>		
Engineering & design	detailed cost	
Permitting / routing / siting	detailed cost	
ROW / land acquisition	detailed cost	
Materials & equipment	detailed cost	
Construction & commissioning	detailed cost	
Construction management	detailed cost	
Overheads & miscellaneous costs	detailed cost	
Contingency	detailed cost	
Total component cost	\$102,443,334.00	
Component cost (in-service year)	\$110,588,890.00	

## Transmission Line Upgrade Component

Component title	Conastone - Otter Creek Reconductor: BGE Portion
Project description	Reconductor the existing 2302 line from Conastone to MD/PA state line with 1622kcm 38/19 ACCR/TW "Pecos" conductor operating at 210C normal / 240C emergency operating temperature
Impacted transmission line	Conastone - Otter Creek
Point A	Conastone
Point B	MD/PA State Line
Point C	
Terrain description	All construction work on the project will take place on BGE-owned property. Farmland / rural area along the ROW.

### Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	1590 kcm 45/7 ACSR (0.36mi) and 795 kcm 30/19 ACSR
Hardware plan description	All existing wire and hardware will be replaced.
Tower line characteristics	Existing single circuit towers / poles were installed in 2018/1970.

### Proposed Line Characteristics

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	230.000000	230.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	968.000000	1212.000000
Winter (MVA)	1030.000000	1266.000000
Conductor size and type	1622kcm 38/19 ACCR/TW "Pecos" conductor	

Shield wire size and type	N/A - No shield wire replacement is required.
Rebuild line length	4.76 Miles
Rebuild portion description	Reconductor the entire 2302 circuit from Conastone to Otter Creek on the existing towers.
Right of way	This project will be constructed in the existing ROWs (BGE/PPL). No ROW expansion or acquisition is required.
Construction responsibility	BGE
Benefits/Comments	Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$13,346,400.00
Component cost (in-service year)	\$14,407,621.00

**Transmission Line Upgrade Component**

Component title	Conastone - Otter Creek Reconductor: PPL Portion
Project description	Reconductor the existing 2302 line from MD/PA state line to Otter Creek with 1622kcm 38/19 ACCR/TW "Pecos" conductor operating at 210C normal / 240C emergency operating temperature.
Impacted transmission line	Conastone - Otter Creek

Point A	MD/PA State Line
Point B	Otter Creek
Point C	
Terrain description	All construction work on the project will take place on PPL-owned property. Farmland / rural area along the ROW.

**Existing Line Physical Characteristics**

Operating voltage	230
Conductor size and type	Assume that PPL portion of the transmission conductors have the similar existing transmission conductors/ratings.
Hardware plan description	See benefits / comments
Tower line characteristics	See benefits / comments

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	230.000000	230.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	968.000000	1212.000000
Winter (MVA)	1030.000000	1266.000000
Conductor size and type	1622kcm 38/19 ACCR/TW "Pecos" conductor	
Shield wire size and type	N/A - No shield wire replacement is required.	
Rebuild line length	12 Miles	
Rebuild portion description	Reconductor the entire 2302 circuit from Conastone to Otter Creek on the existing towers.	
Right of way	This project will be constructed in the existing ROWs (BGE/PPL). No ROW expansion or acquisition is required.	

Construction responsibility	PPL
Benefits/Comments	Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$33,646,387.00
Component cost (in-service year)	\$36,321,733.00

**Substation Upgrade Component**

Component title	Conastone Substation Upgrades for Conastone - Otter Creek: BGE
Project description	2302 Conastone Substation Terminal Equipment Upgrades (BGE). See Substation Upgrade Scope for more details.
Substation name	Conastone
Substation zone	BGE
Substation upgrade scope	Upgrade terminal equipment (Substation Conductor, disconnect) to get the full conductor rating for the 2302 circuit at Conastone 230kV substation.

**Transformer Information**

None	
New equipment description	Install (1) 3000A disconnect and bundle the existing 2167 kcmil 72/7 ACSR T-line drops at Conastone.
Substation assumptions	Assume that there is no additional land acquisition or clearance issues associated with replacing the existing equipment with the new equipment within the facility.
Real-estate description	This upgrade does not include any expansion of substation fence. No additional land is required.
Construction responsibility	BGE
Benefits/Comments	Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$419,025.00
Component cost (in-service year)	\$445,100.00

**Transmission Line Upgrade Component**

Component title	Dickerson - Ed's Ferry Circuit Upgrades: PEPCO Portion
Project description	Split 230kV 23111 Tie line into two separate circuits (23111 & 23112) and relocate them to Dickerson "H" Station from Dickerson "D" Station.
Impacted transmission line	Dickerson - Ed's Ferry

Point A	Dickerson
Point B	Ed's Ferry
Point C	
Terrain description	All construction work on the project will take place on PEPCO/DOM-owned property. The last few spans include Potomac crossing near the VA/MD state line.

**Existing Line Physical Characteristics**

Operating voltage	230
Conductor size and type	1033 kcm ACCR
Hardware plan description	All existing wire and hardware will be replaced.
Tower line characteristics	Existing single circuit towers / poles were installed in 1963.

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	230.000000	230.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	808.800000	933.000000
Winter (MVA)	851.000000	976.000000
Conductor size and type	1033 kcm ACCR	
Shield wire size and type	N/A - No shield wire replacement is required.	
Rebuild line length	7.08 Miles	
Rebuild portion description	Split the existing 23111 circuits into two different circuits near Structure 23111-V-4E and relocate the two circuits to Bay 8 & 9 of Dickerson H station. The two circuits include both underground and overhead sections to avoid the line crossings at Dickerson.	
Right of way	This project will be constructed in the existing ROW. No ROW expansion or acquisition is required.	

Construction responsibility	PEPCO
Benefits/Comments	Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$24,936,495.00
Component cost (in-service year)	\$27,343,621.00

**Substation Upgrade Component**

Component title	Dickerson Substation Upgrades for Dickerson - Ed's Ferry: PEPCO
Project description	23111 Dickerson Substation Equipment Upgrades (PEPCO). See Substation Upgrade Scope for more details.
Substation name	Dickerson
Substation zone	PEPCO
Substation upgrade scope	Add new terminal equipment (four breakers and associated disconnects, relays, etc) at Bay 8 and 9 for the split line 23111 and 23112 at Dickerson H station. See attached the project diagram and the general arrangement drawing for this upgrade.

**Transformer Information**

None	
New equipment description	Install (4) 230kV, 4000A, 63kA breakers and associated terminal equipment (e.g., 4000A disconnects) at Dickerson H station.
Substation assumptions	Assume that Ed's Ferry substation (Dominion) terminal equipment are also upgraded to get the full transmission conductor ratings of the split lines 23111 and 23112 (new).
Real-estate description	This upgrade does not include any expansion of substation fence. No additional land is required.
Construction responsibility	PEPCO
Benefits/Comments	Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$5,291,857.00
Component cost (in-service year)	\$5,566,173.00

**Substation Upgrade Component**

Component title	Peach Bottom 500 kV Bus Tie #2 Upgrades: PECO
Project description	Upgrade substation equipment associated with Peach Bottom Bus Tie #2 to achieve higher ratings required to alleviate facilities that were identified as overloaded in this window.
Substation name	Peach Bottom (North and South)

Substation zone	PECO
Substation upgrade scope	Install 2 new CTs and 1 meter at Peach Bottom Bus Tie #2 to achieve a minimum 3118 MVA SE rating and a minimum 3590 WE rating.

**Transformer Information**

None	
New equipment description	Install (2) 5000/5A CTs and (1) 5000A meter at Peach Bottom Bus Tie #2.
Substation assumptions	Assume that there is no additional land acquisition or clearance issues associated with replacing the existing equipment with the new equipment within the facility.
Real-estate description	This upgrade does not include any expansion of substation fence. No additional land is required.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information

**Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$612,344.12
Component cost (in-service year)	\$669,292.12

## Substation Upgrade Component

Component title	Granite Substation Upgrades for 2311 Line Terminal: BGE
Project description	2311 Granite Substation Terminal Equipment Upgrades (BGE). See Substation Upgrade Scope for more details.
Substation name	Granite
Substation zone	BGE
Substation upgrade scope	Bundle the existing substation conductor at Granite.

## Transformer Information

None	
New equipment description	Bundle of the existing substation T-line drop conductor 1590 kcmil 45/7 ACSR.
Substation assumptions	None
Real-estate description	This upgrade does not include any expansion of substation fence. No additional land is required.
Construction responsibility	BGE
Benefits/Comments	Proprietary Information

## Component Cost Details - In Current Year \$

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost

Contingency	detailed cost
Total component cost	\$181,000.00
Component cost (in-service year)	\$193,591.00

### **Substation Upgrade Component**

Component title	Granite Substation Upgrades for 2326 Line Terminal: BGE
Project description	2326 Granite Substation Terminal Equipment Upgrades (BGE). See Substation Upgrade Scope for more details.
Substation name	Granite
Substation zone	BGE
Substation upgrade scope	Bundle the existing substation conductor at Granite.

### **Transformer Information**

None	
New equipment description	Bundle of the existing substation T-line drop conductor 1590 kcmil 45/7 ACSR.
Substation assumptions	None
Real-estate description	This upgrade does not include any expansion of substation fence. No additional land is required.
Construction responsibility	BGE
Benefits/Comments	Proprietary Information

### **Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost

Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$181,000.00
Component cost (in-service year)	\$193,591.00

### **Substation Upgrade Component**

Component title	Ed's Ferry Substation Upgrades for Dickerson - Ed's Ferry: Dominion
Project description	23111 Ed's Ferry Substation Terminal Equipment Upgrades (DOM). See Substation Upgrade Scope for more details.
Substation name	Ed's Ferry
Substation zone	Dominion
Substation upgrade scope	Upgrade all the terminal equipment (e.g., additional breakers) to get the full transmission conductor ratings of the split 23111 line at Ed's Ferry substation.

### **Transformer Information**

None	
New equipment description	Additional 230kV 4000A, 63 breakers for the new line and associated terminal equipment (e.g., disconnects, relays, etc).
Substation assumptions	Assume that the existing Ed's Ferry has the expandable bay positions within the facility to allow an additional new circuit (i.e., 23112) without extending the fence, purchasing land or reconfiguring the entire bus configurations at the existing Ed's Ferry station.
Real-estate description	Assume that there is no additional land needed for this upgrade.
Construction responsibility	Dominion
Benefits/Comments	Proprietary Information

### **Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$5,291,857.00
Component cost (in-service year)	\$5,566,173.00

### **Transmission Line Upgrade Component**

Component title	Dickerson - Ed's Ferry Circuit Upgrades: Dominion Portion
Project description	Split the existing 23111 Tie into two separate circuits (23111 & 23112) and terminate them in to the available bay position(s) at Ed's Ferry
Impacted transmission line	Dickerson - Ed's Ferry
Point A	Dickerson
Point B	Ed's Ferry
Point C	
Terrain description	All construction work on the project will take place on PEPCO/DOM-owned property/ROW. The last few spans include Potomac crossing near the VA/MD state line.

### **Existing Line Physical Characteristics**

Operating voltage	230
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Conductor size and type	1033 kcm ACCR
Hardware plan description	All existing wire and hardware will be replaced.
Tower line characteristics	Existing towers are assumed to be similar conditions as the PEPCO poles/towers near Ed's Ferry station.

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	230.000000	230.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	808.800000	933.000000
Winter (MVA)	851.000000	976.000000
Conductor size and type	1033 kcm ACCR	
Shield wire size and type	N/A - No shield wire replacement is required.	
Rebuild line length	0.42 Miles	
Rebuild portion description	Split the existing 23111 circuits into two different circuits and terminate them into Ed's Ferry Station.	
Right of way	This project will be constructed in the existing ROW. No ROW expansion or acquisition is required.	
Construction responsibility	Dominion	
Benefits/Comments	Proprietary Information	
<b>Component Cost Details - In Current Year \$</b>		
Engineering & design	detailed cost	
Permitting / routing / siting	detailed cost	
ROW / land acquisition	detailed cost	
Materials & equipment	detailed cost	

Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$1,479,283.00
Component cost (in-service year)	\$1,622,079.00

### **Substation Upgrade Component**

Component title	Conastone 500kV Capacitor Bank: BGE
Project description	Conastone 500kV Cap Bank. See Substation Upgrade Scope for more details.
Substation name	Conastone
Substation zone	BGE
Substation upgrade scope	Add 500kV Cap Bank and associated terminal equipment at Conastone.

### **Transformer Information**

None	
New equipment description	Install (1) 250MVar Cap Bank and associated terminal equipment at Conastone 500kV substation.
Substation assumptions	Assume that there is no additional land acquisition or clearance issues associated with replacing the existing equipment with the new equipment within the facility.
Real-estate description	This upgrade does not include any expansion of substation fence. No additional land is required.
Construction responsibility	BGE
Benefits/Comments	Proprietary Information

### **Component Cost Details - In Current Year \$**

Engineering & design	detailed cost
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Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	\$14,312,906.00
Component cost (in-service year)	\$15,300,388.00

## 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-N1-ST24913938	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1	Included
2022W3-LD-ST11200004	200004	CNASTONE	200064	PCHBTM1S	1	500/500	232/230	Load Deliverability	Included
2022W3-N1-ST24913938	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1	Included
2022W3-GD-W38213869	213869	PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S177208047	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-S119213869	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-LD-ST13200064	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included
2022W3-GD-S203200004	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-N1-ST25013938	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1	Included
2022W3-GD-W93214084	214084	COOPER	220964	GRACETON	1	230	230/232	Winter Gen Deliv	Included
2022W3-LD-ST12200064	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-GD-S281	200065	PCHBTM2S	200064	PCHBTM1S	Z1	500	230	Summer Gen Deliv	Included
2022W3-GD-W850	213844	NOTTINGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-N1-ST64	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-W851	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Winter Gen Deliv	Included
2022W3-LD-ST5	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Load Deliverability	Included
2022W3-LD-ST4	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Load Deliverability	Included
2022W3-LD-ST7	223937	DICK 230	314290	6EDFERRY	1	230/230	233/345	Load Deliverability	Included
2022W3-LD-ST6	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Load Deliverability	Included
2022W3-LD-ST8	223937	DICK 230	314290	6EDFERRY	1	230/230	233/345	Load Deliverability	Included
2022W3-GD-S1689	223938	DICKH230	223937	DICK 230	2	230	233	Summer Gen Deliv	Included
2022W3-N1-ST2462	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1	Included
2022W3-GD-S1657	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W1383	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-S1690	223938	DICKH230	223937	DICK 230	2	230	233	Summer Gen Deliv	Included
2022W3-GD-S1691	214084	COOPER	220964	GRACETON	1	230	230/232	Summer Gen Deliv	Included
2022W3-N1-ST172	208069	PPL-BGE TIE	220964	GRACETON	1	230/230	229/232	Summer N-1 Thermal	Included
2022W3-N1-ST2472	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1	Included
2022W3-GD-S73	223938	DICKH230	223937	DICK 230	1	230	233	Summer Gen Deliv	Included
2022W3-GD-S72	223938	DICKH230	223937	DICK 230	2	230	233	Summer Gen Deliv	Included
2022W3-GD-W942	214084	COOPER	220964	GRACETON	1	230	230/232	Winter Gen Deliv	Included
2022W3-GD-S1352	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W1002	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Winter Gen Deliv	Included
2022W3-GD-W949	213844	NOTTINGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W73	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W50	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-S84	213844	NOTTINGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W74	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W51	214084	COOPER	220964	GRACETON	1	230	230/232	Winter Gen Deliv	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-GD-S139208071		SAHA34TP	208069	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD-S85	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W132	200065	PCHBTM2S	200064	PCHBTM1S	Z2	500	230	Winter Gen Deliv	Included
2022W3-GD-S1772	208048	OTCR	208047	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-N1-ST102	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-S1272	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Summer Gen Deliv	Included
2022W3-N1-ST65	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD_128	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Light Load Gen Deliv	Included
2022W3-GD-W987	200065	PCHBTM2S	200064	PCHBTM1S	Z2	500	230	Winter Gen Deliv	Included
2022W3-GD_122	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Light Load Gen Deliv	Included
2022W3-GD-W65	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-N1-ST102	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-W68	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W995	200065	PCHBTM2S	200064	PCHBTM1S	Z1	500	230	Winter Gen Deliv	Included
2022W3-N1-ST102	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-W67	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-N1-ST102	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-S1667	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-N1-ST102	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1 Thermal	Included
2022W3-N1-ST102	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-S1472	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W831	213844	NOTTINGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W832	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S3262	208048	OTCR	208047	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD-W1012	208048	OTCR	208047	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-GD-S1552	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-S95	213844	NOTTINGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S20382	21092	FIVE.FOR	221096	ROCKRGE1	1	115	232	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-GD-S96	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W10	223937	DICK 230	314290	6EDFERRY	1	230	233/345	Winter Gen Deliv	Included
2022W3-GD-S31	2208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Summer Gen Deliv	Included
2022W3-N1-ST10	221092	FIVE.FOR	221096	ROCKRGE1	1	115/115	232/232	Summer N-1 Thermal	Included
2022W3-GD-S170	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S166	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W10	223938	DICKH230	223937	DICK 230	1	230	233	Winter Gen Deliv	Included
2022W3-N1-ST23	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Summer N-1 Thermal	Included
2022W3-GD-W10	223938	DICKH230	223937	DICK 230	2	230	233	Winter Gen Deliv	Included
2022W3-GD-S91	223938	DICKH230	223937	DICK 230	1	230	233	Summer Gen Deliv	Included
2022W3-GD-S90	223938	DICKH230	223937	DICK 230	2	230	233	Summer Gen Deliv	Included
2022W3-GD-S179	221092	FIVE.FOR	221096	ROCKRGE1	1	115	232	Summer Gen Deliv	Included
2022W3-GD-S164	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD-S179	220962	NWEST311	220972	GRANITE1	1	230	232	Summer Gen Deliv	Included
2022W3-GD-W86	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-GD-S171	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S171	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-N1-ST12	221092	FIVE.FOR	221096	ROCKRGE1	1	115/115	232/232	Summer N-1 Thermal	Included
2022W3-GD-S171	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD-W88	213869	PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S171	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W84	213844	NOTTINGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W84	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S170	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-W8	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-W1	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-S181	223938	DICKH230	223937	DICK 230	1	230	233	Summer Gen Deliv	Included
2022W3-GD-S181	223938	DICKH230	223937	DICK 230	2	230	233	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-GD-S103200064		PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-W883208071		SAHA34TP	208069	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-GD-S104213844		NOTTINGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S2047221092		FIVE.FOR	221096	ROCKRGE1	1	115	232	Summer Gen Deliv	Included
2022W3-GD-S205200004		CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S1722100004		CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W93 208069		PPL-BGE TIE	220964	GRACETON	1	230	229/232	Winter Gen Deliv	Included
2022W3-GD-S172200004		CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S206221090		GLENARM2	221089	WINDYED1	1	115	232	Summer Gen Deliv	Included
2022W3-GD-S1742100004		CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W95 200064		PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-S171223937		DICK 230	314290	6EDFERRY	1	230	233/345	Summer Gen Deliv	Included
2022W3-GD-W1322100004		CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W791221938		DICKH230	223937	DICK 230	2	230	233	Winter Gen Deliv	Included
2022W3-GD-W891208071		SAHA34TP	208069	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-GD-W892208069		PPL-BGE TIE	220964	GRACETON	1	230	229/232	Winter Gen Deliv	Included
2022W3-GD-S182220961		NWEST326	220973	GRANITE6	1	230	232	Summer Gen Deliv	Included
2022W3-GD-S172200064		PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S172200064		PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-N1-WT19221938		DICKH230	223937	DICK 230	2	230/230	233/233	Winter N-1 Thermal	Included
2022W3-GD-S188214084		COOPER	220964	GRACETON	1	230	230/232	Summer Gen Deliv	Included
2022W3-LD-ST15 200064		PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included
2022W3-N1-WT20221938		DICKH230	223937	DICK 230	2	230/230	233/233	Winter N-1 Thermal	Included
2022W3-GD-S205200004		CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-LD-ST14 200064		PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included
2022W3-N1-WT19221938		DICKH230	223937	DICK 230	2	230/230	233/233	Winter N-1 Thermal	Included
2022W3-LD-ST17 200004		CNASTONE	200003	BRIGHTON	1	500/500	232/233	Load Deliverability	Included
2022W3-N1-WT20221938		DICKH230	223937	DICK 230	1	230/230	233/233	Winter N-1 Thermal	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-LD-ST16	200004	CNASTONE	200003	BRIGHTON	1	500/500	232/233	Load Deliverability	Included
2022W3-N1-WT20	2138938	DICKH230	223937	DICK 230	2	230/230	233/233	Winter N-1 Thermal	Included
2022W3-GD-S346	200065	PCHBTM2S	200066	PCHBTM1N	2	500	230	Summer Gen Deliv	Included
2022W3-N1-ST18	208071	SAHA34TP	208069	PPL-BGE TIE	1	230/230	229/229	Summer N-1 Thermal	Included
2022W3-GD-W96	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-W90	213869	PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W97	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-S232	2223937	DICK 230	314290	6EDFERRY	1	230	233/345	Summer Gen Deliv	Included
2022W3-N1-WT19	2138938	DICKH230	223937	DICK 230	1	230/230	233/233	Winter N-1 Thermal	Included
2022W3-N1-WT19	2138938	DICKH230	223937	DICK 230	2	230/230	233/233	Winter N-1 Thermal	Included
2022W3-GD-S173	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-W79	314290	DICK 230	314290	6EDFERRY	1	230	233/345	Winter Gen Deliv	Included
2022W3-GD-S201	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W16	314290	DICK 230	314290	6EDFERRY	1	230	233/345	Winter Gen Deliv	Included
2022W3-GD-S202	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W79	2138938	DICKH230	223937	DICK 230	1	230	233	Winter Gen Deliv	Included
2022W3-GD-S247	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-S105	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W10	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W79	314290	DICK 230	314290	6EDFERRY	1	230	233/345	Winter Gen Deliv	Included
2022W3-GD-W15	213844	NOTTINGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S214	214084	COOPER	220964	GRACETON	1	230	230/232	Summer Gen Deliv	Included
2022W3-GD-W9	213869	PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W16	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W79	2138938	DICKH230	223937	DICK 230	1	230	233	Winter Gen Deliv	Included
2022W3-GD-S260	208048	OTCR	208047	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD-W95	214084	COOPER	220964	GRACETON	1	230	230/232	Winter Gen Deliv	Included
2022W3-GD-S206	221090	GLENARM2	221089	WINDYED1	1	115	232	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-LD-ST19	200004	CNASTONE	200003	BRIGHTON	1	500/500	232/233	Load Deliverability	Included
2022W3-GD-W90	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Winter Gen Deliv	Included
2022W3-N1-WT20	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Winter N-1 Thermal	Included
2022W3-LD-ST18	200004	CNASTONE	200003	BRIGHTON	1	500/500	232/233	Load Deliverability	Included
2022W3-N1-WT20	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Winter N-1 Thermal	Included
2022W3-LD-ST21	200003	BRIGHTON	200004	CNASTONE	1	500/500	233/232	Load Deliverability	Included
2022W3-LD-ST20	208047	PPL-BGE TIE	220963	CONASTON	1	230/230	229/232	Load Deliverability	Included
2022W3-N1-WT20	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Winter N-1 Thermal	Included
2022W3-LD-ST22	208048	OTCR	208047	PPL-BGE TIE	1	230/230	229/229	Load Deliverability	Included
2022W3-GD-S81N	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S221	214084	COOPER	220964	GRACETON	1	230	230/232	Summer Gen Deliv	Included
2022W3-GD-S168	223938	DICKH230	223937	DICK 230	1	230	233	Summer Gen Deliv	Included
2022W3-GD-W92	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-S168	223938	DICKH230	223937	DICK 230	1	230	233	Summer Gen Deliv	Included
2022W3-GD-S165	213844	NOTTINGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S173	223937	DICK 230	314290	6EDFERRY	1	230	233/345	Summer Gen Deliv	Included
2022W3-GD-S173	223937	DICK 230	314290	6EDFERRY	1	230	233/345	Summer Gen Deliv	Included
2022W3-LD-ST1	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Load Deliverability	Included
2022W3-LD-ST3	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Load Deliverability	Included
2022W3-GD-W1	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-LD-ST2	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Load Deliverability	Included
2022W3-GD-W80	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Winter Gen Deliv	Included
2022W3-GD-S76N	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S165	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-N1-ST20	223937	DICK 230	314290	6EDFERRY	1	230/230	233/345	Summer N-1 Thermal	Included

## New Flowgates

None

## Financial Information

Capital spend start date	01/2024
Construction start date	03/2025
Project Duration (In Months)	47

## Cost Containment Commitment

Cost cap (in current year)	Proprietary Information
Cost cap (in-service year)	Proprietary Information

## Components covered by cost containment

1. Reconductor Peach Bottom South (PECO) - Conastone (BGE) 500kV Line: PECO Portion - PECO
2. Reconductor Peach Bottom (PECO) - Conastone (BGE) 500kV Line: BGE Portion - BGE
3. Peach Bottom 500 kV Bus Tie #1 Upgrades: PECO - PECO
4. Reconductor Cooper (PECO) - Graceton (BGE) 230kV Line: PECO Portion - PECO
5. Reconductor Cooper (PECO) - Graceton (BGE) 230kV Line: BGE Portion - BGE
6. Reconductor Nottingham - Cooper 230kV Line: PECO - PECO
7. Nottingham Substation Upgrades: PECO - PECO
8. Brighton Substation Upgrades for 5011 Line: PEPCO - PEPCO
9. Conastone Substation Upgrades for 5011 Line: BGE - BGE
10. Reconductor Brighton - Conastone 500 kV line: BGE - BGE
11. Peach Bottom Substation Upgrades to Accommodate 5012 Reconductor: PECO - PECO
12. Five Forks-Rock Ridge Substation Upgrades: BGE - BGE
13. Windy Edge - Glenarm Tap Rebuild: BGE - BGE
14. Windy Edge Substation Upgrades: BGE - BGE
15. Conastone Substation Upgrades for 5012 Line Reconductor: BGE - BGE
16. Graceton-Manor Line Rebuild: BGE Portion - BGE

- 17. Conastone - Otter Creek Reconductor: BGE Portion - BGE
- 18. Conastone Substation Upgrades for Conastone - Otter Creek: BGE - BGE
- 19. Dickerson - Ed's Ferry Circuit Upgrades: PEPCO Portion - PEPCO
- 20. Dickerson Substation Upgrades for Dickerson - Ed's Ferry: PEPCO - PEPCO
- 21. Peach Bottom 500 kV Bus Tie #2 Upgrades: PECO - PECO
- 22. Granite Substation Upgrades for 2311 Line Terminal: BGE - BGE
- 23. Granite Substation Upgrades for 2326 Line Terminal: BGE - BGE
- 24. Conastone 500kV Capacitor Bank: BGE - BGE

**Cost elements covered by cost containment**

Engineering & design	Yes
Permitting / routing / siting	Yes
ROW / land acquisition	Yes
Materials & equipment	Yes
Construction & commissioning	Yes
Construction management	Yes
Overheads & miscellaneous costs	Yes
Taxes	Yes
AFUDC	Yes
Escalation	Yes
Additional Information	Proprietary Information
Is the proposer offering a binding cap on ROE?	No
Is the proposer offering a Debt to Equity Ratio cap?	Proprietary Information

## Additional Comments

None