

Proposal F - Peach Bottom-New Raphael-Waugh Chapel 500kV; Peach Bottom-Doubs 500kV

General Information

Proposing entity name	Competitive
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Competitive
Company proposal ID	Competitive
PJM Proposal ID	808
Project title	Proposal F - Peach Bottom-New Raphael-Waugh Chapel 500kV; Peach Bottom-Doubs 500kV
Project description	500kV Greenfield line from Peach Bottom to New Raphael Station, 500kV Greenfield line from New Raphael Station to Waugh Chapel, 500kV Greenfield line from Doubs Station to Peach Bottom Station, and a reconductor of Peach Bottom North to Peach Bottom South Tie #1 and #2
Email	Competitive
Project in-service date	06/2028
Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	Competitive

Project Components

1. Peach Bottom-New Raphael 500kV
2. New Raphael-Waugh Chapel 500kV line
3. Doubs-Peach Bottom 500kV Line
4. Reconductor Peach Bottom North to Peach Bottom South Tie #1 and #2
5. New Raphael 500kV Station

- 6. Peach Bottom 500kV Upgrade
- 7. Doubs 500/230kV Upgrade
- 8. Northeast 230/115kV Upgrade
- 9. Raphael Rd 230kV Upgrade
- 10. Waugh Chapel 500kV Upgrade
- 11. Conastone/Brighton 500kV Upgrade

Greenfield Transmission Line Component

Component title	Peach Bottom-New Raphael 500kV	
Project description	Competitive	
Point A	Peach Bottom 500kV	
Point B	Raphael 500kV	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	3341.000000	4156.000000
Winter (MVA)	3759.000000	4595.000000
Conductor size and type	500-kV AC single-circuit 954 kcmil ACSR "Cardinal"	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	
General route description	Approximately 35 miles between the Peach Bottom 500kV station and the New Raphael 500kV station	
Terrain description	The Peach Bottom - New Rafael Route is mostly in rural areas. Northern portion of the route is located in southern Pennsylvania with rural and farmed properties and then the route heads to the west. This route mostly parallels existing ROW.	

Right-of-way width by segment	This project will require ROWs with widths of 80-85 feet in residential areas, 125-130 feet in farmland, 150 feet in farmland, and 170 feet at the Patapsco River
Electrical transmission infrastructure crossings	Existing transmission line crossing between #144 and #145, Existing transmission line crossing between #148 and #149, Existing transmission line crossing between #151 and #152, Existing transmission line crossing between #154 and #155, Existing transmission line crossing between #160 and #161
Civil infrastructure/major waterway facility crossing plan	All civil infrastructure and major waterway crossings can be found on the attached crossing plan.
Environmental impacts	<p>The Team conducted an assessment of anticipated permits associated with the proposed route and have supported the evaluation of routing and development scenarios throughout the process. The assessments included a review of Federal, state, regional, and local regulatory requirements that could potentially impact each of the individual project scenarios. The circuits and associated stations are located in Pennsylvania and Maryland. A GIS analysis was performed to route away from known public lands and no public lands will be required for this project scope. Reviews were performed using publicly available GIS data from both MD and PA sources. Upon award a detailed field based analysis will be completed. No transmission towers are located in stream crossings which will minimize stream bed impacts. NWI wetlands data, FEMA floodplain layers, and state datasets were reviewed as part of the project analysis. Known wetlands areas were used for avoidance however field analysis will confirm total proposed temporary and permanent impacts. PSE&G has been able to largely avoid permanent impacts to wetlands for overhead transmission projects and will work to shift tower foundations wherever feasible in detailed design upon confirmation of field conditions. The proposed route will intersect FEMA mapped floodplains however only the tower foundations will have assumed impacts. Field based delineations and assessments will include the above mentioned wetlands and streams delineations, habitat surveys for species identified by the records review, and cultural resource studies will be completed for the entire project (including known construction only impacts). Following field studies, data will be incorporated into the engineering model so that tower locations and applicable station location are sited to maximize avoidance of sensitive resources. Towers will be placed outside of wetlands, streams, known threatened and endangered species habitat and cultural/historical areas and floodplains to the greatest extent possible. Construction timing will be scheduled in accordance with USFWS and state agency specifications to minimize impacts to threatened and endangered habitat locations. At a minimum, approvals and permits are anticipated to be acquired from the Maryland Public Service Commission, Pennsylvania Public Utility Commission, USACE, USFWS, MDE, PADEP, MD County Soil Conservation Districts and in accordance with the standards & specifications of applicable local ordinance</p>
Tower characteristics	H frames
Construction responsibility	Competitive
Benefits/Comments	Competitive

Component Cost Details - In Current Year \$

Engineering & design	Competitive
Permitting / routing / siting	Competitive
ROW / land acquisition	Competitive
Materials & equipment	Competitive
Construction & commissioning	Competitive
Construction management	Competitive
Overheads & miscellaneous costs	Competitive
Contingency	Competitive
Total component cost	\$191,672,961.09
Component cost (in-service year)	\$208,438,197.00

Greenfield Transmission Line Component

Component title	New Raphael-Waugh Chapel 500kV line
Project description	Competitive
Point A	New Raphael 500kV
Point B	Waugh Chapel 500kV
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	3341.000000	4156.000000
Winter (MVA)	3759.000000	4595.000000
Conductor size and type	500-kV AC single-circuit 954 kcmil ACSR "Cardinal"	

Nominal voltage	AC
Nominal voltage	500
Line construction type	Overhead
General route description	Approximately 37 miles of greenfield transmission line
Terrain description	Route is mostly in urban areas with some undeveloped and farmland. Northern portion of the route is to the east of Baltimore and south is to the west of Annapolis. Route terrain has an average elevation of 240' Average slope is 2% for the route.
Right-of-way width by segment	This project will require ROWs with widths of 80-85 feet in residential areas, 125-130 feet in farmland, 150 feet in farmland, and 170 feet at the Patapsco River
Electrical transmission infrastructure crossings	Existing transmission line and railroad crossing between #136 and #137, Existing transmission line crossing between #14 and #15, Existing transmission line crossing between #29 and #30, Multiple existing transmission lines crossing between #151 and #152, Multiple existing transmission lines crossing between #73 and #74
Civil infrastructure/major waterway facility crossing plan	All civil infrastructure and major waterway crossings can be found in the attached crossing plan

Environmental impacts

The Team conducted an assessment of anticipated permits associated with the proposed route and have supported the evaluation of routing and development scenarios throughout the process. The permitting and environmental assessments have included a review of Federal, state, regional, and local regulatory requirements that could potentially impact each of the individual project scenarios. The circuits and associated stations are located in Maryland. A GIS analysis was performed to route away from known public lands and no public lands will be required for this project scope. Reviews were performed using publicly available GIS data from MD sources. Upon award a detailed field based analysis will be completed. No transmission towers are located in stream crossings which will minimize stream bed impacts. NWI wetlands data, FEMA floodplain layers, and state datasets were reviewed as part of the project analysis. Known wetlands areas were used for avoidance however field analysis will confirm total proposed temporary and permanent impacts. PSE&G has been able to largely avoid permanent impacts to wetlands for overhead transmission projects and will work to shift tower foundations wherever feasible in detailed design upon confirmation of field conditions. The proposed route will intersect FEMA mapped floodplains however only the tower foundations will have assumed impacts. Field based delineations and assessments will include the above mentioned wetlands and streams delineations, habitat surveys for species identified by the records review, and cultural resource studies will be completed for the entire project (including known construction only impacts). Following field studies, data will be incorporated into the engineering model so that tower locations and applicable station location are sited to maximize avoidance of sensitive resources. Towers will be placed outside of wetlands, streams, known threatened and endangered species habitat and cultural/historical areas and floodplains to the greatest extent possible. Construction timing will be scheduled in accordance with USFWS and state agency specifications to minimize impacts to threatened and endangered habitat locations. At a minimum, approvals and permits are anticipated to be acquired from the Maryland Public Service Commission, USACE, USFWS, MDE, MD County Soil Conservation Districts and in accordance with the standards and specifications of applicable local ordinances.

Tower characteristics

Monopole - single circuit

Construction responsibility

Competitive

Benefits/Comments

Competitive

Component Cost Details - In Current Year \$

Engineering & design

Competitive

Permitting / routing / siting

Competitive

ROW / land acquisition

Competitive

Materials & equipment

Competitive

Construction & commissioning

Competitive

Construction management	Competitive
Overheads & miscellaneous costs	Competitive
Contingency	Competitive
Total component cost	\$318,882,238.02
Component cost (in-service year)	\$346,774,207.00

Greenfield Transmission Line Component

Component title	Doubs-Peach Bottom 500kV Line
Project description	Competitive
Point A	Doubs 500kV
Point B	Peach Bottom 500kV
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	3341.000000	4156.000000
Winter (MVA)	3759.000000	4595.000000
Conductor size and type	500-kV AC single-circuit 954 kcmil ACSR "Cardinal"	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	
General route description	Approximately 87 miles between the Doubs 500kV station and the Peach Bottom 500kV station	
Terrain description	The Peach Bottom - Doubs Route is mostly in rural areas. Northern portion of the route is located in southern Pennsylvania with rural and farmed properties and then the route heads to the west. The route is to the north and west of Westminster and then heads in a south-westerly direction to Doubs.	

Right-of-way width by segment	This project will require ROWs with widths of 80-85 feet in residential areas, 125-130 feet in farmland, 150 feet in farmland, and 170 feet at the Patapsco River
Electrical transmission infrastructure crossings	Existing transmission line crossing between #209 and #21, Existing transmission line crossing between #214 and #215, Existing transmission line crossing between #269 and #270, Existing transmission line crossing between #301 and #302, Existing transmission line crossing between #43 and #44
Civil infrastructure/major waterway facility crossing plan	All civil infrastructure and major waterway crossings can be found in the attached crossing plan
Environmental impacts	<p>The Team conducted an assessment of anticipated permits associated with the proposed route and have supported the evaluation of routing and development scenarios throughout the process. The assessments included a review of Federal, state, regional, and local regulatory requirements that could potentially impact each of the individual project scenarios. The circuits and associated stations are located in Pennsylvania and Maryland. A GIS analysis was performed to route away from known public lands and no public lands will be required for this project scope. Reviews were performed using publicly available GIS data from both MD and PA sources. Upon award a detailed field based analysis will be completed. No transmission towers are located in stream crossings which will minimize stream bed impacts. NWI wetlands data, FEMA floodplain layers, and state datasets were reviewed as part of the project analysis. Known wetlands areas were used for avoidance however field analysis will confirm total proposed temporary and permanent impacts. PSE&G has been able to largely avoid permanent impacts to wetlands for overhead transmission projects and will work to shift tower foundations wherever feasible in detailed design upon confirmation of field conditions. The proposed route will intersect FEMA mapped floodplains however only the tower foundations will have assumed impacts. Field based delineations and assessments will include the above mentioned wetlands and streams delineations, habitat surveys for species identified by the records review, and cultural resource studies will be completed for the entire project (including known construction only impacts). Following field studies, data will be incorporated into the engineering model so that tower locations and applicable station location are sited to maximize avoidance of sensitive resources. Towers will be placed outside of wetlands, streams, known threatened and endangered species habitat and cultural/historical areas and floodplains to the greatest extent possible. Construction timing will be scheduled in accordance with USFWS and state agency specifications to minimize impacts to threatened and endangered habitat locations. At a minimum, approvals and permits are anticipated to be acquired from the Maryland Public Service Commission, Pennsylvania Public Utility Commission, USACE, USFWS, MDE, PADEP, MD County Soil Conservation Districts and in accordance with the standards & specifications of applicable local ordinance</p>
Tower characteristics	H frames
Construction responsibility	Competitive
Benefits/Comments	Competitive

Component Cost Details - In Current Year \$

Engineering & design	Competitive
Permitting / routing / siting	Competitive
ROW / land acquisition	Competitive
Materials & equipment	Competitive
Construction & commissioning	Competitive
Construction management	Competitive
Overheads & miscellaneous costs	Competitive
Contingency	Competitive
Total component cost	\$452,521,553.02
Component cost (in-service year)	\$499,912,345.00

Transmission Line Upgrade Component

Component title	Reconductor Peach Bottom North to Peach Bottom South Tie #1 and #2
Project description	Competitive
Impacted transmission line	Peach Bottom North to Peach Bottom South Tie #1 and #2
Point A	Peach Bottom North
Point B	Peach Bottom South
Point C	
Terrain description	Area of less than a mile located between Peach Bottom North and Peach Bottom South.

Existing Line Physical Characteristics

Operating voltage	500kV
Conductor size and type	n/a

Hardware plan description

Hardware is assumed to be in good condition and will be reused.

Tower line characteristics

Tower structures and foundations are assumed to be in good condition and will be reused.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	500.000000	500.000000
	Normal ratings	Emergency ratings
Summer (MVA)	2477.000000	4025.000000
Winter (MVA)	2948.000000	5430.000000
Conductor size and type	954 kcmil ACSR "Cardinal"	
Shield wire size and type	Existing shield wire will be reused	
Rebuild line length	<1 mile	
Rebuild portion description	Rebuild the tie lines between Peach Bottom North and Peach Bottom South.	
Right of way	This project will use existing ROWs	
Construction responsibility	Confidential	
Benefits/Comments	Confidential	
Component Cost Details - In Current Year \$		
Engineering & design	Confidential	
Permitting / routing / siting	Confidential	
ROW / land acquisition	Confidential	
Materials & equipment	Confidential	
Construction & commissioning	Confidential	

Construction management	Confidential
Overheads & miscellaneous costs	Confidential
Contingency	Confidential
Total component cost	\$3,011,848.00
Component cost (in-service year)	\$3,275,288.00

Greenfield Substation Component

Component title	New Raphael 500kV Station
Project description	Confidential
Substation name	Raphael
Substation description	Build a New Raphael 500kV Substation by installing six (6) single phase 500/230kV 750MVA XFMRs and a four-breaker 500kV ring bus with two (2) 500kV line terminals and their associated disconnect switches. A new control building will also be required.
Nominal voltage	AC
Nominal voltage	500kV

Transformer Information

None

Major equipment description	Six (6) single phase 500/230kV 750MVA XFMRs, four (4) 500kV circuit breakers and their associated disconnect switches, two (2) 500kV line disconnect switches, two (2) 500kV line terminals, two (2) 500kV XFMR disconnect switches, two (2) 230kV XFMR disconnect switches, and one (1) control building.
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	Normal ratings	Emergency ratings
Summer (MVA)	1500.000000	1875.000000
Winter (MVA)	1875.000000	2025.000000

Environmental assessment

A GIS analysis was performed to locate known public lands and no public lands will be required for this project scope. Environmental reviews were performed using publicly available GIS data from Maryland sources. Upon award a detailed field based analysis will be completed. NWI wetlands data, FEMA floodplain layers, and state datasets were reviewed as part of the project analysis. Field based delineations and assessments will include wetlands and streams delineations, habitat surveys for species identified by the records review, and cultural resource studies will be completed for the entire project (including known temporary –construction based impacts). Following field studies, data will be incorporated into the engineering model so that the station development maximizes avoidance of sensitive resources. Development will be placed outside of wetlands, streams, known threatened and endangered species habitat and cultural/historical areas and floodplains to the greatest extent possible. Construction timing will be scheduled in accordance with USFWS and state agency specifications to minimize impacts to threatened and endangered habitat locations. At a minimum, approvals and permits are anticipated to be acquired from the Maryland Public Service Commission, USACE, USFWS, MDE, MD County Soil Conservation District and in accordance with the standards and specifications of applicable local ordinances.

Outreach plan

PSE&G will coordinate all outreach, real estate-related requests, and efforts to identify environmental and non-environmental conditions affecting the properties along the proposed Project route. Working collaboratively with our internal Outreach Team, PSE&G will coordinate stakeholder engagement and public outreach with land acquisition planning. This level of collaboration will help to ensure proactive and cohesive stakeholder communications in order to better serve landowners and impacted individuals and entities. PSE&G contemplates the need for access roads and areas, as part of any lands to be acquired.

Land acquisition plan

PSEG has identified several properties that are suitable for this proposed solution. The Project Team has initiated contact with the property owners and will continue to work to acquire site control in the event of award. The Project Team will work with impacted stakeholders, municipalities, and local authorities to obtain the necessary property rights to construct and maintain its facilities. While this solution is located outside of PSE&G territory, PSE&G is committed to a transparent, timely, and efficient land rights acquisition process for any site control required. PSE&G intends to utilize the same land acquisition professionals from start to finish, ensuring landowners have the same team assigned to their negotiations throughout the process.

Construction responsibility

Competitive

Benefits/Comments

Competitive

Component Cost Details - In Current Year \$

Engineering & design

Competitive

Permitting / routing / siting

Competitive

ROW / land acquisition

Competitive

Materials & equipment	Competitive
Construction & commissioning	Competitive
Construction management	Competitive
Overheads & miscellaneous costs	Competitive
Contingency	Competitive
Total component cost	\$105,524,873.00
Component cost (in-service year)	\$114,754,916.00

Substation Upgrade Component

Component title	Peach Bottom 500kV Upgrade
Project description	Competitive
Substation name	Peach Bottom 500kV
Substation zone	PECO
Substation upgrade scope	Rebuild two (2) Peach Bottom South and two (2) Peach Bottom North main busses. Expand Peach Bottom South 500kV with one new breaker and half bay. Relocate the 500kV circuits 5012 (Peach Bottom - Conastone) & 5034 (Peach Bottom - North delta) to these new positions at Peach Bottom South 500kV. Relocate the 500kV circuit 5014 (Peach Bottom - Rock Springs) to another existing position at Peach Bottom South 500kV Connect the Peach Bottom to Raphael 500kV circuit to an existing position at Peach Bottom South 500kV Connect the Peach Bottom to Doubs 500kV circuit to an existing position at Peach Bottom South 500kV Expand Peach Bottom North 500kV with one new double bus double breaker bay. Relocate the 500kV circuit 5010 (Peach Bottom - Limerick) to this new position at Peach Bottom North 500kV

Transformer Information

None	
New equipment description	Peach Bottom South-New breaker and a half bay. Peach Bottom North new double bus double breaker bay.

Substation assumptions	This proposal assumes that all necessary outages will be available; existing AC, DC, and telecom. systems will accommodate the new equipment; geotechnical data is available; ground grid upgrades will not be needed; the existing cable trench has space for the new cables; the existing control house has space for the new relay panels; existing yard station equipment does not need to be replaced except for the associated line relays and existing line interchange metering exists and does not need to be replaced.
Real-estate description	No substation expansion is anticipated
Construction responsibility	Competitive
Benefits/Comments	Competitive
Component Cost Details - In Current Year \$	
Engineering & design	Competitive
Permitting / routing / siting	Competitive
ROW / land acquisition	Competitive
Materials & equipment	Competitive
Construction & commissioning	Competitive
Construction management	Competitive
Overheads & miscellaneous costs	Competitive
Contingency	Competitive
Total component cost	\$36,022,217.00
Component cost (in-service year)	\$39,173,006.00
Substation Upgrade Component	
Component title	Doubs 500/230kV Upgrade
Project description	Competitive
Substation name	Doubs

Substation zone	APS
Substation upgrade scope	Upgrade 500/230kV transformer #01 at Doubs station. Connect the new Peach Bottom to Doubs 500kV circuit to an existing position at Doubs 500kV

Transformer Information

	Name	Capacity (MVA)	
Transformer	01		
	High Side	Low Side	Tertiary
Voltage (kV)	500	230	
New equipment description	One (1) new 500/230kV transformer		
Substation assumptions	This proposal assumes that all necessary outages will be available; existing AC, DC, and telecom. systems will accommodate the new equipment; geotechnical data is available; ground grid upgrades will not be needed; the existing cable trench has space for the new cables; the existing control house has space for the new relay panels; existing yard station equipment does not need to be replaced except for the associated line relays and existing line interchange metering exists and does not need to be replaced.		
Real-estate description	No substation expansion is anticipated		
Construction responsibility	Competitive		
Benefits/Comments	Competitive		
Component Cost Details - In Current Year \$			
Engineering & design	Competitive		
Permitting / routing / siting	Competitive		
ROW / land acquisition	Competitive		
Materials & equipment	Competitive		
Construction & commissioning	Competitive		

Construction management	Competitive
Overheads & miscellaneous costs	Competitive
Contingency	Competitive
Total component cost	\$17,942,609.00
Component cost (in-service year)	\$19,512,012.00

Substation Upgrade Component

Component title	Northeast 230/115kV Upgrade
Project description	Competitive
Substation name	Northeast 230kV
Substation zone	BGE
Substation upgrade scope	Upgrade two (2) 230/115kV transformers at Northeast

Transformer Information

	Name		Capacity (MVA)
Transformer	01		
	High Side	Low Side	Tertiary
Voltage (kV)	230	115	
	Name		Capacity (MVA)
Transformer	02		
	High Side	Low Side	Tertiary
Voltage (kV)	230	115	
New equipment description	Two (2) new 230/115kV transformers with an SNR of 800 MVA and an SER of 1150 MVA		

Substation assumptions	This proposal assumes that all necessary outages will be available; existing AC, DC, and telecom. systems will accommodate the new equipment; geotechnical data is available; the existing cable trench has space for the new cables; the existing control house has space for the new relay panels; existing yard station equipment does not need to be replaced except for the associated line relays and existing line interchange metering exists and does not need to be replaced.
Real-estate description	No substation expansion is anticipated
Construction responsibility	Competitive
Benefits/Comments	Competitive
Component Cost Details - In Current Year \$	
Engineering & design	Competitive
Permitting / routing / siting	Competitive
ROW / land acquisition	Competitive
Materials & equipment	Competitive
Construction & commissioning	Competitive
Construction management	Competitive
Overheads & miscellaneous costs	Competitive
Contingency	Competitive
Total component cost	\$17,679,926.00
Component cost (in-service year)	\$19,226,352.00
Substation Upgrade Component	
Component title	Raphael Rd 230kV Upgrade
Project description	Competitive
Substation name	Raphael Rd Substation
Substation zone	BGE

Substation upgrade scope

Expand Raphael 230kV station to add (2) new breakers and upgrade three (3) 230kV breakers to a higher rating of 63kA

Transformer Information

None

New equipment description

Two (2) 500/230kV breakers

Substation assumptions

This proposal assumes that all necessary outages will be available; existing AC, DC, and telecom. systems will accommodate the new equipment; geotechnical data is available; the existing cable trench has space for the new cables; the existing control house has space for the new relay panels; existing yard station equipment does not need to be replaced except for the associated line relays and existing line interchange metering exists and does not need to be replaced.

Real-estate description

No substation expansion is anticipated

Construction responsibility

Competitive

Benefits/Comments

Competitive

Component Cost Details - In Current Year \$

Engineering & design

Competitive

Permitting / routing / siting

Competitive

ROW / land acquisition

Competitive

Materials & equipment

Competitive

Construction & commissioning

Competitive

Construction management

Competitive

Overheads & miscellaneous costs

Competitive

Contingency

Competitive

Total component cost

\$1,103,701.00

Component cost (in-service year)

\$1,200,238.00

Substation Upgrade Component

Component title	Waugh Chapel 500kV Upgrade
Project description	Competitive
Substation name	Waugh Chapel Substation
Substation zone	BGE
Substation upgrade scope	Expand Waugh Chapel 500kV station with one new double bus double breaker bay Connect the new Raphael to Waugh Chapel 500kV circuit to this new position at Waugh Chapel 500kV

Transformer Information

None	
New equipment description	Two (2) 500KV line disconnect switches, existing 500kV main bus and bus supports.
Substation assumptions	This proposal assumes that all necessary outages will be available; existing AC, DC, and telecom. systems will accommodate the new equipment; geotechnical data is available; the existing cable trench has space for the new cables; the existing control house has space for the new relay panels; existing yard station equipment does not need to be replaced except for the associated line relays and existing line interchange metering exists and does not need to be replaced.
Real-estate description	No substation expansion is anticipated
Construction responsibility	Competitive
Benefits/Comments	Competitive

Component Cost Details - In Current Year \$

Engineering & design	Competitive
Permitting / routing / siting	Competitive
ROW / land acquisition	Competitive
Materials & equipment	Competitive
Construction & commissioning	Competitive

Construction management	Competitive
Overheads & miscellaneous costs	Competitive
Contingency	Competitive
Total component cost	\$6,439,067.00
Component cost (in-service year)	\$7,002,278.00

Substation Upgrade Component

Component title	Conastone/Brighton 500kV Upgrade
Project description	Competitive
Substation name	Conastone/Brighton 500kV
Substation zone	BGE/PEPCO
Substation upgrade scope	Upgrade terminal equipment of the 500kV circuit 5011 at Conastone 500kV station, Brighton 500kV station, or both

Transformer Information

None	
New equipment description	New terminal equipment
Substation assumptions	This proposal assumes that all necessary outages will be available; existing AC, DC, and telecom. systems will accommodate the new equipment; geotechnical data is available; the existing cable trench has space for the new cables; the existing control house has space for the new relay panels; existing yard station equipment does not need to be replaced except for the associated line relays and existing line interchange metering exists and does not need to be replaced.
Real-estate description	No substation expansion is anticipated
Construction responsibility	Competitive
Benefits/Comments	Competitive

Component Cost Details - In Current Year \$

Engineering & design	Competitive
Permitting / routing / siting	Competitive
ROW / land acquisition	Competitive
Materials & equipment	Competitive
Construction & commissioning	Competitive
Construction management	Competitive
Overheads & miscellaneous costs	Competitive
Contingency	Competitive
Total component cost	\$.00
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-S177204538	204538	27STRABAN	204529	27GERMANTN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-W12204544	204544	27LINCOLN	204538	27STRABAN	1	115	227	Winter Gen Deliv	Included
2022W3-GD-S169204530	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Summer Gen Deliv	Included
2022W3-GD-W38 213869	213869	PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S119213869	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S177208047	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-S203200004	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W41 204544	204544	27LINCOLN	204538	27STRABAN	1	115	227	Winter Gen Deliv	Included
2022W3-GD-S281200065	200065	PCHBTM2S	200064	PCHBTM1S	Z1	500	230	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-W12	200532	26ROXBURY	235188	01GREENE	1	138	226/201	Winter Gen Deliv	Included
2022W3-GD-S125	204529	27GERMANTN	204530	27GERMANTN	1	115/138	227	Summer Gen Deliv	Included
2022W3-GD-S169	235463	01TANEY	235450	01CARROL	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W122	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Winter Gen Deliv	Included
2022W3-GD-S779	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Summer Gen Deliv	Included
2022W3-N1-ST21	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST21	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-S165	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W29	235463	01TANEY	235450	01CARROL	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W138	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-S276	204514	27TMI	204502	27JACKSON	1	230	227	Summer Gen Deliv	Included
2022W3-GD-W31	204550	27ORRTANNA	204544	27LINCOLN	1	115	227	Winter Gen Deliv	Included
2022W3-N1-ST20	200512	26LEWISTWN	200519	26REED TAP	1	115/115	226/226	Summer N-1 Thermal	Included
2022W3-N1-ST24	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Summer N-1	Included
2022W3-GD-S165	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S176	204538	27STRABAN	204529	27GERMANTN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S166	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-N1-ST21	208069	PPL-BGE TIE	220964	GRACETON	1	230/230	229/232	Summer N-1 Thermal	Included
2022W3-N1-ST21	221090	GLENARM2	221089	WINDYED1	1	115/115	232/232	Summer N-1 Thermal	Included
2022W3-GD-S166	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-W81	204544	27LINCOLN	204538	27STRABAN	1	115	227	Winter Gen Deliv	Included
2022W3-GD-S135	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S177	204538	27STRABAN	204529	27GERMANTN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-W94	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W50	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-S84	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S85	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S139	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	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-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-GD-S780	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Summer Gen Deliv	Included
2022W3-GD-S1272	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-W44	204550	27ORRTANNA	204544	27LINCOLN	1	115	227	Winter Gen Deliv	Included
2022W3-N1-ST212	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-S1692	235463	01TANEY	235450	01CARROL	1	138	201	Summer Gen Deliv	Included
2022W3-N1-ST222	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-S1662	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S1662	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S1782	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Summer Gen Deliv	Included
2022W3-GD-S1472	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W832	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-S1672	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Summer Gen Deliv	Included
2022W3-GD-S1702	204544	27LINCOLN	204538	27STRABAN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S3262	208048	OTCR	208047	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD-S1522	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Summer Gen Deliv	Included
2022W3-GD-S95	213844	NOTTINGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S1552	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-W58	204538	27STRABAN	204529	27GERMANTN	1	115	227	Winter Gen Deliv	Included
2022W3-GD-S96	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S2032	21092	FIVE.FOR	221096	ROCKRGE1	1	115	232	Summer Gen Deliv	Included
2022W3-N1-ST242	200512	26LEWISTWN	200519	26REED TAP	1	115/115	226/226	Summer N-1 Thermal	Included
2022W3-GD-S3122	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-S1662	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S1702	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-N1-ST102	21092	FIVE.FOR	221096	ROCKRGE1	1	115/115	232/232	Summer 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-GD-S1662	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Summer Gen Deliv	Included
2022W3-N1-ST232	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Summer N-1 Thermal	Included
2022W3-N1-ST232	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST232	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST232	208071	SAHA34TP	208069	PPL-BGE TIE	1	230/230	229/229	Summer N-1 Thermal	Included
2022W3-N1-ST232	208069	PPL-BGE TIE	220964	GRACETON	1	230/230	229/232	Summer N-1 Thermal	Included
2022W3-N1-ST116	207922	BRIS	204515	27YORKANA	1	230/230	229/227	Summer N-1 Thermal	Included
2022W3-N1-ST232	208069	PPL-BGE TIE	220964	GRACETON	1	230/230	229/232	Summer N-1 Thermal	Included
2022W3-GD-S1792	221092	FIVE.FOR	221096	ROCKRGE1	1	115	232	Summer Gen Deliv	Included
2022W3-GD-S1642	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD-W1212	200532	26ROXBURY	235188	01GREENE	1	138	226/201	Winter Gen Deliv	Included
2022W3-GD-S1792	220962	NWEST311	220972	GRANITE1	1	230	232	Summer Gen Deliv	Included
2022W3-GD-S1712	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W1082	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Winter Gen Deliv	Included
2022W3-GD-S1712	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S1793	213746	6SOJOURNER	313822	6RUNWAY	1	230	345	Summer Gen Deliv	Included
2022W3-GD-W842	204538	27STRABAN	204529	27GERMANTN	1	115	227	Winter Gen Deliv	Included
2022W3-GD-W1052	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Winter Gen Deliv	Included
2022W3-GD-S1672	242563	05BOXWD	242603	05CLIFFR	1	138	205	Summer Gen Deliv	Included
2022W3-N1-ST122	221092	FIVE.FOR	221096	ROCKRGE1	1	115/115	232/232	Summer N-1 Thermal	Included
2022W3-GD-W1012	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Winter Gen Deliv	Included
2022W3-GD-S1712	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-N1-ST9	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-W9912	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Winter Gen Deliv	Included
2022W3-GD-S1712	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W842	213844	NOTTINGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W112	200532	26ROXBURY	235188	01GREENE	1	138	226/201	Winter Gen Deliv	Included
2022W3-GD-S1792	204515	27YORKANA	208048	OTCR	1	230	227/229	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-W84	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W12	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Winter Gen Deliv	Included
2022W3-N1-ST7	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST12	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST8	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-S97	207922	BRIS	204515	27YORKANA	1	230	227/229	Summer Gen Deliv	Included
2022W3-GD-S170	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Summer Gen Deliv	Included
2022W3-N1-ST24	200512	26LEWISTWN	200519	26REED TAP	1	115/115	226/226	Summer N-1 Thermal	Included
2022W3-GD-S167	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Summer Gen Deliv	Included
2022W3-GD-W1	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-S167	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S103	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S104	213844	NOTTINGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-N1-ST6	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST12	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-S204	221092	FIVE.FOR	221096	ROCKRGE1	1	115	232	Summer Gen Deliv	Included
2022W3-GD-S340	204515	27YORKANA	208048	OTCR	1	230	227/229	Summer Gen Deliv	Included
2022W3-GD-S180	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Summer Gen Deliv	Included
2022W3-GD-S180	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Summer Gen Deliv	Included
2022W3-GD-W1	235463	01TANEY	235450	01CARROL	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S205	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W1	235463	01TANEY	235450	01CARROL	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S172	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S172	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-N1-ST13	207922	BRIS	204515	27YORKANA	1	230/230	229/227	Summer N-1 Thermal	Included
2022W3-N1-ST19	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST14	207922	BRIS	204515	27YORKANA	1	230/230	229/227	Summer N-1 Thermal	Included
2022W3-N1-ST20	204530	27GERMANTN	235463	01TANEY	1	138/138	227/201	Summer 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-GD-S171	235463	01TANEY	235450	01CARROL	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S171	235463	01TANEY	235450	01CARROL	1	138	201	Summer Gen Deliv	Included
2022W3-N1-ST13	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-WT14	200512	26LEWISTWN	200519	26REED TAP	1	115/115	226/226	Winter N-1 Thermal	Included
2022W3-N1-ST12	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST13	207922	BRIS	204515	27YORKANA	1	230/230	229/227	Summer N-1 Thermal	Included
2022W3-N1-ST13	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST14	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-S172	235463	01TANEY	235450	01CARROL	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S180	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Summer Gen Deliv	Included
2022W3-GD-S172	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S172	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S190	242563	05BOXWD	242603	05CLIFFR	1	138	205	Summer Gen Deliv	Included
2022W3-GD-S205	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S172	204544	27LINCOLN	204538	27STRABAN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S172	204544	27LINCOLN	204538	27STRABAN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S346	200065	PCHBTM2S	200066	PCHBTM1N	2	500	230	Summer Gen Deliv	Included
2022W3-N1-ST21	204530	27GERMANTN	235463	01TANEY	1	138/138	227/201	Summer N-1 Thermal	Included
2022W3-N1-ST22	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-WT15	207922	BRIS	204515	27YORKANA	1	230/230	229/227	Winter N-1 Thermal	Included
2022W3-N1-ST24	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST25	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-S173	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S201	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S202	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-N1-ST39	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST40	204544	27LINCOLN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST41	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Summer 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-N1-ST42	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-S172	204544	27LINCOLN	204538	27STRABAN	1	115	227	Summer Gen Deliv	Included
2022W3-N1-WT43	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-WT44	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-ST152	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD_L81	242563	05BOXWD	242603	05CLIFFR	1	138/138	205/205	Light Load Gen Deliv	Included
2022W3-N1-WT45	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-ST35	235463	01TANEY	235450	01CARROL	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST152	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-WT162	207922	BRIS	204515	27YORKANA	1	230/230	229/227	Winter N-1 Thermal	Included
2022W3-N1-ST37	235463	01TANEY	235450	01CARROL	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST50	204538	27STRABAN	204529	27GERMANTN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST51	204538	27STRABAN	204529	27GERMANTN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-WT62	235463	01TANEY	235450	01CARROL	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-ST52	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST53	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-S173	204538	27STRABAN	204529	27GERMANTN	1	115	227	Summer Gen Deliv	Included
2022W3-N1-WT53	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-ST162	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST162	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-WT58	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-WT60	235463	01TANEY	235450	01CARROL	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-LD-ST11	200004	CNASTONE	200064	PCHBTM1S	1	500/500	232/230	Load Deliverability	Included
2022W3-N1-ST59	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-LD-ST13	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included
2022W3-LD-ST12	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included
2022W3-N1-WT72	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-ST62	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer 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-GD-W85	213844	NOTTINGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-N1-ST63	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-W85	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Winter Gen Deliv	Included
2022W3-N1-LLT2	242563	05BOXWD	242603	05CLIFFR	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT2	242563	05BOXWD	242603	05CLIFFR	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT2	242563	05BOXWD	242603	05CLIFFR	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT2	242563	05BOXWD	242603	05CLIFFR	1	138/138	205/205	Light Load N-1	Included
2022W3-GD-W97	204515	27YORKANA	208048	OTCR	1	230	227/229	Winter Gen Deliv	Included
2022W3-N1-WT6	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-WT6	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-ST56	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST57	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST17	208069	PPL-BGE TIE	220964	GRACETON	1	230/230	229/232	Summer N-1 Thermal	Included
2022W3-N1-ST58	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST69	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST70	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST71	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-W10	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Winter Gen Deliv	Included
2022W3-N1-ST72	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-W73	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-N1-ST73	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-W74	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-N1-ST74	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-W63	204514	27TMI	204502	27JACKSON	1	230	227	Winter Gen Deliv	Included
2022W3-GD-W98	200065	PCHBTM2S	200064	PCHBTM1S	Z2	500	230	Winter Gen Deliv	Included
2022W3-GD-W64	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Winter Gen Deliv	Included
2022W3-GD-W65	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-W68	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	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-W99	200065	PCHBTM2S	200064	PCHBTM1S	Z1	500	230	Winter Gen Deliv	Included
2022W3-GD-W67	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W78	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Winter Gen Deliv	Included
2022W3-GD-W10	208048	OTCR	208047	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-GD-S18	1235596	01VASC T	235173	01EDGEWT	1	138	201	Summer Gen Deliv	Included
2022W3-N1-WT8	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-WT8	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-WT1	204538	27STRABAN	204529	27GERMANTN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-W86	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-GD-W88	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Winter Gen Deliv	Included
2022W3-N1-WT1	204538	27STRABAN	204529	27GERMANTN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-W88	213869	PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W87	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-W83	204515	27YORKANA	208048	OTCR	1	230	227/229	Winter Gen Deliv	Included
2022W3-GD-W88	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-GD-W85	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Winter Gen Deliv	Included
2022W3-GD-W93	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Winter Gen Deliv	Included
2022W3-N1-WT1	235463	01TANEY	235450	01CARROL	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-S20	221090	GLENARM2	221089	WINDYED1	1	115	232	Summer Gen Deliv	Included
2022W3-GD-S17	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W89	207922	BRIS	204515	27YORKANA	1	230	227/229	Winter Gen Deliv	Included
2022W3-N1-WT1	204530	27GERMANTN	235463	01TANEY	1	138/138	227/201	Winter N-1 Thermal	Included
2022W3-GD-W95	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-S8	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S16	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-W13	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W89	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-GD-W89	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	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-W1240	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Winter Gen Deliv	Included
2022W3-GD-W3	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Winter Gen Deliv	Included
2022W3-N1-WT3	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-W746	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Winter Gen Deliv	Included
2022W3-N1-WT4	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-LD-ST15	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included
2022W3-LD-ST14	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included
2022W3-GD-W903	207922	BRIS	204515	27YORKANA	1	230	227/229	Winter Gen Deliv	Included
2022W3-LD-ST17	200004	CNASTONE	200003	BRIGHTON	1	500/500	232/233	Load Deliverability	Included
2022W3-LD-ST16	200004	CNASTONE	200003	BRIGHTON	1	500/500	232/233	Load Deliverability	Included
2022W3-GD-S1643	204550	27ORRTANNA	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-N1-ST184	208071	SAHA34TP	208069	PPL-BGE TIE	1	230/230	229/229	Summer N-1 Thermal	Included
2022W3-GD-S1642	235463	01TANEY	235450	01CARROL	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W96	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-N1-WT19204	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-W902	213869	PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-N1-WT19204	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-W97	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-N1-WT19205	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-S13	235484	01MESSCK	235490	01MORGAN	1	138	201	Summer Gen Deliv	Included
2022W3-N1-WT19204	204538	27STRABAN	204529	27GERMANTN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-S14	235484	01MESSCK	235490	01MORGAN	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S1642	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Summer Gen Deliv	Included
2022W3-GD-S1752	204529	27GERMANTN	204530	27GERMANTN	1	115/138	227	Summer Gen Deliv	Included
2022W3-GD-S1642	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S15	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S1752	208395	FARO FF	208393	FARO DC TIE	2	69/115	229	Summer Gen Deliv	Included
2022W3-GD-W12	204530	27GERMANTN	235463	01TANEY	1	138	227/201	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-S105213846		NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S247208047		PPL-BGE TIE	220963	CONASTON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-W15 213844		NOTTINGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W10200004		CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-S110207922		BRIS	204515	27YORKANA	1	230	227/229	Summer Gen Deliv	Included
2022W3-GD-W16 213846		NOTTREAC	213869	PCHBTMTP	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W9 213869		PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S167204539		27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Summer Gen Deliv	Included
2022W3-GD-W19 207922		BRIS	204515	27YORKANA	1	230	227/229	Winter Gen Deliv	Included
2022W3-GD-S260208048		OTCR	208047	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-N1-ST19200512		26LEWISTWN	200519	26REED TAP	1	115/115	226/226	Summer N-1 Thermal	Included
2022W3-N1-ST19205912		AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST19204539		27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-S206221090		GLENARM2	221089	WINDYED1	1	115	232	Summer Gen Deliv	Included
2022W3-GD-W90208069		PPL-BGE TIE	220964	GRACETON	1	230	229/232	Winter Gen Deliv	Included
2022W3-LD-ST19200004		CNASTONE	200003	BRIGHTON	1	500/500	232/233	Load Deliverability	Included
2022W3-GD-S164204550		27ORRTANNA	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S175200512		26LEWISTWN	200519	26REED TAP	1	115	226	Summer Gen Deliv	Included
2022W3-LD-ST18200004		CNASTONE	200003	BRIGHTON	1	500/500	232/233	Load Deliverability	Included
2022W3-GD-S23 204544		27LINCOLN	204538	27STRABAN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S175204538		27STRABAN	204529	27GERMANTN	1	115	227	Summer Gen Deliv	Included
2022W3-LD-ST21 200003		BRIGHTON	200004	CNASTONE	1	500/500	233/232	Load Deliverability	Included
2022W3-GD-S164204544		27LINCOLN	204538	27STRABAN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S175200532		26ROXBURY	235188	01GREENE	1	138	226/201	Summer Gen Deliv	Included
2022W3-N1-ST18204538		27STRABAN	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-LD-ST20 208047		PPL-BGE TIE	220963	CONASTON	1	230/230	229/232	Load Deliverability	Included
2022W3-GD-S176208395		FARO FF	208393	FARO DC TIE	1	69/115	229	Summer Gen Deliv	Included
2022W3-LD-ST22 208048		OTCR	208047	PPL-BGE TIE	1	230/230	229/229	Load Deliverability	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-N1-ST193	313746	6SOJOURNER	313822	6RUNWAY	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-W91	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-N1-WT232	204530	27GERMANTN	235463	01TANEY	1	138/138	227/201	Winter N-1 Thermal	Included
2022W3-GD-S81N2	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S118N2	204544	27LINCOLN	204538	27STRABAN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S168N2	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Summer Gen Deliv	Included
2022W3-GD-W116	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Winter Gen Deliv	Included
2022W3-GD-S168N2	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Summer Gen Deliv	Included
2022W3-GD-S123N2	235463	01TANEY	235450	01CARROL	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W92	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-N1-ST244N2	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1	Included
2022W3-GD-S165N2	213844	NOTTINGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W28	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Winter Gen Deliv	Included
2022W3-GD-W116	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-N1-ST84	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST205	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-S165N2	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Summer Gen Deliv	Included
2022W3-N1-ST205	313746	6SOJOURNER	313822	6RUNWAY	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S164N2	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S168N2	204514	27TMI	204502	27JACKSON	1	230	227	Summer Gen Deliv	Included
2022W3-GD-S176N2	242563	05BOXWD	242603	05CLIFFR	1	138	205	Summer Gen Deliv	Included
2022W3-N1-WT202	204530	27GERMANTN	235463	01TANEY	1	138/138	227/201	Winter N-1 Thermal	Included
2022W3-GD-W80N2	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Winter Gen Deliv	Included
2022W3-GD-S47	204538	27STRABAN	204529	27GERMANTN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S262	2235180	01FAYETT	235271	01WWAYNE	1	138	201	Summer Gen Deliv	Included
2022W3-N1-ST192	200512	26LEWISTWN	200519	26REED TAP	1	115/115	226/226	Summer N-1 Thermal	Included
2022W3-GD-S76N2	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S165N2	204538	27STRABAN	204529	27GERMANTN	1	115	227	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-S1682	204544	27LINCOLN	204538	27STRABAN	1	115	227	Summer Gen Deliv	Included
2022W3-N1-ST200	200512	26LEWISTWN	200519	26REED TAP	1	115/115	226/226	Summer N-1 Thermal	Included
2022W3-GD-S42N	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S1652	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-N1-ST202	213846	NOTTREAC	213869	PCHBTMTP	1	230/230	230/230	Summer N-1 Thermal	Included
2022W3-GD-S1652	207922	BRIS	204515	27YORKANA	1	230	227/229	Summer Gen Deliv	Included
2022W3-N1-ST82	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST202	213844	NOTTINGHM	213846	NOTTREAC	1	230/230	230/230	Summer N-1 Thermal	Included
2022W3-GD-S1652	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-N1-ST202	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included

New Flowgates

Competitive

Financial Information

Capital spend start date 01/2024

Construction start date 11/2025

Project Duration (In Months) 53

Cost Containment Commitment

Cost cap (in current year) Confidential

Cost cap (in-service year) Confidential

Components covered by cost containment

1. Peach Bottom-New Raphael 500kV - PSEG
2. New Raphael-Waugh Chapel 500kV line - PSEG

3. Doubs-Peach Bottom 500kV Line - PSEG

4. New Raphael 500kV Station - PSEG

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	No
AFUDC	No
Escalation	Yes
Additional Information	Confidential
Is the proposer offering a binding cap on ROE?	Yes
Would this ROE cap apply to the determination of AFUDC?	Yes
Would the proposer seek to increase the proposed ROE if FERC finds that a higher ROE would not be unreasonable?	No
Is the proposer offering a Debt to Equity Ratio cap?	Confidential
Additional cost containment measures not covered above	Confidential

Additional Comments

None