

# Mid-Atlantic Power Pathway (MAPP)

## General Information

Proposing entity name	PEPCO
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	691
Project title	Mid-Atlantic Power Pathway (MAPP)
Project description	Exelon is proposing a 230 mile, 500 kV AC / 400 kV DC high-voltage transmission line originating in Northern Virginia, crossing Maryland, traveling up the Delmarva Peninsula and terminating in southern New Jersey.
Email	Proprietary Information
Project in-service date	12/2030
Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	Proprietary Information

## Project Components

1. Hallowing Point HVDC Converter
2. Possum Pt Substation
3. Burches Hill Substation
4. Chalk Point Substation
5. Calvert Cliffs Substation

6. Salem Substation
7. Mission HVDC Converter Station
8. Possum Pt to Burches Hill
9. Burches Hill to Cheltenham
10. Cheltenham to Chalk Pt
11. Chalk Pt to Hallowing Pt
12. Hallowing Pt to Calvert Cliffs
13. HVDC Hallowing Pt to Mission
14. Mission to Salem

### Greenfield Substation Component

Component title	Hallowing Point HVDC Converter
Project description	The Hallowing Pt Converter Station Site shall be developed for the ultimate arrangement of two (2) 1320 MW HVDC Converter Stations, which will be constructed as part of the Work, and an eight (8) position 500kV AC Switchyard in a breaker-and-a-half configuration
Substation name	Hallowing Pt Substation
Substation description	HVDC Coverter Stationg
Nominal voltage	DC
Nominal voltage	500/±400 kV

### Transformer Information

	Name	Capacity (MVA)	
Transformer		1320	
	<b>High Side</b>	<b>Low Side</b>	<b>Tertiary</b>
Voltage (kV)	500	±400 kV	
	<b>Name</b>	<b>Capacity (MVA)</b>	

Transformer		1320	
	<b>High Side</b>	<b>Low Side</b>	<b>Tertiary</b>
Voltage (kV)	500	±400 kV	
Major equipment description	HVDC Converter Station		
	<b>Normal ratings</b>	<b>Emergency ratings</b>	
Summer (MVA)	1320.000000	1320.000000	
Winter (MVA)	1320.000000	1320.000000	
Environmental assessment	<p>MAPP Steps to Protect the Environment • Mapping out the boundaries of wetland areas, using criteria based on regulatory agencies • Identification of threatened and endangered plant and animal species and their habitat, such as the Delmarva Fox Squirrel • Chesapeake Bay studies including: underwater vegetation, aquatic species, essential fish habitat, shellfish, cultural studies, sediment characterization, sport and commercial fishing Engineering and Construction Measures • Develop and implement soil erosion and sediment control plans to prevent sediment from entering waterways • Utilize temporary matting for construction and equipment in wetlands to prevent subsurface disturbance • Implement construction timing restrictions for threatened and endangered animal species and install protective fencing around areas of sensitive plant species populations to prevent access in these areas.</p>		
Outreach plan	TBD		
Land acquisition plan	Land is Owned by the TO		
Construction responsibility	PEPCO		
Benefits/Comments	Proprietary Information		
<b>Component Cost Details - In Current Year \$</b>			
Engineering & design	Proprietary Information		
Permitting / routing / siting	Proprietary Information		
ROW / land acquisition	Proprietary Information		

Materials & equipment	Proprietary Information
Construction & commissioning	Proprietary Information
Construction management	Proprietary Information
Overheads & miscellaneous costs	Proprietary Information
Contingency	Proprietary Information
Total component cost	\$55,462,646.00
Component cost (in-service year)	\$60,198,930.00

### **Substation Upgrade Component**

Component title	Possum Pt Substation
Project description	Add 500kV Breaker positions to accommodate 2nd Circuit on existing 500kV Ring Bus
Substation name	Possum Pt Substation
Substation zone	Dominion
Substation upgrade scope	Add 500kV Breaker positions to accommodate 2nd Circuit on existing 500kV Ring Bus

### **Transformer Information**

None	
New equipment description	A 4000 Amp Breaker, Disconnects, Relays and related terminal equipment
Substation assumptions	Upgrades can fit within the existing substation footprint without the need for additional land preparation.
Real-estate description	
Construction responsibility	Dominion
Benefits/Comments	Proprietary Information

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

Engineering & design	Proprietary Information
Permitting / routing / siting	Proprietary Information
ROW / land acquisition	Proprietary Information
Materials & equipment	Proprietary Information
Construction & commissioning	Proprietary Information
Construction management	Proprietary Information
Overheads & miscellaneous costs	Proprietary Information
Contingency	Proprietary Information
Total component cost	\$6,828,700.00
Component cost (in-service year)	\$7,323,835.00

### **Substation Upgrade Component**

Component title	Burches Hill Substation
Project description	Add 500kV Breaker positions to accommodate 2nd Circuit on existing 500kV breaker and a half bay for 2nd Possum Pt to Burches 500kV Circuit. Add 500kV Breaker positions to accommodate 2nd Circuit on existing 500kV breaker and a half bay for 2nd Burches to Cheltenham 500kV Circuit.
Substation name	Burches Hill Substation
Substation zone	PEPCO
Substation upgrade scope	Add 500kV Breaker positions to accommodate 2nd Circuit on existing 500kV breaker and a half bay for 2nd Possum Pt to Burches 500kV Circuit. Add 500kV Breaker positions to accommodate 2nd Circuit on existing 500kV breaker and a half bay for 2nd Burches to Cheltenham 500kV Circuit.

### **Transformer Information**

None	
New equipment description	Add Two 4000 Amp Breaker, Disconnects, Relays and related terminal equipment

Substation assumptions Upgrades can fit within the existing substation footprint without the need for additional land preparation.

Real-estate description

Construction responsibility PEPCO

Benefits/Comments Proprietary Information

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

Engineering & design Proprietary Information

Permitting / routing / siting Proprietary Information

ROW / land acquisition Proprietary Information

Materials & equipment Proprietary Information

Construction & commissioning Proprietary Information

Construction management Proprietary Information

Overheads & miscellaneous costs Proprietary Information

Contingency Proprietary Information

Total component cost \$7,028,843.00

Component cost (in-service year) \$7,538,490.00

**Substation Upgrade Component**

Component title Chalk Point Substation

Project description Add 500kV Breaker positions to accommodate 2nd Circuit on existing 500kV breaker and a half bay for 2nd Cheltenham to Chalk Pt 500kV Circuit Add 500kV Breaker positions to accommodate 2nd Circuit on existing 500kV breaker and a half bay for 2nd Chalk Pt to Hollowing Point 500kV Circuit

Substation name Chalk Point Substation

Substation zone PEPCO

Substation upgrade scope	Add 500kV Breaker positions to accommodate 2nd Circuit on existing 500kV breaker and a half bay for 2nd Cheltenham to Chalk Pt 500kV Circuit Add 500kV Breaker positions to accommodate 2nd Circuit on existing 500kV breaker and a half bay for 2nd Chalk Pt to Hollowing Point 500kV Circuit
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**Transformer Information**

None	
New equipment description	Add Two 4000 Amp Breaker, Disconnects, Relays and related terminal equipment
Substation assumptions	Upgrades can fit within the existing substation footprint without the need for additional land preparation.
Real-estate description	
Construction responsibility	PEPCO
Benefits/Comments	Proprietary Information

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

Engineering & design	Proprietary Information
Permitting / routing / siting	Proprietary Information
ROW / land acquisition	Proprietary Information
Materials & equipment	Proprietary Information
Construction & commissioning	Proprietary Information
Construction management	Proprietary Information
Overheads & miscellaneous costs	Proprietary Information
Contingency	Proprietary Information
Total component cost	\$7,028,843.00
Component cost (in-service year)	\$7,538,490.00

**Substation Upgrade Component**

Component title	Calvert Cliffs Substation
Project description	Add an additional 500kV breaker in a half bay to existing 3-Bay Salem substation with a 500kV breakers to accommodate a new Mission to Salem 500kV Circuit
Substation name	Calvert Cliffs Substation
Substation zone	BGE
Substation upgrade scope	Add an additional 500kV breaker in a half bay to existing 3-Bay Salem substation with a 500kV breakers to accommodate a new Mission to Salem 500kV Circuit

### **Transformer Information**

None	
New equipment description	Add a 4000 Amp Breaker, Disconnects, Relays and related terminal equipment
Substation assumptions	Upgrades can fit within the existing substation footprint without the need for additional land preparation.
Real-estate description	
Construction responsibility	BGE
Benefits/Comments	Proprietary Information

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

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

Total component cost \$6,828,700.00

Component cost (in-service year) \$7,323,835.00

### **Substation Upgrade Component**

Component title Salem Substation

Project description Add an additional 500kV breaker in a half bay to existing 3-Bay Salem substation with a 500kV breakers to accommodate a new Mission to Salem 500kV Circuit

Substation name Salem Substation

Substation zone PSEG

Substation upgrade scope Add an additional 500kV breaker in a half bay to existing 3-Bay Salem substation with a 500kV breakers to accommodate a new Mission to Salem 500kV Circuit

### **Transformer Information**

None

New equipment description Add a 4000 Amp Breaker, Disconnects, Relays and related terminal equipment

Substation assumptions Upgrades can fit within the existing substation footprint without the need for additional land preparation.

Real-estate description

Construction responsibility PSEG

Benefits/Comments Proprietary Information

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

Engineering & design Proprietary Information

Permitting / routing / siting Proprietary Information

ROW / land acquisition Proprietary Information

Materials & equipment Proprietary Information

Construction & commissioning	Proprietary Information
Construction management	Proprietary Information
Overheads & miscellaneous costs	Proprietary Information
Contingency	Proprietary Information
Total component cost	\$6,828,699.72
Component cost (in-service year)	\$7,323,835.00

### Greenfield Substation Component

Component title	Mission HVDC Converter Station
Project description	The Mission Converter Station Site shall be developed for the ultimate arrangement of two (2) 1320 MW HVDC Converter Stations, which will be constructed as part of the Work, and an eight (8) position 500kV AC Switchyard in a breaker-and-a-half configuration
Substation name	Mission Substation
Substation description	HVDC Converter Station
Nominal voltage	DC
Nominal voltage	500/±400 kV

### Transformer Information

	Name	Capacity (MVA)
Transformer		1320
	<b>High Side</b>	<b>Low Side</b>
Voltage (kV)	500	±400 kV
	<b>Name</b>	<b>Capacity (MVA)</b>
Transformer		1320

	<b>High Side</b>	<b>Low Side</b>	<b>Tertiary</b>
Voltage (kV)	500	±400 kV	
Major equipment description	HVDC Converter Station		
	<b>Normal ratings</b>		<b>Emergency ratings</b>
Summer (MVA)	1320.000000		1320.000000
Winter (MVA)	1320.000000		1320.000000
Environmental assessment	<p>MAPP Steps to Protect the Environment • Mapping out the boundaries of wetland areas, using criteria based on regulatory agencies • Identification of threatened and endangered plant and animal species and their habitat, such as the Delmarva Fox Squirrel • Chesapeake Bay studies including: underwater vegetation, aquatic species, essential fish habitat, shellfish, cultural studies, sediment characterization, sport and commercial fishing Engineering and Construction Measures • Develop and implement soil erosion and sediment control plans to prevent sediment from entering waterways • Utilize temporary matting for construction and equipment in wetlands to prevent subsurface disturbance • Implement construction timing restrictions for threatened and endangered animal species and install protective fencing around areas of sensitive plant species populations to prevent access in these areas</p>		
Outreach plan	TBD		
Land acquisition plan	Land is Owned by the TO		
Construction responsibility	DPL		
Benefits/Comments	Proprietary Information		
<b>Component Cost Details - In Current Year \$</b>			
Engineering & design	Proprietary Information		
Permitting / routing / siting	Proprietary Information		
ROW / land acquisition	Proprietary Information		
Materials & equipment	Proprietary Information		

Construction & commissioning	Proprietary Information
Construction management	Proprietary Information
Overheads & miscellaneous costs	Proprietary Information
Contingency	Proprietary Information
Total component cost	\$55,462,646.00
Component cost (in-service year)	\$60,198,930.00

**Greenfield Transmission Line Component**

Component title	Possum Pt to Burches Hill
Project description	Build 2nd Potomac River Crossing OH 500kV Circuit from Potomac Rivers Edge-VA to Potomac Rivers Edge-MD Add 2nd 500kV Circuit to existing 500kV Towers from Potomac Rivers Edge-MD to Burches Hill
Point A	Possum Pt
Point B	Burches Hill
Point C	

	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	2812.000000	3099.000000
Winter (MVA)	3203.000000	3672.000000
Conductor size and type	Triple Bundled 1590 ACSR Lapwing	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	
General route description	New OH Potomac Rive Crossing then on existing ROW and existing Poles	

Terrain description	TBD
Right-of-way width by segment	33 Miles 200ft on existing ROW. but 57ft will need to be cleared.
Electrical transmission infrastructure crossings	None
Civil infrastructure/major waterway facility crossing plan	Six new Towers beside existing towers in Potomace River
Environmental impacts	MAPP Steps to Protect the Environment • Mapping out the boundaries of wetland areas, using criteria based on regulatory agencies • Identification of threatened and endangered plant and animal species and their habitat, such as the Delmarva Fox Squirrel • Chesapeake Bay studies including: underwater vegetation, aquatic species, essential fish habitat, shellfish, cultural studies, sediment characterization, sport and commercial fishing Engineering and Construction Measures • Develop and implement soil erosion and sediment control plans to prevent sediment from entering waterways • Utilize temporary matting for construction and equipment in wetlands to prevent subsurface disturbance • Implement construction timing restrictions for threatened and endangered animal species and install protective fencing around areas of sensitive plant species populations to prevent access in these area
Tower characteristics	Six new towers in the Potomac River adject to the six existing towers. The from the MD side of the River to Burches Hill there are existing 500kV steel H frame towers with an open position that will be utilize for this project.
Construction responsibility	PEPCO
Benefits/Comments	Proprietary Information
<b>Component Cost Details - In Current Year \$</b>	
Engineering & design	Proprietary Information
Permitting / routing / siting	Proprietary Information
ROW / land acquisition	Proprietary Information
Materials & equipment	Proprietary Information
Construction & commissioning	Proprietary Information
Construction management	Proprietary Information
Overheads & miscellaneous costs	Proprietary Information

Contingency	Proprietary Information
Total component cost	\$143,505,516.00
Component cost (in-service year)	\$155,761,951.00

### Greenfield Transmission Line Component

Component title	Burches Hill to Cheltenham
Project description	Add 2nd 500kV Circuit to existing 500kV Towers from Burches Hill to Cheltenham 4.5 Miles
Point A	Burches Hill
Point B	Cheltenham

Point C		
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	2812.000000	3099.000000
Winter (MVA)	3203.000000	3672.000000
Conductor size and type	Triple Bundled 1590 ACSR Lapwing	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	
General route description	To be built on existing ROW and existing Poles	
Terrain description	TBD	
Right-of-way width by segment	4.5 Miles 200ft on existing ROW. but 57ft will need to be cleared.	
Electrical transmission infrastructure crossings	None	
Civil infrastructure/major waterway facility crossing plan	None	

Environmental impacts	MAPP Steps to Protect the Environment • Mapping out the boundaries of wetland areas, using criteria based on regulatory agencies • Identification of threatened and endangered plant and animal species and their habitat, such as the Delmarva Fox Squirrel • Chesapeake Bay studies including: underwater vegetation, aquatic species, essential fish habitat, shellfish, cultural studies, sediment characterization, sport and commercial fishing Engineering and Construction Measures • Develop and implement soil erosion and sediment control plans to prevent sediment from entering waterways • Utilize temporary matting for construction and equipment in wetlands to prevent subsurface disturbance • Implement construction timing restrictions for threatened and endangered animal species and install protective fencing around areas of sensitive plant species populations to prevent access in these areas.
Tower characteristics	Existing Steel H Frame
Construction responsibility	PEPCO
Benefits/Comments	Proprietary Information
<b>Component Cost Details - In Current Year \$</b>	
Engineering & design	Proprietary Information
Permitting / routing / siting	Proprietary Information
ROW / land acquisition	Proprietary Information
Materials & equipment	Proprietary Information
Construction & commissioning	Proprietary Information
Construction management	Proprietary Information
Overheads & miscellaneous costs	Proprietary Information
Contingency	Proprietary Information
Total component cost	\$10,094,471.00
Component cost (in-service year)	\$10,956,498.00
<b>Greenfield Transmission Line Component</b>	
Component title	Cheltenham to Chalk Pt

Project description	Add 2nd 500kV Circuit to existing 500kV Towers from Cheltenham to Chalk Pt
Point A	Cheltenham
Point B	Chalk
Point C	

	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	2812.000000	3099.000000
Winter (MVA)	3203.000000	3672.000000
Conductor size and type	Triple Bundled 1590 ACSR Lapwing	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	
General route description	To be built on existing ROW and existing Poles	
Terrain description	TBD	
Right-of-way width by segment	9.5 Miles 200ft on existing ROW. but 57ft will need to be cleared.	
Electrical transmission infrastructure crossings	None	
Civil infrastructure/major waterway facility crossing plan	None	
Environmental impacts	<p>MAPP Steps to Protect the Environment • Mapping out the boundaries of wetland areas, using criteria based on regulatory agencies • Identification of threatened and endangered plant and animal species and their habitat, such as the Delmarva Fox Squirrel • Chesapeake Bay studies including: underwater vegetation, aquatic species, essential fish habitat, shellfish, cultural studies, sediment characterization, sport and commercial fishing Engineering and Construction Measures • Develop and implement soil erosion and sediment control plans to prevent sediment from entering waterways • Utilize temporary matting for construction and equipment in wetlands to prevent subsurface disturbance • Implement construction timing restrictions for threatened and endangered animal species and install protective fencing around areas of sensitive plant species populations to prevent access in these areas.</p>	

Tower characteristics	Existing Steel H Frame
Construction responsibility	PEPCO
Benefits/Comments	Proprietary Information

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

Engineering & design	Proprietary Information
Permitting / routing / siting	Proprietary Information
ROW / land acquisition	Proprietary Information
Materials & equipment	Proprietary Information
Construction & commissioning	Proprietary Information
Construction management	Proprietary Information
Overheads & miscellaneous costs	Proprietary Information
Contingency	Proprietary Information
Total component cost	\$34,726,220.00
Component cost (in-service year)	\$37,691,698.00

**Greenfield Transmission Line Component**

Component title	Chalk Pt to Hallowing Pt
Project description	Cut into existing Chalk Point to Calvert Cliffs 500kV Circuit Add 2nd 500kV Circuit from Chalk Pt to Hallowing Point
Point A	Chalk Pt
Point B	Hallowing Pt
Point C	

**Normal ratings**

**Emergency ratings**

Summer (MVA)	2812.000000	3099.000000
Winter (MVA)	3203.000000	3672.000000
Conductor size and type	Triple Bundled 1590 ACSR Lapwing	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	
General route description	To be built on existing ROW and New monopoles adjacent too existing line	
Terrain description	TBD	
Right-of-way width by segment	7 Miles 200ft on existing ROW.	
Electrical transmission infrastructure crossings	None	
Civil infrastructure/major waterway facility crossing plan	None	
Environmental impacts	<p>MAPP Steps to Protect the Environment • Mapping out the boundaries of wetland areas, using criteria based on regulatory agencies • Identification of threatened and endangered plant and animal species and their habitat, such as the Delmarva Fox Squirrel • Chesapeake Bay studies including: underwater vegetation, aquatic species, essential fish habitat, shellfish, cultural studies, sediment characterization, sport and commercial fishing Engineering and Construction Measures • Develop and implement soil erosion and sediment control plans to prevent sediment from entering waterways • Utilize temporary matting for construction and equipment in wetlands to prevent subsurface disturbance • Implement construction timing restrictions for threatened and endangered animal species and install protective fencing around areas of sensitive plant species populations to prevent access in these areas.</p>	
Tower characteristics	Steel Monopole	
Construction responsibility	PEPCO	
Benefits/Comments	Proprietary Information	
<b>Component Cost Details - In Current Year \$</b>		
Engineering & design	Proprietary Information	

Permitting / routing / siting	Proprietary Information
ROW / land acquisition	Proprietary Information
Materials & equipment	Proprietary Information
Construction & commissioning	Proprietary Information
Construction management	Proprietary Information
Overheads & miscellaneous costs	Proprietary Information
Contingency	Proprietary Information
Total component cost	\$2,315,365.00
Component cost (in-service year)	\$2,513,087.00

### Greenfield Transmission Line Component

Component title	Hallowing Pt to Calvert Cliffs
Project description	Cut into existing Chalk Point to Calvert Cliffs 500kV Circuit Add 2nd 500kV Circuit from Hallowing Pt to Calvert Cliffs
Point A	Hallowing Pt
Point B	Calbert Cliffs
Point C	

	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	2812.000000	3099.000000
Winter (MVA)	3203.000000	3672.000000
Conductor size and type	Triple Bundled 1590 ACSR Lapwing	
Nominal voltage	AC	
Nominal voltage	500	

Line construction type	Overhead
General route description	To be built on existing ROW and New monopoles adjacent too existing line
Terrain description	TBD
Right-of-way width by segment	10 Miles 200ft on existing ROW.
Electrical transmission infrastructure crossings	None
Civil infrastructure/major waterway facility crossing plan	None
Environmental impacts	MAPP Steps to Protect the Environment • Mapping out the boundaries of wetland areas, using criteria based on regulatory agencies • Identification of threatened and endangered plant and animal species and their habitat, such as the Delmarva Fox Squirrel • Chesapeake Bay studies including: underwater vegetation, aquatic species, essential fish habitat, shellfish, cultural studies, sediment characterization, sport and commercial fishing Engineering and Construction Measures • Develop and implement soil erosion and sediment control plans to prevent sediment from entering waterways • Utilize temporary matting for construction and equipment in wetlands to prevent subsurface disturbance • Implement construction timing restrictions for threatened and endangered animal species and install protective fencing around areas of sensitive plant species populations to prevent access in these areas.
Tower characteristics	Steel Monopole
Construction responsibility	BGE
Benefits/Comments	Proprietary Information
<b>Component Cost Details - In Current Year \$</b>	
Engineering & design	Proprietary Information
Permitting / routing / siting	Proprietary Information
ROW / land acquisition	Proprietary Information
Materials & equipment	Proprietary Information
Construction & commissioning	Proprietary Information
Construction management	Proprietary Information

Overheads & miscellaneous costs	Proprietary Information
Contingency	Proprietary Information
Total component cost	\$2,315,365.00
Component cost (in-service year)	\$2,483,247.00

### Greenfield Transmission Line Component

Component title	HVDC Hallowing Pt to Mission
Project description	Two HVDC Land Cable Systems section of approximately 3.7 miles from the Hallowing Pt Calvert County Converter Station Site to the landing Site for the Chesapeake Bay Cable System on the west shore of the Chesapeake Bay Two HVDC submarine cable sections of approximately 39.4 miles from the landing Site at the western shore of Chesapeake Bay, across the Chesapeake Bay and up the Choptank River to the landing Site in Dorchester County, Maryland Two HVDC OH circuits from the Choptank landing site to the New Mission Sussex County Converter Station Sites is approximately 40.7 miles in length.
Point A	Hallowing Pt
Point B	Mission
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	1320.000000	1320.000000
Winter (MVA)	1320.000000	1320.000000
Conductor size and type	HVDC	
Nominal voltage	DC	
Nominal voltage	±400 kV	
Line construction type	Overhead, Underground, Submarine	

General route description	From Hallowing Point Converter Station underground cable to the Chesnut Landing site where it transitions to submarine cable across the Chesapeake Bay to a Choptank landing site to transfer to overhead to be built on existing ROW and New monopoles adjacent too existing 138kV to the new Mission Converter Station
Terrain description	TBD
Right-of-way width by segment	3.7 Miles Underground Hallowing Point to Chesnut 39.4 Miles Submarine Cable across Chesapeake Bay and Choptank River 40.7 Miles 150ft on existing ROW. Choptank to Mission
Electrical transmission infrastructure crossings	None
Civil infrastructure/major waterway facility crossing plan	Submarine Chesapeake Bay and Choptank River crossing
Environmental impacts	MAPP Steps to Protect the Environment • Mapping out the boundaries of wetland areas, using criteria based on regulatory agencies • Identification of threatened and endangered plant and animal species and their habitat, such as the Delmarva Fox Squirrel • Chesapeake Bay studies including: underwater vegetation, aquatic species, essential fish habitat, shellfish, cultural studies, sediment characterization, sport and commercial fishing Engineering and Construction Measures • Develop and implement soil erosion and sediment control plans to prevent sediment from entering waterways • Utilize temporary matting for construction and equipment in wetlands to prevent subsurface disturbance • Implement construction timing restrictions for threatened and endangered animal species and install protective fencing around areas of sensitive plant species populations to prevent access in these areas.
Tower characteristics	Steel Monopole
Construction responsibility	DPL
Benefits/Comments	Proprietary Information
<b>Component Cost Details - In Current Year \$</b>	
Engineering & design	Proprietary Information
Permitting / routing / siting	Proprietary Information
ROW / land acquisition	Proprietary Information
Materials & equipment	Proprietary Information
Construction & commissioning	Proprietary Information

Construction management	Proprietary Information
Overheads & miscellaneous costs	Proprietary Information
Contingency	Proprietary Information
Total component cost	\$1,370,905,662.00
Component cost (in-service year)	\$1,548,506,794.00

### Greenfield Transmission Line Component

Component title	Mission to Salem
Project description	Build New 500kV line within existing 230kV ROW from the new Mission Converter Station to Salem Substation
Point A	Mission
Point B	Salem
Point C	

	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	2812.000000	3099.000000
Winter (MVA)	3203.000000	3672.000000
Conductor size and type	triple bundle 1590 ACSR	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	
General route description	Rebuild one existing 230kV circuit within the current ROW with a monopole double circuit tower with one 500kV and one 230kV circuit.	
Terrain description	TBD	

Right-of-way width by segment	82 Miles 150ft on existing ROW. Mission to Salem. There is not an existing ROW for the Delaware River Crossing.
Electrical transmission infrastructure crossings	None
Civil infrastructure/major waterway facility crossing plan	Overhead Delaware River crossing
Environmental impacts	MAPP Steps to Protect the Environment • Mapping out the boundaries of wetland areas, using criteria based on regulatory agencies • Identification of threatened and endangered plant and animal species and their habitat, such as the Delmarva Fox Squirrel • Chesapeake Bay studies including: underwater vegetation, aquatic species, essential fish habitat, shellfish, cultural studies, sediment characterization, sport and commercial fishing Engineering and Construction Measures • Develop and implement soil erosion and sediment control plans to prevent sediment from entering waterways • Utilize temporary matting for construction and equipment in wetlands to prevent subsurface disturbance • Implement construction timing restrictions for threatened and endangered animal species and install protective fencing around areas of sensitive plant species populations to prevent access in these areas.
Tower characteristics	Steel Monopole
Construction responsibility	DPL
Benefits/Comments	Proprietary Information
<b>Component Cost Details - In Current Year \$</b>	
Engineering & design	Proprietary Information
Permitting / routing / siting	Proprietary Information
ROW / land acquisition	Proprietary Information
Materials & equipment	Proprietary Information
Construction & commissioning	Proprietary Information
Construction management	Proprietary Information
Overheads & miscellaneous costs	Proprietary Information
Contingency	Proprietary Information
Total component cost	\$280,946,653.00

Component cost (in-service year)

\$317,343,353.00

## 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-S173200064		PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-LD-ST11200004		CNASTONE	200064	PCHBTM1S	1	500/500	232/230	Load Deliverability	Included
2022W3-GD-S201200004		CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S202200004		CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-LD-ST13200064		PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included
2022W3-GD-S203200004		CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S205200004		CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W10200004		CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-LD-ST12200064		PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included
2022W3-GD-S172200004		CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S172200004		CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S174200004		CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W95200064		PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-S170200064		PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-W13200004		CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W13200004		CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-LD-ST19200004		CNASTONE	200003	BRIGHTON	1	500/500	232/233	Load Deliverability	Included
2022W3-N1-ST23200064		PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Summer N-1 Thermal	Included
2022W3-LD-ST18200004		CNASTONE	200003	BRIGHTON	1	500/500	232/233	Load Deliverability	Included
2022W3-LD-ST21200003		BRIGHTON	200004	CNASTONE	1	500/500	233/232	Load Deliverability	Included
2022W3-GD-S81200004		CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S172200064		PCHBTM1S	200004	CNASTONE	1	500	232/230	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-S172Z	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S171Z	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-LD-ST15	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included
2022W3-GD-S171Z	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S205Z	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W50	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-W73	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-LD-ST14	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included
2022W3-GD-W74	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W92Z	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	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-S171Z	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W1Z	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-W8Z	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-W96	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-W1Z	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W65	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-W97	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-S76N	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-W68	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-S165Z	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S103Z	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-W67	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-S166Z	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included

## New Flowgates

None

## Financial Information

Capital spend start date	02/2024
Construction start date	12/2024
Project Duration (In Months)	82

## Additional Comments

None