North Delta - Conastone Solution

General Information

Proposing entity name	Proprietary Company Information
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Yes
Company proposal ID	Proprietary Company Information
PJM Proposal ID	217
Project title	North Delta - Conastone Solution
Project description	New North Delta 500/23 kV substation, New North Delta - Conastone 500 kV line, plus various modifications to existing lines and substations Proposal permitting and overhead costs are captured on component 26A. See attachment 1 for flowgate information.
Email	Proprietary Company Information
Project in-service date	06/2027
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	

Project Components

1. 24e - North Delta to Cooper 230kV rebuild
2. 24f - North Delta to Graceton 230kV rebuild
3. 26d - Waugh Chapel to Brandon Shores 230kV upgrade
4. 26A - New 500kV transmission line from new North Delta substation to BGE's Conastone substation.
5. 26e - Granite to North West 230kV upgrade

6. 26C - Conastone substation single 500kV breaker expansion

7. 26b2 - New North Delta Substation - 10 terminal

Transmission Line Upgrade Component

Component title	24e - North Delta to Cooper 230kV rebuild
Project description	Proprietary Company Information
Impacted transmission line	Cooper sub to Graceton sub 230kV line
Point A	North Delta
Point B	Cooper
Point C	N/A
Terrain description	Rebuild is within existing ROW

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	Incumbent / Current Transmission owner specific
Hardware plan description	Utilize existing line hardware to extent possible.
Tower line characteristics	Utilize existing towers to extent practicable.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	230.000000	230.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	1573.000000	1810.000000
Winter (MVA)	1648.000000	1896.000000

Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings
Shield wire size and type	Utilize existing shield wire to extent practicable.
Rebuild line length	0.75 miles
Rebuild portion description	Proposing to rebuild the entire line to achieve specific rating.
Right of way	Use of existing ROW to extent practicable.
Construction responsibility	Proprietary Company Information
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process

Component Cost Details - In Current Year $

Engineering & design	Proprietary Company Information
Permitting / routing / siting	Proprietary Company Information
ROW / land acquisition	Proprietary Company Information
Materials & equipment	Proprietary Company Information
Construction & commissioning	Proprietary Company Information
Construction management	Proprietary Company Information
Overheads & miscellaneous costs	Proprietary Company Information
Contingency	Proprietary Company Information
Total component cost	$1,837,500.00
Component cost (in-service year)	$2,028,256.00

Transmission Line Upgrade Component

Component title	24f - North Delta to Graceton 230kV rebuild
Project description	Proprietary Company Information
Impacted transmission line	Cooper sub to Graceton sub 230kV line

Point A	North Delta
Point B	Graceton
Point C	N/A
Terrain description	Rebuild is within existing ROW

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	Incumbent / Current Transmission owner specific
Hardware plan description	Utilize existing line hardware to extent possible.
Tower line characteristics	New double circuit structures will be required.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	230.000000	230.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	1573.000000	1810.000000
Winter (MVA)	1648.000000	1896.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Shield wire size and type	Utilize existing shield wire to extent practicable.	
Rebuild line length	6.5 miles	
Rebuild portion description	Proposing to rebuild the entire line to achieve specific rating.	
Right of way	Use of existing ROW to extent practicable.	
Construction responsibility	Proprietary Company Information	

Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process
Component Cost Details - In Current Year $	
Engineering & design	Proprietary Company Information
Permitting / routing / siting	Proprietary Company Information
ROW / land acquisition	Proprietary Company Information
Materials & equipment	Proprietary Company Information
Construction & commissioning	Proprietary Company Information
Construction management	Proprietary Company Information
Overheads & miscellaneous costs	Proprietary Company Information
Contingency	Proprietary Company Information
Total component cost	$15,925,000.00
Component cost (in-service year)	$17,578,220.00

Transmission Line Upgrade Component

Component title	26d - Waugh Chapel to Brandon Shores 230kV upgrade
Project description	Proprietary Company Information
Impacted transmission line	Waugh Chapel sub to Brandon Shores sub double circuit 230kV line
Point A	Waugh Chapel
Point B	Brandon Shores
Point C	N/A
Terrain description	Upgrade is within existing ROW.
Existing Line Physical Characteristics	
Operating voltage	230

Conductor size and type	Incumbent / Current Transmission owner specific
Hardware plan description	Utilize existing line hardware to extent possible.
Tower line characteristics	Utilize existing towers to extent practicable.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	230.000000	230.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	1573.000000	1810.000000
Winter (MVA)	1648.000000	1896.000000

Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings
Shield wire size and type	Utilize existing shield wire to extent practicable
Rebuild line length	14.4
Rebuild portion description	Proposing to upgrade limiting elements to achieve specific rating.
Right of way	Use of existing ROW to extent practicable.
Construction responsibility	Proprietary Company Information
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process

Component Cost Details - In Current Year $

Engineering & design	Proprietary Company Information
Permitting / routing / siting	Proprietary Company Information
ROW / land acquisition	Proprietary Company Information
Materials & equipment	Proprietary Company Information

Construction & commissioning	Proprietary Company Information
Construction management	Proprietary Company Information
Overheads & miscellaneous costs	Proprietary Company Information
Contingency	Proprietary Company Information
Total component cost	$5,000,000.00
Component cost (in-service year)	$5,519,064.00

Greenfield Transmission Line Component

Component title	26A - New 500kV transmission line from new North Delta substation to BGE's Conastone substation.
Project description	Proprietary Company Information
Point A	North Delta
Point B	Conastone
Point C	N/A

	Normal ratings	Emergency ratings
Summer (MVA)	4295.000000	4357.000000
Winter (MVA)	5066.000000	5196.000000

Conductor size and type	3x 1780 kcmil Chukar ACSR
Nominal voltage	AC
Nominal voltage	500
Line construction type	Overhead

General route description	Route is approximately 15 miles long. Starting a new dead end structure at the new North Delta substation the lines routes southwest for about 0.75 miles before turning northeast to cross the existing Peach Bottom - Conastone 500kV transmission line. The line routes along the west side of existing Peach Bottom - Conastone 500kV transmission ROW for about 3.5 miles before crossing to the east side of the tranmission ROW to avoid impacting Elixir Farm. The line follows the east side of the existing Peach Bottom - Conastone 500kV transmission ROW for less than a mile and the deviates south-southeast for about 0.75 miles to avoid residential impacts before again following the existing Peach Bottom - Conastone 500kV transmission ROW. The line follows along the southern side of the Peach - Bottom Conastone 500kV transmission ROW for about 9 miles before terminating at the existing Conastone substation, except for at about mile 6 where the line deviates off the existing ROW to avoid residential impacts.
Terrain description	The Project traverses through Harford County, Maryland into York County, Pennsylvania. Harford County is located in northeastern Maryland in the Piedmont province, characterized by broad, rolling upland with several deep gorges cut by rivers. Features include rolling hills, pasture and fertile farmland, Quarries and iron pits, and the Susquehanna and Monocacy rivers. The Piedmont region’s elevation ranges from an average of 350 feet to more than 1,200 feet. In York County the Piedmont Upland is characterized by rolling hills and valleys, generally with gentle to moderately steep slopes. However, steeper slopes with narrow valley bottoms dominate near the Susquehanna River. Many higher ridges are underlain by more resistant bedrock such as quartzite. This Section was formed by fluvial erosion and some peri-glacial wasting and averages about 600-700 feet in elevation. The drainage pattern of the area is considered to be dendritic. Slopes in the range of 0-8% are common throughout York County.
Right-of-way width by segment	The majority of the new right of way will be an expansion of an existing transmission line corridor, where a 135ft additional width will be required beyond the existing, assumed, ROW edge.
Electrical transmission infrastructure crossings	See Attachment 4 (Google Earth .kmz) with identified major crossings.
Civil infrastructure/major waterway facility crossing plan	See Attachment 4 (Google Earth .kmz) with identified major crossings and Attachment 5 - Crossing Plan for more detail.

Environmental impacts	Environmental constraints identified are manageable through implementation of an environmental avoidance, minimization, and mitigation strategy incorporated at the beginning of the routing/siting process. Co-location with existing utilities and other infrastructure was prioritized to the greatest extent practicable to minimize the environmental impact on the landscape. The proposed route crosses 4 forested national wetland inventory (NWI) wetlands and 8 waterbodies, but it appears that most features are small and could be avoided without permitting. Consultation with the Army Corps of Engineers, Fish and Wildlife Service, and numerous state agencies in Maryland and Pennsylvania are expected. Fatal flaws have not been identified for proposed route. A cultural resource professional assisted with the routing process to identify and minimize impacts to known areas with historic sensitivities. An investigation to further identify and evaluate historic properties will be conducted to determine the presence of archaeologically or historically significant resources. Federally listed species have been identified including listed bats, Maryland dater, and the bog turtle, but no critical habitat was identified along the proposed route. If suitable habitat is identified or regulations change, agency coordination and species-specific surveys will occur. The project intends to adhere to tree removal seasonal restriction windows to avoid and minimize impacts to protected birds and bats, such as the northern long-eared bat, bald eagle, and other common raptors. Erosion control best management practices and setbacks will be engineered and utilized to prevent sedimentation from leaving the site for the protection of aquatic species and to avoid water quality impacts. There are no unique or sensitive environmental concerns or impacts with the proposed transmission line that cannot be addressed.
Tower characteristics	The proposed structures will be single circuit 500kV lattice towers (TTVS-500) in a horizontal configuration. Any proposed deadend structure will either be a steel lattice tower or a 3-pole, one phase per pole configuration. See proposed structure drawing set included in attachment 10.
Construction responsibility	Proprietary Company Information
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process
Component Cost Details - In Current Year $	
Engineering & design	Proprietary Company Information
Permitting / routing / siting	Proprietary Company Information
ROW / land acquisition	Proprietary Company Information
Materials & equipment	Proprietary Company Information
Construction & commissioning	Proprietary Company Information
Construction management	Proprietary Company Information

Overheads & miscellaneous costs	Proprietary Company Information
Contingency	Proprietary Company Information
Total component cost	$55,382,450.00
Component cost (in-service year)	$55,750,774.00

Transmission Line Upgrade Component

Component title	26e - Granite to North West 230kV upgrade
Project description	Proprietary Company Information
Impacted transmission line	Granite sub to North West sub 230kV line
Point A	Granite
Point B	North West
Point C	N/A
Terrain description	Upgrade is within existing ROW.

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	Incumbent / Current Transmission owner specific
Hardware plan description	Utilize existing line hardware to extent possible.
Tower line characteristics	Utilize existing towers to extent practicable.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	230.000000	230.000000
	Normal ratings	**Emergency ratings**

Summer (MVA)	1573.000000	1810.000000
Winter (MVA)	1648.000000	1896.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Shield wire size and type	Utilize existing shield wire to extent practicable	
Rebuild line length	8.5 miles	
Rebuild portion description	Proposing to upgrade limiting elements to achieve specific rating.	
Right of way	Use of existing ROW to extent practicable.	
Construction responsibility	Proprietary Company Information	
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process	

Component Cost Details - In Current Year $

Engineering & design	Proprietary Company Information
Permitting / routing / siting	Proprietary Company Information
ROW / land acquisition	Proprietary Company Information
Materials & equipment	Proprietary Company Information
Construction & commissioning	Proprietary Company Information
Construction management	Proprietary Company Information
Overheads & miscellaneous costs	Proprietary Company Information
Contingency	Proprietary Company Information
Total component cost	$5,000,000.00
Component cost (in-service year)	$5,519,064.00

Substation Upgrade Component

Component title	26C - Conastone substation single 500kV breaker expansion

Project description	Proprietary Company Information
Substation name	Conastone
Substation zone	BG&E
Substation upgrade scope	Add one new 500kV circuit breaker at Conastone to terminate the new greenfield North Delta to Conastone 500kV transmission line.

Transformer Information

None

New equipment description	AC Substation: Add one (1) new 500 kV breaker to existing bay in breaker and a half (BAAH) bus.
Substation assumptions	The use of a position within a bay appears to be available.
Real-estate description	No expansion of substation fence anticipated
Construction responsibility	Proprietary Company Information
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process

Component Cost Details - In Current Year $

Engineering & design	Proprietary Company Information
Permitting / routing / siting	Proprietary Company Information
ROW / land acquisition	Proprietary Company Information
Materials & equipment	Proprietary Company Information
Construction & commissioning	Proprietary Company Information
Construction management	Proprietary Company Information
Overheads & miscellaneous costs	Proprietary Company Information
Contingency	Proprietary Company Information
Total component cost	$1,400,000.00
Component cost (in-service year)	$1,545,338.00

Greenfield Substation Component

Component title	26b2 - New North Delta Substation - 10 terminal
Project description	Proprietary Company Information
Substation name	North Delta
Substation description	AC Air Insulated Substation (AIS): New proposed 500 - 230 kV Substation. New 500 kV Breaker and a Half (BAAH) switchyard with two (2) bays, three (3) line terminals, seven (7) 500 kV, 5000A, 63kAIC breakers, two (2) 500 kV - 230 kV transformer banks. New 230 kV BAAH switchyard with two (2) bays, three (3) line terminals, seven (7) 230 kV, 5000A, 80kAIC breakers.
Nominal voltage	AC
Nominal voltage	500/230

Transformer Information

	Name		**Capacity (MVA)**
Transformer	Transformer 1		1559/1940
	High Side	**Low Side**	**Tertiary**
Voltage (kV)	500	230	N/A
	Name		**Capacity (MVA)**
Transformer	Transformer 2		1559/1940
	High Side	**Low Side**	**Tertiary**
Voltage (kV)	500	230	N/A

Major equipment description	AC Air Insulated Substation (AIS): New proposed 500 - 230 kV Substation. New 500 kV Breaker and a Half (BAAH) switchyard with two (2) bays, three (3) line terminals, seven (7) 500 kV, 5000A, 63kAIC breakers, two (2) 500 kV - 230 kV transformer banks. New 230 kV BAAH switchyard with two (2) bays, three (3) line terminals, seven (7) 230 kV, 5000A, 80kAIC breakers.

	Normal ratings	Emergency ratings
Summer (MVA)	1559.000000	1940.000000
Winter (MVA)	1785.000000	2168.000000
Environmental assessment	Environmental constraints identified are manageable through implementation of an environmental avoidance, minimization, and mitigation strategy incorporated at the beginning of the siting process. Co-location with existing utilities and other infrastructure was prioritized to the greatest extent practicable to minimize the environmental impact on the landscape. The proposed site is an actively maintained agricultural field and no national wetland inventory (NWI) wetlands or waterbodies are crossed. There is no documented floodplain at this location, and fatal flaws have not been identified. A cultural resource professional assisted with the siting process to identify and minimize impacts to known areas with historic sensitivities. An investigation to further identify and evaluate historic properties will be conducted to determine the presence of archaeologically or historically significant resources. Federally listed species have been identified in the general area, including listed bats and bog turles. However at this time no tree clearing is required for this location. If suitable habitat for bats, or any other protected species, is identified or regulations change, agency consultation and species-specific surveys will occur. The project intends to adhere to tree removal seasonal restriction windows to avoid and minimize impacts to protected birds and bats, such as the Tri-colored Bat, Northern Long-eared Bat, Bald Eagle, and other common raptors. Erosion control best management practices and setbacks will be engineered and utilized to prevent sedimentation from leaving the site for the protection of aquatic species and to avoid water quality impacts. There are no unique or sensitive environmental concerns or impacts with the proposed substation site that cannot be addressed.	

Outreach plan	The Company is committed to working with all interested stakeholders through a robust public outreach program to address/respond to community concerns and inform the public about the project to the greatest extent practicable. The Company believes a well-designed public outreach program can have numerous benefits, including fostering a cooperative relationship with landowners and other stakeholders, expediting the regulatory permitting process, and assisting with project development. In general, the purpose of the community outreach plan is to gain community support for the project. In the affected communities, the Company's public outreach plan will educate the public and relevant stakeholders on specific project details to enable timely regulatory approvals and construction activities. Elements of the public outreach plan will include the following: 1) Identify potential issues at an early stage by engagement with key community stakeholders at the outset; 2) Broaden the community engagement process to identify potential and relevant community benefits that can facilitate community support for the proposed project; 3) Develop a broad base of community support for the proposed project before the regulatory agencies; and 4) Develop a comprehensive administrative record documenting the community outreach process that can be presented to the regulatory agency or, in the event of a legal challenge, to the appropriate court. The outreach plan proposes to dedicate considerable time and resources in engaging the community, and specifically the affected community during the planning process to identify highly sensitive areas that have the least amount of cultural, environmental, and social impacts on the community. The plans will reflect avoidance of impacts rather than mitigation. However, in some cases, if avoidance is not possible, then the Company will involve the community in providing appropriate and practical mitigation measures. The Company will commence its public outreach activities following project award.
Land acquisition plan	The substation is being proposed to be built on a parcel that is already under purchase option.
Construction responsibility	Proprietary Company Information
Benefits/Comments	Resolves reliability and market efficiency issues identified per PJM's. process. Substation is a switchyard with no voltage transformation.

Component Cost Details - In Current Year $

Engineering & design	Proprietary Company Information
Permitting / routing / siting	Proprietary Company Information
ROW / land acquisition	Proprietary Company Information
Materials & equipment	Proprietary Company Information
Construction & commissioning	Proprietary Company Information
Construction management	Proprietary Company Information

Overheads & miscellaneous costs	Proprietary Company Information
Contingency	Proprietary Company Information
Total component cost	$71,442,000.00
Component cost (in-service year)	$78,858,601.00

Congestion Drivers

None

Existing Flowgates

None

New Flowgates

Proprietary Company Information

Financial Information

Capital spend start date	09/2023
Construction start date	07/2025
Project Duration (In Months)	45

Cost Containment Commitment

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

Components covered by cost containment

1. 26A - New 500kV transmission line from new North Delta substation to BGE's Conastone substation. - NEETMA

2. 26b2 - New North Delta Substation - 10 terminal - NEETMA

Cost elements covered by cost containment

Engineering & design	Yes
Permitting / routing / siting	Yes
ROW / land acquisition	Yes
Materials & equipment	Yes
Construction & commissioning	Yes
Construction management	Yes
Overheads & miscellaneous costs	Yes
Taxes	Yes
AFUDC	No
Escalation	No
Additional Information	Proprietary Company Information
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?	Proprietary Company Information
Additional cost containment measures not covered above	Proprietary Company Information

Additional Comments

None