Peach Bottom - Conastone

General Information

Proposing entity name	Redacted to protect business sensitive information.
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Redacted to protect business sensitive information.
Company proposal ID	Redacted to protect business sensitive information.
PJM Proposal ID	345
Project title	Peach Bottom - Conastone
Project description	The Proposing Entity seeks to build a new 17.23 mile 500 kV line from Peach Bottom station (PECO) to Conastone station (BG&E). Major equipment upgrades include the installation of 2 breakers at Peach Bottom 500 kV and 1 breaker at Conastone 500 kV to terminate the proposed line.
Email	Redacted to protect business sensitive information.
Project in-service date	10/2025
Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	Redacted to protect business sensitive information.

Project Components

1. Peach Bottom - Conastone 500 kV line
2. Conastone Station Upgrade
3. Peach Bottom Station Upgrade

Greenfield Transmission Line Component

Component title	Peach Bottom - Conastone 500 kV line
Project description	
Point A	Peach Bottom 500 kV Station
Point B	Conastone 500kV Station
Point C	

	Normal ratings	**Emergency ratings**
Summer (MVA)	2920.000000	3620.000000
Winter (MVA)	3464.000000	3700.000000
Conductor size and type	3 bundle 954 ACSR (54/7)	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	

General route description	The Proposing Entity assessed environmental & land use constraints & opportunities within a study area that included the Conastone & Peach Bottom substations as the two endpoints. This resulted in a 16.7 m2, 1-mile-wide study area comprising portions of Harford Co., MD & York Co., PA. The study area is generally ½ mile north and south of the 500 kV transmission line. Peach Bottom Station bounds the study area to the east & the Conastone Station to the west. Multiple 230 kV & 500 kV lines traverse the study area, including the Conastone–Peach Bottom 500 kV Line. Due to its northeastern alignment, the existing 500 kV line was identified as a routing opportunity. Multiple roads cross the study area & were considered potential siting opportunities. Agricultural properties were considered as potential opportunities. By identifying opportunities & constraints & developing siting guidelines, the Proposing Entity identified Conceptual Routes between the two substations. The routes were then evaluated & modified. Some were determined unsuitable & later dismissed due to proximity to residences, circuitousness, constructability issues, major permitting concerns, significant environmental constraints, or expected high costs. The evaluation resulted in the Bid Route that extends 17.1 miles through mainly agricultural areas with narrow forested tracts & some rural residential development. The Bid Route generally parallels the Conastone–Peach Bottom 500 kV Line. It crosses tributaries to the Susquehanna River, Deer Creek & Muddy Creek, as well as Big Branch, Broad Creek, Falling Branch, Island Branch & Scott Creek. It also crosses two 230 kV lines owned by the incumbent power company & a 500 kV line owned by PECO. Multiple local road crossings are required. Many of the identified constraints were avoided/minimized by paralleling the previously mentioned 500 kV line. There are no identified habitable structures located within the proposed ROW & only a few barns/outbuildings may be impacted. Overall, the Route selected is the most direct route between the two substations & has the least overall impact to land use & environmental resources. The Route significantly reduces the number of new access roads, reducing overall constructability impacts. By paralleling a transmission line of comparable voltage, size, scale & character, impacts to the visual, natural & human environments are significantly reduced. As such, the Bid Route represents a logical & constructible route.
Terrain description	Terrain within the Study Area and crossed by the Bid Route is hilly to gently rolling in a mostly agricultural landscape with large forested tracts and residential development. Elevation along the route varies from 172 feet to 702 feet above sea level. The Bid Route does not cross any major rivers. Major roadways crossed by the line Bid Route include: Norrisville Road (Route 23), Rocks Road (Route 24), Whiteford Road (Route 136), Delta Road (Route 74), and Flintville Road. The new line will cross over multiple transmission lines and distribution lines. Although existing topography and the relative location of a transmission line can affect the scenic integrity of the Study Area, steep slopes and terrain were not considered to be significant siting factors. Scenic integrity refers to the degree of intactness and wholeness of the landscape character. Because the Bid Route parallels the existing transmission line for a majority of its route, it results in fewer land use or aesthetic impacts compared with paralleling roads or requiring greenfield ROW.

Right-of-way width by segment	The new Conastone-Peach Bottom 500kV Line will require the acquisition of 17.10 miles of transmission line with a 175’ wide ROW (MD=10.80 miles, PA=6.30 miles). The project begins at the incumbent’s existing Conastone Station near Norrisville, Harford Co., MD & running in a northeasterly direction to incumbent’s existing Peach Bottom Station in York Co., PA. A tabletop analysis found there were no public lands required for this Project. The private land use is predominantly agricultural & residential that the tabletop analysis found & was verified through the Harford (MD) & York (PA) Counties Clerk’s Offices which classified/assessed the land use as agricultural, & residential. Private land requirements include acquiring 175’ (87.5’/87.5’) wide ROW in Harford Co., MD & York Co., PA where the land use is predominantly agricultural & residential. The Proposing Entity will use proven land acquisition process & approach that are successfully employed on projects over the years. The Proposing Entity’s initial land acquisition step is to verify current ownership by an examination of title, current property tax status, as well as document any liens, & or mortgages. The Proposing Entity will research the status of the subsurface estate, whether or not it is severed from the surface. Once ownership is established, the Proposing Entity will negotiate with landowners based on the fair market value of the property needed for the ROW easements. Market data studies & appraisals, both general & for specific tracts, will be conducted to establish values & a basis for acquisition negotiations. The Proposing Entity will also pay for any crop damage and/or physical damage to property resulting from the construction and/or maintenance of the transmission line. Good Faith negotiations must be made with all landowners. Negotiations will be done in an ethical, non-confrontational & non-threatening manner with the landowners. The long-term relationship with the landowners is paramount & will be kept in mind in all negotiations & honesty, integrity & professionalism will be displayed at all times. Negotiations will continue as long as practical to reach a voluntary agreement. If, and only if, it becomes evident that a voluntary fee purchase agreement between the Proposing Entity and the property owner cannot be reached, and other viable alternatives do not exist, the Proposing Entity would seek the necessary approvals to exercise the right of eminent domain.
Electrical transmission infrastructure crossings	(1) An existing double-circuit 230 kV transmission line owned by the incumbent power company. The location of the crossing is approximately 240 feet south of the existing Graceton Substation fenceline and 1,370 feet east of Graceton Road in Harford County, MD at 39 41’ 50.90” N, 76 23’ 07.90”W., (2&3) Two parallel existing 115 kV transmission lines owned by Delmarva Power and Light. The location of the crossing of both is approximately 400 feet south of the existing Five Forks Substation and 50 feet east of Rocks Road in Harford County, MD at 39 41’ 38.54” N, 76 24’ 44.66”W., (4) An existing 500 kV transmission line owned by PECO. The location of the crossing is approximately 2,500 feet west of the existing Cooper Substation and 900 feet east of Lay Road in York County, PA at 39 44’ 53.15” N, 76 18’ 30.09”W., The Proposed Route requires multiple transmission line crossings to minimize impacts to the existing Conastone – Peach Bottom 500 kV Transmission Line (i.e. midspan for crossing under a larger voltage line and near an existing structure if crossing over an existing transmission line).

Civil infrastructure/major waterway facility crossing plan	The USACE and PADEP regulate floodplains and designated streams in Pennsylvania and will be consulted as part of project development. The conceptual route crosses tributaries to the Susquehanna River, Deer Creek, and Muddy Creek, as well as Big Branch, Broad Creek, Falling Branch, Island Branch, and Scott Creek. No navigable rivers are crossed by the conceptual route. It is possible that additional stream crossings may be identified following route-specific wetland delineations. However, the proposed transmission line conductors would aerially span streams and no structures would be placed in streams, thereby minimizing stream impacts and required permits. The Proposing Entity would avoid stream impacts to the maximum extent feasible. The conceptual route minimizes impacts to riparian areas by generally paralleling the Conastone–Peach Bottom 500 kV Transmission Line and using existing access roads. The Project in Harford County, Maryland and York County, Pennsylvania will not involve any civil infrastructure/major waterway facility crossings.
Environmental impacts	Land use along the proposed Peach Bottom–Conastone 500 kV Transmission Line corridor is predominantly undeveloped or agricultural and largely parallels an existing 500 kV transmission line. The proposed line intersects 12 FEMA-mapped floodplains and/or floodways and 18 National Wetlands. Inventory-mapped wetlands are located in the western and far eastern portions of the route. Named and unnamed streams also bisect the route in various locations. Based on existing aerial photography, the proposed route likely has unmapped wetland or drainage features. Desktop studies and record reviews will be conducted for wetlands and streams, hazardous materials, threatened & endangered species, and cultural resources. A field level stream/wetland delineation, environmental site assessment (stations), habitat survey for species identified by the records review, and cultural resource study will be completed for the station parcel and line route. Following field studies, data will be digitized and provided to engineering so that pole locations and the station is sited to maximize avoidance of sensitive resources. For example, poles will be placed outside of or span wetlands, streams, and floodplains to the greatest extent possible. Existing access and roads will be utilized to access pole locations. If necessary, temporary access roads to pole locations will be identified and field surveyed for environmental and cultural resources and will be adjusted to avoid or minimize impacts. For ground disturbance, a stormwater pollution prevention plan will be developed that specifies practices to manage construction stormwater runoff. The project will apply for a MDE and PADEP general construction stormwater permit. Post-construction stormwater controls will be implemented for the station as needed. Physical impacts to streams are not anticipated. It is anticipated that General Permits (SPGPs) from MDE and PADEP will be required for any temporary impacts to wetlands from access roads. Timing of construction will be executed in accordance with U.S. Fish and Wildlife Service, MDE and PADEP criteria as needed.

Tower characteristics	Peach Bottom–Conastone 500 kV Transmission Line will consist of self-supporting lattice tower structures for tangents, running angles, and dead-end structures provided by SAE Tower. The configuration of the line will be in a flat configuration with angle types of Single Angle Equal Legs, Double back to back angles equal legs, and Four star angles. The basic body will be 20 Ft lengths with possible 40-foot extensions. Leg extension could range from 5 to 25Ft. The maximum leg differential will be 20Ft and the maximum ground slope requirement will be 38.5 degrees. Foundations for the structures will be either a drilled pier stub angle on each leg or a grillage foundation. Steel will be ASTM 575 grade 50 steel angles all bolts will be A394. Climbing and Fall Protection will be rated for the 5,000 LBs of vertical load and have designed anchor point locations. Snug tight construction will be the method of installation of all bolts.
Construction responsibility	Redacted to protect business sensitive information.
Benefits/Comments	Redacted to protect business sensitive information.
Component Cost Details - In Current Year $	
Engineering & design	Redacted to protect business sensitive information.
Permitting / routing / siting	Redacted to protect business sensitive information.
ROW / land acquisition	Redacted to protect business sensitive information.
Materials & equipment	Redacted to protect business sensitive information.
Construction & commissioning	Redacted to protect business sensitive information.
Construction management	Redacted to protect business sensitive information.
Overheads & miscellaneous costs	Redacted to protect business sensitive information.
Contingency	Redacted to protect business sensitive information.
Total component cost	$86,757,840.00
Component cost (in-service year)	$92,124,333.00

Substation Upgrade Component

Component title	Conastone Station Upgrade
Project description	

Substation name	Conastone 500 kV Station
Substation zone	BGE (Area 232)
Substation upgrade scope	Terminate a new 500KV line from the existing Peach Bottom Station.

Transformer Information

None

New equipment description	Terminate a new 500KV line from the existing Peach Bottom Station with the installation of 1-500KV, 5000A, 63KA circuit breaker; 6-500KV, 5000A, 1-phase motor-operated double end break CB disc. sw. & steel str.; 3-500KV, 5000A, 1-phase motor-operated double end break line disc. sw. & steel str.; 9-500KV CB arresters & steel str.; 3-500KV line CCVT's & steel str.; 1-500KV A-frame style take-off tower; 3-500KV, 1-phase vertical strain bus support str.; numerous 500KV, 1-phase rigid bus support str.; and associated bus jumpers, bus tubing & dampening connectors, strain bus, insulators, foundations, control cables, conduits, cable trench, and equipment grounding. Install associated relay equipment in the existing control house. Remove 31-500KV, 1-phase, low bus support str. & foundations; 945ft of aluminum tubing; and 31-500KV insulators. Protection: Install appropriate line and circuit breaker protection packages that coordinate with remote end. Install line interchange metering.
Substation assumptions	This proposal assumes that all necessary outages will be available; existing AC, DC, and telecom. systems will accommodate the new equipment; the existing control house has space for the new relay panels; ground resistivity test data are available; ground grid upgrades will not be needed; soil boring logs and geotechnical report are available; existing yard station equipment does not need to be replaced; existing relay systems do not need to be replaced; line interchange metering for the existing Peach Bottom 500KV line exists and does not need to be replaced; and line interchange metering for the new Peach Bottom 500KV line will be installed and the existing 500KV CB has the needed metering accuracy BCT's.
Real-estate description	The incumbent's existing Conastone Station (Harford County, MD) fence will not require expansion or any additional real estate to be purchased for the project.
Construction responsibility	Redacted to protect business sensitive information.
Benefits/Comments	Redacted to protect business sensitive information.

Component Cost Details - In Current Year $

Engineering & design	Redacted to protect business sensitive information.
Permitting / routing / siting	Redacted to protect business sensitive information.

ROW / land acquisition	Redacted to protect business sensitive information.
Materials & equipment	Redacted to protect business sensitive information.
Construction & commissioning	Redacted to protect business sensitive information.
Construction management	Redacted to protect business sensitive information.
Overheads & miscellaneous costs	Redacted to protect business sensitive information.
Contingency	Redacted to protect business sensitive information.
Total component cost	$4,682,226.00
Component cost (in-service year)	$5,004,828.72

Substation Upgrade Component

Component title	Peach Bottom Station Upgrade
Project description	
Substation name	Peach Bottom 500 kV Station
Substation zone	PECO (Area 230)
Substation upgrade scope	Terminate a new 500KV line from the existing Conastone Station.

Transformer Information

None

New equipment description	Terminate a new 500KV line from the existing Conastone Station with the installation of 2-500KV, 5000A, 63KA circuit breaker; 9-500KV, 5000A, 1-phase motor-operated double end break CB disc. sw. & steel str.; 3-500KV, 5000A, 1-phase motor-operated double end break line disc. sw. & steel str.; 9-500KV, 5000A, 1-phase motor-operated vertical reach line disc. sw. & steel str.; 12-500KV CB arresters & steel str.; 6-500KV line arresters & steel str.; 9-500KV line CCVT's & steel str.; 3-500KV A-frame style take-off towers; 3-500KV, 1-phase mono-pole strain bus turning towers; numerous 500KV, 1-phase rigid bus support str.; and associated bus jumpers, bus tubing & dampening connectors, strain bus, insulators, foundations, control cables, conduits, cable trench, and equipment grounding. Install associated relay equipment in the existing control house. A new 500KV CB & a half string will be created. The existing 500KV Conastone line bus connection will be relocated, the existing 500KV Peach Bottom North Yard Bus #1 line connection will be reconfigured, and the new 500KV Conastone line will be connected to the old Conastone line bus connection point. Remove 34-500KV, 1-phase, low bus support str. & foundations; 5-500KV, 1-phase, high bus support str. & foundations; 1,653ft of aluminum tubing; 6-500KV bus jumpers; 43-500KV insulators; 6-500KV, 1-phase disc. sw. including structures and foundations; 6-500KV CCVT's including steel str., foundations, and bus jumpers; 6-500KV arresters including structures, foundations, and bus jumpers; and 3-500KV, 1-phase mono-pole strain bus towers. Protection: Install appropriate line and circuit breaker protection packages that coordinate with remote end.
Substation assumptions	This proposal assumes that all necessary outages will be available; existing AC, DC, and telecom. systems will accommodate the new equipment; the existing control house has space for the new relay panels; ground resistivity test data are available; ground grid upgrades will not be needed; soil boring logs and geotechnical report are available; existing yard station equipment does not need to be replaced; and existing relay systems do not need to be replaced.
Real-estate description	The incumbent's existing Peach Bottom Station (York County, PA) fences will not require expansion or any additional real estate to be purchased for the project. Incumbent will require remote protection settings adjustments due to improvements
Construction responsibility	Redacted to protect business sensitive information.
Benefits/Comments	Redacted to protect business sensitive information.
Component Cost Details - In Current Year $	
Engineering & design	Redacted to protect business sensitive information.
Permitting / routing / siting	Redacted to protect business sensitive information.
ROW / land acquisition	Redacted to protect business sensitive information.
Materials & equipment	Redacted to protect business sensitive information.
Construction & commissioning	Redacted to protect business sensitive information.

Construction management	Redacted to protect business sensitive information.
Overheads & miscellaneous costs	Redacted to protect business sensitive information.
Contingency	Redacted to protect business sensitive information.
Total component cost	$12,853,508.00
Component cost (in-service year)	$13,739,108.68

Congestion Drivers

None

Existing Flowgates

FG #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
28-GD-S2-W3	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Gen Deliv (winter)	Included
28-GD-S2-W3	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Gen Deliv (winter)	Included
28-GD-S2-W1	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Gen Deliv (winter)	Included
28-GD-S2-W2	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Gen Deliv (winter)	Included
28-GD-S2-W3	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Gen Deliv (winter)	Included
28-GD-S2-W3	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Gen Deliv (winter)	Included
28-GD-S2-W3	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Gen Deliv (winter)	Included
28-GD-S2-W3	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Gen Deliv (winter)	Included
35-GD-S2-W3	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Gen Deliv (winter)	Included
35-GD-S2-W1	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Gen Deliv (winter)	Included
28-GD-S2-W9	200066	PCHBTM1N	270072	FUR RUN_500	1	500	230/225	Gen Deliv (winter)	Included
35-GD-S2-W1	200066	PCHBTM1N	270072	FUR RUN_500	1	500/500	230/225	Gen Deliv (winter)	Included
28-GD-S2-W3	270072	FUR RUN_500	270073	FUR RUN_230	1	500/230	225	Gen Deliv (winter)	Included
28-GD-S2-W3	270072	FUR RUN_500	270073	FUR RUN_230	2	500/230	225	Gen Deliv (winter)	Included
28-GD-S2-W1	270073	FUR RUN_230	220963	CONASTON	2	230	232/225	Gen Deliv (winter)	Included
28-GD-S2-W1	270073	FUR RUN_230	220963	CONASTON	1	230	232/225	Gen Deliv (winter)	Included

FG #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
35-GD-S2-W5	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Gen Deliv (winter)	Included
28-GD-S2-W9	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Gen Deliv (winter)	Included

New Flowgates

Redacted to protect business sensitive information.

Financial Information

Capital spend start date	08/2022
Construction start date	08/2024
Project Duration (In Months)	38

Additional Comments

None