

Brandywine - Limerick 500 kV line (DCT with existing Peach Bottom - Limerick 500 kV line)

General Information

Proposing entity name	Proprietary Information
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Proprietary Information
Company proposal ID	Proprietary Information
PJM Proposal ID	259
Project title	Brandywine - Limerick 500 kV line (DCT with existing Peach Bottom - Limerick 500 kV line)
Project description	Rebuild the portion of the existing Peach Bottom - Limerick 500 kV line between Brandywine and Limerick to double-circuit 500 kV construction with two circuits. This upgrade is separated out from RTEP-2026-W1-P5 because it is not necessary in the 2031 case, and only becomes a potential need in the 2034 case.
Email	Proprietary Information
Project in-service date	05/2031
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. Brandywine 500 kV yard expansion (Limerick line termination)
2. Limerick 500 kV Substation Upgrade (Brandywine - Limerick 500 kV # 2 line termination)
3. Rebuild the Brandywine - Limerick 500 kV line to double circuit

Substation Upgrade Component

Component title	Brandywine 500 kV yard expansion (Limerick line termination)
Project description	Proprietary Information
Substation name	Brandywine
Substation zone	PECO
Substation upgrade scope	At Brandywine 500 kV yard, use an open bay position and add a new 500 kV 4000 A circuit breaker and two 500 kV 4000 A MODs.

Transformer Information

None	
New equipment description	One 500 kV 4000 A circuit breaker Two 500 kV 4000 A MODs
Substation assumptions	New substation introduced by proposal 2026-W1-391 or 2026-W1-283.
Real-estate description	New substation introduced by proposal 2026-W1-391 or 2026-W1-283. Work for this proposed solution will be within the same fence line as initially designed for those proposals.
Construction responsibility	Proprietary Information
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	\$7,001,789.00
Component cost (in-service year)	\$8,214,007.00
Substation Upgrade Component	
Component title	Limerick 500 kV Substation Upgrade (Brandywine - Limerick 500 kV # 2 line termination)
Project description	Proprietary Information
Substation name	Limerick
Substation zone	PECO
Substation upgrade scope	Terminate Brandywine - Limerick 500 kV # 2 line at Limerick 500 kV yard in the existing bay between circuit breaker # 115 and transformer 4A. Add a new 500 kV 4000 amp circuit breaker and two 500 kV 4000 amp MODs between Brandywine circuit # 2 and transformer 4A.
Transformer Information	
None	
New equipment description	One 500 kV 4000 amp circuit breaker Two 500 kV 4000 amp MODs
Substation assumptions	Bay position between circuit breaker # 115 and transformer 4A is available as shown in PECO FERC 715 one-lines.
Real-estate description	Upgrade takes place within the existing station boundary.
Construction responsibility	Proprietary Information
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	\$18,933,578.00
Component cost (in-service year)	\$20,411,658.00
Transmission Line Upgrade Component	
Component title	Rebuild the Brandywine - Limerick 500 kV line to double circuit
Project description	Proprietary Information
Impacted transmission line	Brandywine - Limerick 500 kV line
Point A	Brandywine
Point B	Limerick
Point C	
Terrain description	The Limerick-to-Brandywine corridor traverses the rolling terrain of southeastern Pennsylvania's Piedmont Province. The route consists primarily of gently to moderately sloping agricultural uplands, forested areas, and suburban development, interspersed with numerous stream valleys and drainage crossings. Topographic relief is generally moderate, with localized steeper slopes occurring near major waterways, particularly within the Brandywine Creek watershed. Overall, the terrain is characterized by broad rolling hills and valleys typical of the Pennsylvania Piedmont.
Existing Line Physical Characteristics	
Operating voltage	500
Conductor size and type	Double Bundle 2493 ACAR 54/37 conductor
Hardware plan description	All hardware and infrastructure associated with the existing line will be removed and replaced for the DCT rebuild.

Tower line characteristics

Developer proposes a new DCT 500kV steel pole monopole transmission line. Line will be constructed with (3) 1113 54/19 ACSS in a vertical framed configuration with (2) OPGWs for relay communication between the sites and high-speed protection. Steel poles will be supported by steel concrete cassion foundations. Self-weathering steel will be used for proposed structures for robust low maintenance operations and minimize viewshed impacts to the landscape compared to galvanized steel. Conductor assemblies will utilize glass insulator assemblies.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	500.000000	500.000000
	Normal ratings	Emergency ratings
Summer (MVA)	3610.000000	4150.000000
Winter (MVA)	4276.000000	4755.000000
Conductor size and type	Triple bundle 1113 ACSS conductor	
Shield wire size and type	Dual OPGW	
Rebuild line length	18.5 miles	
Rebuild portion description	Developer proposes to completely remove and rebuild the existing Brandywine to Limerick 500kV line to utilize the transmission corridor for a new DCT 500kV path to Limerick. The proposed transmission structures will be composed of DCT 500kV steel monopoles. The existing 500kV circuit will be replaced on the new poles with new larger conductor. The second circuit of the structure will be the proposed second 500kV line to Limerick.	
Right of way	Existing ROW will be utilized for rebuild.	
Construction responsibility	Proprietary Information	
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	\$181,451,295.00
Component cost (in-service year)	\$195,616,582.00

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
2026W1-N11-ST2	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer N-1-1	Included
2026W1-N11-ST5	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer N-1-1	Included
2026W1-N11-ST6	213844	EXCLUDED_FROM_COMPETITION	213846	EXCLUDED_FROM_COMPETITION	1	230	230	Summer N-1-1	Included
2026W1-N11-ST7	213846	EXCLUDED_FROM_COMPETITION	213846	PCHBTMTP	1	230	230	Summer N-1-1	Included
2026W1-N11-ST16	213844	EXCLUDED_FROM_COMPETITION	213846	EXCLUDED_FROM_COMPETITION	1	230	230	Summer N-1-1	Included
2026W1-N11-ST17	213846	EXCLUDED_FROM_COMPETITION	213846	PCHBTMTP	1	230	230	Summer N-1-1	Included
2026W1-N11-ST31	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer N-1-1	Included
2026W1-N11-ST32	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer N-1-1	Included
2026W1-N11-ST33	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer N-1-1	Included
2026W1-N11-ST46	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer N-1-1	Included
2026W1-N11-ST49	213844	EXCLUDED_FROM_COMPETITION	213846	EXCLUDED_FROM_COMPETITION	1	230	230	Summer N-1-1	Included
2026W1-N11-ST50	213846	EXCLUDED_FROM_COMPETITION	213846	PCHBTMTP	1	230	230	Summer N-1-1	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2026W1-N11-ST51	213844	EXCLUDED_FROM_COMPETITION	213846	EXCLUDED_FROM_COMPETITION	1	230	230	Summer N-1-1	Included
2026W1-N11-ST52	213846	EXCLUDED_FROM_COMPETITION	213869	PCHBTMTP	1	230	230	Summer N-1-1	Included
2026W1-N11-ST53	213844	EXCLUDED_FROM_COMPETITION	213846	EXCLUDED_FROM_COMPETITION	1	230	230	Summer N-1-1	Included
2026W1-N11-ST54	213846	EXCLUDED_FROM_COMPETITION	213869	PCHBTMTP	1	230	230	Summer N-1-1	Included
2026W1-N11-ST66	213846	EXCLUDED_FROM_COMPETITION	213869	PCHBTMTP	1	230	230	Summer N-1-1	Included
2026W1-N11-ST67	213844	EXCLUDED_FROM_COMPETITION	213846	EXCLUDED_FROM_COMPETITION	1	230	230	Summer N-1-1	Included
2026W1-N11-ST102	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer N-1-1	Included
2026W1-N11-ST104	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer N-1-1	Included
2026W1-N11-ST105	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer N-1-1	Included
2026W1-N11-ST106	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer N-1-1	Included
2026W1-N11-ST107	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer N-1-1	Included
2026W1-N11-ST111	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer N-1-1	Included
2026W1-N11-ST112	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer N-1-1	Included

New Flowgates

Proprietary Information

Financial Information

Capital spend start date 02/2027

Construction start date 01/2030

Project Duration (In Months) 51

Additional Comments

None