

Hosensack - Whitpain 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	811
Project title	Hosensack - Whitpain 500 kV line
Project description	Construct a new 27.5-mile Hosensack - Whitpain 500 kV line. The line will consist of three brownfield segments; (1) an 11.75-mile segment double-circuited with the existing Hosensack - Buxmont 230 kV line, (2) a 6.25-mile segment double-circuited with the existing Hosensack - Elroy 500 kV line, and (3) a 9.5-mile segment double-circuited with the existing Elroy - Centerpoint and Centerpoint - Whitpain 500 kV lines. Terminate the new line at the Hosensack 500 kV yard by moving the Steel City terminal position from the south bus to the north bus of the existing Bay 1 of the breaker and a half configuration. Terminate the new line in the south position of Bay 1. Add a new 500 kV 4000 A circuit breaker and two 4000 A MODs to complete the breaker and a half bay configuration. Expand Whitpain 500 kV yard with a new double bus double breaker bay, two 4000 A circuit breakers, and four 4000 A MODs.
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?	Yes
Additional benefits	Proprietary Information

Project Components

1. Hosensack 500 kV Station upgrade
2. Whitpain 500 kV Station upgrade
3. Hosensack - Whitpain 500 kV line (Rebuild Hosensack - Buxmont to 500/230 kV DCT)
4. Hosensack - Whitpain 500 kV line (Rebuild Hosensack - Elroy to 500 kV DCT)
5. Hosensack - Whitpain 500 kV line (Rebuild Elroy - Centerpoint - Whitpain to 500 kV DCT)

Substation Upgrade Component

Component title	Hosensack 500 kV Station upgrade
Project description	Proprietary Information
Substation name	Hosensack
Substation zone	PPL
Substation upgrade scope	Terminate the new line at the Hosensack 500 kV yard by moving the Steel City terminal position from the south bus to the north bus of the existing Bay 1 of the breaker and a half configuration. Terminate the new line in the south position of Bay 1. Add a new 500 kV 4000 A circuit breaker and two 4000 A MODs to complete the breaker and a half bay configuration. Other breakers are added to this bay under preexisting Supplemental Project S3922.

Transformer Information

None	
New equipment description	One 500 kV 4000 A circuit breaker Two 4000 A MODs
Substation assumptions	Supplemental Project S3922 completed separately to populate the rest of the breaker and a half bay prior to this project.
Real-estate description	No expansion of the station yard is required to accommodate this upgrade.
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	\$6,685,238.00
Component cost (in-service year)	\$7,825,967.00
Substation Upgrade Component	
Component title	Whitpain 500 kV Station upgrade
Project description	Proprietary Information
Substation name	Whitpain
Substation zone	PECO
Substation upgrade scope	Expand the Whitpain 500 kV yard with a new double bus double breaker bay, two 4000 A circuit breakers, and four 4000 A MODs.
Transformer Information	
None	
New equipment description	Two 500 kV 4000 A circuit breakers Four 500 kV 4000 A MODs
Substation assumptions	Assumes that it is feasible to expand the PECO Whitpain Substation on its southwest side to accommodate the new bay.
Real-estate description	No additional real-estate required to accommodate this upgrade.
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	\$23,775,534.00
Component cost (in-service year)	\$25,631,609.00
Transmission Line Upgrade Component	
Component title	Hosensack - Whitpain 500 kV line (Rebuild Hosensack - Buxmont to 500/230 kV DCT)
Project description	Proprietary Information
Impacted transmission line	Hosensack - Buxmont 230 kV line
Point A	Hosensack
Point B	Buxmont
Point C	
Terrain description	Land use within the Whitpain to Hosensack study area in southeastern Pennsylvania is predominately suburban, with a mix of agricultural land, forested landscapes, and hilly areas to the north of the study area near Hosensack. The suburban portions of the study area are concentrated around Whitpain, closer to Philadelphia, characterized by residential and commercial structures, and a web of concentrated roadways.

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	1590 45/7 ACSR conductor
Hardware plan description	All hardware associated with the line will be removed and replaced as part of the proposed 500/230 kV rebuild.
Tower line characteristics	1920's vintage single-circuit painted steel towers.

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	11.75 miles	
Rebuild portion description	Developer proposes to completely remove and rebuild the existing Hosensack to Buxmont 230kV line for ~11.75 miles to utilize the transmission corridor for a new 500kV path to Hosensack. The proposed transmission structures will be composed of 230/500kV steel monopoles. The existing 230kV circuit will be replaced on the new poles with new larger conductor. The second circuit of the structure will be the proposed 500kV line to Whitpain.	
Right of way	The existing ROW width is generally 100 feet, and will be expanded to 150 to 200 feet as part of this project.	
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	\$100,531,891.00
Component cost (in-service year)	\$117,686,044.00

Transmission Line Upgrade Component

Component title	Hosensack - Whitpain 500 kV line (Rebuild Hosensack - Elroy to 500 kV DCT)
Project description	Proprietary Information
Impacted transmission line	Hosensack - Elroy 500 kV line
Point A	Hosensack
Point B	Elroy
Point C	
Terrain description	Land use within the Whitpain to Hosensack study area in southeastern Pennsylvania is predominately suburban, with a mix of agricultural land, forested landscapes, and hilly areas to the north of the study area near Hosensack. The suburban portions of the study area are concentrated around Whitpain, closer to Philadelphia, characterized by residential and commercial structures, and a web of concentrated roadways.

Existing Line Physical Characteristics

Operating voltage	500
Conductor size and type	Double Bundle 2493 ACAR 54/37 conductor
Hardware plan description	All hardware associated with the line will be removed and replaced as part of the proposed 500 kV DCT rebuild.
Tower line characteristics	Unknown. Owned by PECO.

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	6.25 miles	
Rebuild portion description	Developer proposes to completely remove and rebuild the existing Hosensack to Elroy to Whitpain 500kV line to utilize the transmission corridor for a new DCT 500kV path to Whitpain. 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 500kV line to Whitpain.	
Right of way	Existing ROW appears to be 200 feet in width, and will be utilized for the proposed rebuild. There is dense urban population surrounding the existing ROW.	
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	\$60,159,152.00
Component cost (in-service year)	\$64,855,572.00

Transmission Line Upgrade Component

Component title	Hosensack - Whitpain 500 kV line (Rebuild Elroy - Centerpoint - Whitpain to 500 kV DCT)
Project description	Proprietary Information
Impacted transmission line	Elroy - Centerpoint - Whitpain 500 kV line
Point A	Elroy
Point B	Centerpoint
Point C	Whitpain
Terrain description	Land use within the Whitpain to Hosensack study area in southeastern Pennsylvania is predominately suburban, with a mix of agricultural land, forested landscapes, and hilly areas to the north of the study area near Hosensack. The suburban portions of the study area are concentrated around Whitpain, closer to Philadelphia, characterized by residential and commercial structures, and a web of concentrated roadways.

Existing Line Physical Characteristics

Operating voltage	500
Conductor size and type	Double Bundle 2493 ACAR 54/37 conductor
Hardware plan description	All hardware associated with the line will be removed and replaced as part of the proposed 500 kV DCT rebuild.
Tower line characteristics	Unknown. Owned by PECO.

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 1590 ACSR	
Shield wire size and type	Dual OPGW	
Rebuild line length	9.5 miles	
Rebuild portion description	Developer proposes to completely remove and rebuild the existing Hosensack to Elroy to Whitpain 500kV line to utilize the transmission corridor for a new DCT 500kV path to Whitpain. 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 500kV line to Whitpain.	
Right of way	Existing ROW appears to be 200 feet in width, and will be utilized for the proposed rebuild. There is dense urban population surrounding the existing ROW.	
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	\$92,928,774.00
Component cost (in-service year)	\$100,183,407.00

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	213869	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	213869	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

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
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	213869	TRBATMTP	1	230	230	Summer N-1-1	Included
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	TRBATMTP	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	TRBATMTP	1	230	230	Summer N-1-1	Included
2026W1-N11-ST66	213846	EXCLUDED_FROM_COMPETITION	213869	TRBATMTP	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 02/2030

Project Duration (In Months) 51

Cost Containment Commitment

Cost cap (in current year)	Proprietary Information
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Cost cap (in-service year)	Proprietary Information
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Components covered by cost containment

1. Hosensack 500 kV Station upgrade - PROPOSER
2. Hosensack - Whitpain 500 kV line (Rebuild Hosensack - Buxmont to 500/230 kV DCT) - PROPOSER

Cost elements covered by cost containment

Engineering & design	Yes
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Permitting / routing / siting	No
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ROW / land acquisition	No
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Materials & equipment	Yes
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Construction & commissioning	Yes
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Construction management	Yes
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Overheads & miscellaneous costs	No
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Taxes	No
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AFUDC	No
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Escalation	No
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Additional Information	Proprietary Information
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Is the proposer offering a binding cap on ROE?	No
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Is the proposer offering a Debt to Equity Ratio cap?	Proprietary Information
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Additional cost containment measures not covered above	Proprietary Information
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Additional Comments

None