220-84 Linwood-Claymont 230 kV Tie-Line Facility Upgrade

General Information

Proposing entity name	PE
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	579
Project title	220-84 Linwood-Claymont 230 kV Tie-Line Facility Upgrade
Project description	Rebuild 220-84 230 kV Tie-line from Linwood to Claymont substation and upgrade terminal equipment at Claymont substation to meet future capacity requirements.
Email	Proprietary Information
Project in-service date	05/2032
Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	This project helps alleviate overloads identified in 2032 Scenario 4 generation deliverability studies with the addition of the PPL load idvs to the cases. The increased 220-84 Tie-line capacity should help with projected load growth on the transmission system.

Project Components

1. Rebuild 220-84 Linwood-Claymont 230 kV Tie-line (PECO Portion)
2. Rebuild 220-84 Linwood-Claymont 230 kV Tie-line (DPL Portion)
3. Claymont Substation Upgrades

Transmission Line Upgrade Component

Component title	Rebuild 220-84 Linwood-Claymont 230 kV Tie-line (PECO Portion)
Project description	Rebuild the 220-84 Linwood-Claymont 230 kV Tie-line (PECO Portion) utilizing Dual 959.6 ACSS/TW "Suwannee" conductor.
Impacted transmission line	220-84
Point A	Linwood Substation
Point B	Claymont Substation
Point C	
Terrain description	Generally flat along Amtrak ROW.
Existing Line Physical Characteristics	
Operating voltage	230
Conductor size and type	Single 1590 ACSR "Falcon"
Hardware plan description	The existing hardware will be replaced. OPGW fiber will be installed the entire length.
Tower line characteristics	Existing transmission structures are inadequate to support proposed Dual 959.6 ACSS/TW "Suwannee" conductor.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1523.000000	1767.000000
Winter (MVA)	1597.000000	1843.000000
Conductor size and type	Dual 959.6 ACSS/TW "Suwannee"	

Shield wire size and type	0.638” 96-count OPGW
Rebuild line length	.51 miles
Rebuild portion description	The entire length is proposed to be rebuilt.
Right of way	Existing ROW should be adequate.
Construction responsibility	PECO
Benefits/Comments	Upgrade transmission line to meet future capacity needs.
Component Cost Details - In Current Year $	
Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$4,162,533.00
Component cost (in-service year)	$4,730,542.58

Transmission Line Upgrade Component

Component title	Rebuild 220-84 Linwood-Claymont 230 kV Tie-line (DPL Portion)
Project description	Rebuild the 220-84 Linwood-Claymont 230 kV Tie-line (DPL Portion) utilizing Dual 1590 ACSR "Lapwing" conductor.
Impacted transmission line	220-84

Point A	Linwood Substation
Point B	Claymont Substation
Point C	
Terrain description	Generally flat along Amtrak ROW.
Existing Line Physical Characteristics	
Operating voltage	230
Conductor size and type	Single 1590 ACSR "Lapwing"
Hardware plan description	The existing hardware will be replaced. OPGW fiber (.638" 96-count) will be installed the entire length.
Tower line characteristics	Existing transmission structures are inadequate to support proposed Dual 1590 ACSR "Lapwing" conductor.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1308.000000	1618.000000
Winter (MVA)	1506.000000	1822.000000

Conductor size and type	Dual 1590 ACSR "Lapwing" conductor
Shield wire size and type	0.638” 96-count OPGW
Rebuild line length	1.3 miles
Rebuild portion description	The entire length is proposed to be rebuilt.
Right of way	Existing ROW should be adequate.

Construction responsibility	DPL
Benefits/Comments	Upgrade transmission line to meet future capacity needs.
Component Cost Details - In Current Year $	
Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$3,212,497.00
Component cost (in-service year)	$3,711,608.24

Substation Upgrade Component

Component title	Claymont Substation Upgrades
Project description	Upgrade 220-84 Terminal Equipment at Claymont Substation
Substation name	Claymont Substation
Substation zone	DPL
Substation upgrade scope	Upgrade existing 220-84 facility to meet a 3000A rating. Existing (1) 2-795 ACSR strain bus shall be replaced with (1) 2-1590 ACSR. Existing (1) 1590 ACSR shall be replaced with (1) 2-1590 ACSR. Existing 3” & 3.5” rigid bus shall be replaced with 5” AL EHPS. These upgrades will require the replacement in kind of existing aluminum strain support structures. Existing (4) 230 kV disconnect switches #232-D1, #232-D2, #233-D1 and #233-D2 shall be replaced with (4) 245kV; 3000A, 120kA,3-Ph gang operated; arcing horns. Existing (1) 230 kV disconnect switch #22084-L1 shall be replaced with (1) 245kV; 3000A, 120kA, 3-Ph; QWB; with interlocking ground switch.

Transformer Information

None

New equipment description	Upgrade existing 220-84 facility to meet a 3000A rating. Existing (1) 2-795 ACSR strain bus shall be replaced with (1) 2-1590 ACSR. Existing (1) 1590 ACSR shall be replaced with (1) 2-1590 ACSR. Existing 3” & 3.5” rigid bus shall be replaced with 5” AL EHPS. These upgrades will require the replacement in kind of existing aluminum strain support structures. Existing (4) 230 kV disconnect switches #232-D1, #232-D2, #233-D1 and #233-D2 shall be replaced with (4) 245kV; 3000A, 120kA,3-Ph gang operated; arcing horns. Existing (1) 230 kV disconnect switch #22084-L1 shall be replaced with (1) 245kV; 3000A, 120kA, 3-Ph; QWB; with interlocking ground switch.
Substation assumptions	It is assumed that all aluminum support structures are required to be replaced.
Real-estate description	
Construction responsibility	DPL
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$3,222,855.00
Component cost (in-service year)	$3,538,296.07

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
2025W1-GD-S39	231000	CLAY_230	214235	LINWOOD84	1	230	230/235	Generation Deliverability	Excluded

New Flowgates

None

Financial Information

Capital spend start date	01/2026
Construction start date	11/2027
Project Duration (In Months)	76

Additional Comments

None