Lackawanna - Sandy Run - Siegfried 500 kV line project

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	556
Project title	Lackawanna - Sandy Run - Siegfried 500 kV line project
Project description	Construct a 48-mile Lackawanna - Sandy Run 500 kV line with 1113 ACSS 54/19 conductor. Construct a 28-mile Sandy Run - Siegfried 500 kV line with 1113 ACSS 54/19 conductor. At Lackawanna, install one 3,000 amp MOD in Bay 1E, a 500 kV dead-end structure, a set of CCVTs, and down comer infrastructure for the new line terminal. Add four new 500 kV 4,000 amp circuit breakers and eight 500 kV 4,000 amp MODs at Sandy Run 500 kV Switchyard. Add one new 500 kV bay in the Siegfried 500 kV yard with two 500 kV 4,000 amp circuit breakers and four 500 kV 4,000 amp MODs.
Email	Proprietary Information
Project in-service date	05/2030
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	Proprietary Information

Project Components

1. Lackawanna - Sandy Run 500 kV line
2. Sandy Run - Siegfried 500 kV line

3. Lackawanna 500 kV yard upgrade
4. Siegfried 500 kV Switchyard upgrade
5. Sandy Run 500 kV Switchyard upgrade

Greenfield Transmission Line Component

Component title	Lackawanna - Sandy Run 500 kV line	
Project description	Proprietary Information	
Point A	Lackawanna	
Point B	Sandy Run	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	2707.000000	3112.000000
Winter (MVA)	3207.000000	3566.000000
Conductor size and type	Triple-bundle 1113 54/19 ACSS conductor	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	
General route description	Follows existing Developer-owned 500 kV, 230 kV, and 69 kV line ROWs between Lackawanna and Sandy Run.	
Terrain description	Some urban areas, and forested mountain.	
Right-of-way width by segment	Developer proposes 200 foot ROW, with 150 foot ROW at pinch points, for the entire route.	
Electrical transmission infrastructure crossings	Mountain Stanton 230 kV line, Susquehanna - Palooka 230 kV line, Wilkes Barre - White Haven 69 kV line	

Civil infrastructure/major waterway facility crossing plan	One crossing of the Susquehanna River. One crossing of Interstate 81. One crossing of Interstate 80. One crossing of Interstate 476.
Environmental impacts	An extensive review of the proposed project alignment found that this proposed scope will require a suite of permits and agency consultations that are common for transmission development in this region of Pennsylvania. Developer anticipates needing to apply for an Individual Permit in compliance with the National Pollutant Discharge Elimination System as administered by the Pennsylvania Department of Environmental Protection PA DEP. We anticipate 10-14 stream and wetland crossings that will necessitate permitting under the PADEP. Impacts to threatened and endangered species will center around federally and state protected tree roosting bat species due to vegetation clearing activities that will be mitigated by time-of-year tree clearing restrictions. Based on our extensive work experience in the area, we anticipate field work for cultural resources to review new ground disturbing activities and anticipate 3-5 rounds of consultations with the PA Historical & Museum Commission regarding project impacts to prehistoric and historic resources. The proposed transmission corridor traverses both PA State Forests and State Game Lands parcels which will require invasive species reporting and post construction monitoring. A submerged lands license agreement with the state of PA will be required for the overhead crossing of the Susquehanna River. Depending on the location of our final off-ROW temporary construction accesses the project may require 10 PennDOT temporary driveway accesses and at least 2 highway occupancy permits.
Tower characteristics	Developer proposes single circuit 500 kV steel monopole structures on concrete foundations.
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	$281,583,566.22
Component cost (in-service year)	$330,006,068.00

Transmission Line Upgrade Component

Component title	Sandy Run - Siegfried 500 kV line
Project description	Proprietary Information
Impacted transmission line	Susquehanna - Wescosville 500 kV line
Point A	Susquehanna
Point B	Wescosville
Point C	
Terrain description	Adjacent to existing Susquehanna - Wescosville 500 kV line. Forested mountains. Farm land at southern terminus.

Existing Line Physical Characteristics

Operating voltage	500
Conductor size and type	Double bundle 2493 ACAR 54/37 conductor
Hardware plan description	Existing line will not be impacted by this project. The project will be constructed adjacent to the existing Susquehanna - Wescosville 500 kV line.
Tower line characteristics	Existing line will not be impacted by this project. The project will be constructed adjacent to the existing Susquehanna - Wescosville 500 kV line.

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 54/19 conductor	
Shield wire size and type	OPGW	
Rebuild line length	28 miles	
Rebuild portion description	Existing line will not be impacted by this project. The project will be constructed adjacent to the existing Susquehanna - Wescosville 500 kV line.	
Right of way	Developer proposes 200 foot ROW, with 150 foot ROW at pinch points, for the entire route.	
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	$156,434,154.13	
Component cost (in-service year)	$183,335,344.45	

Substation Upgrade Component

Component title	Lackawanna 500 kV yard upgrade
Project description	Proprietary Information
Substation name	Lackawanna 500/230/69 kV Substation
Substation zone	PPL EU
Substation upgrade scope	At Lackawanna, install one 3,000 amp MOD in Bay 1E, a 500 kV dead-end structure, a set of CCVTs, and down comer infrastructure for the new line terminal. Utilize existing cable trench system for all wiring and control to existing control house. Install new line protection & control relay package in existing control house. No station footprint expansion required.

Transformer Information

None

New equipment description	One 500 kV 3,000 amp MOD
Substation assumptions	Project can be accommodated within existing fence line.
Real-estate description	No new real estate is required to accommodate 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	$4,786,135.87
Component cost (in-service year)	$5,609,183.45

Substation Upgrade Component

Component title	Siegfried 500 kV Switchyard upgrade
Project description	Proprietary Information
Substation name	Siegfried 500 kV Switchyard
Substation zone	PPL EU
Substation upgrade scope	Add one new 500 kV bay in the Siegfried 500 kV yard with two 500 kV 4,000 amp circuit breakers and four 500 kV 4,000 amp MODs.

Transformer Information

None

New equipment description	One 500 kV breaker and a half bay Two 500 kV 4,000 amp circuit breakers Four 500 kV 4,000 amp MODs
Substation assumptions	Project can be accommodated within identified parcel for Siegfried 500 kV yard described in Proposal 2025-W1-199.
Real-estate description	No new real estate is required to accommodate 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	$4,786,135.87
Component cost (in-service year)	$5,609,183.45

Substation Upgrade Component

Component title	Sandy Run 500 kV Switchyard upgrade
Project description	Proprietary Information
Substation name	Sandy Run 500 kV Switchyard
Substation zone	PPL EU
Substation upgrade scope	Add four new 500 kV 4,000 amp circuit breakers and eight 500 kV 4,000 amp MODs at Sandy Run 500 kV Switchyard.

Transformer Information

None

New equipment description	Four 500 kV 4,000 amp circuit breakers Eight 500 kV 4,000 amp MODs
Substation assumptions	Project can be accommodated within identified parcel for Sandy Run 500 kV yard described in Proposal 2025-W1-434 or 2025-W1-946.
Real-estate description	No additional real estate would be required beyond the real estate necessary under Proposal 2025-W1-434 or 2025-W1-946.
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	$17,271,824.00
Component cost (in-service year)	$20,349,523.22

Congestion Drivers

None

Existing Flowgates

None

New Flowgates

Proprietary Information

Financial Information

Capital spend start date	02/2026
Construction start date	03/2028
Project Duration (In Months)	51

Cost Containment Commitment

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

Components covered by cost containment

1. Lackawanna - Sandy Run 500 kV line - PPL
2. Sandy Run - Siegfried 500 kV line - PPL
3. Lackawanna 500 kV yard upgrade - PPL
4. Siegfried 500 kV Switchyard upgrade - PPL
5. Sandy Run 500 kV Switchyard upgrade - PPL

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	No
AFUDC	No
Escalation	Yes
Additional Information	Proprietary Information
Is the proposer offering a binding cap on ROE?	No

Is the proposer offering a Debt to Equity Ratio cap?	Proprietary Information

Additional Comments

None