Lackawanna 500/230 kV T3 and T4 Transformer Replacement Upgrade

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	553
Project title	Lackawanna 500/230 kV T3 and T4 Transformer Replacement Upgrade
Project description	Replace the existing Lackawanna 500/230 kV T3 and T4 transformers with larger 1250 MVA units. Upgrade bay equipment to accommodate the new higher rated transformers.
Email	Proprietary Information
Project in-service date	05/2027
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 500/230 kV T3 and T4 Transformer Upgrades

Substation Upgrade Component

Component title	Lackawanna 500/230 kV T3 and T4 Transformer Upgrades
Project description	Proprietary Information

Substation name	Lackawanna 500/230 kV Substation
Substation zone	PPL EU
Substation upgrade scope	Remove the existing 750 MVA 500/230 kV T3 and T4 transformers at Lackawanna Substation. Install two 500/230 kV, 1250 MVA transformers in their place (seven 417 MVA single-phase units with one unit to be utilized as an on-site spare). The high-side transformer lead conductor will be double-bundle 2493 ACSR and the low-side lead will be double-bundle 1590 ACSR conductor. The two 230 kV 3000 A transformer circuit breakers will be replaced with 4000 A circuit breakers.

Transformer Information

	Name	**Capacity (MVA)**
Transformer	Lackawanna 500/230 kV T3	1250

	High Side	**Low Side**	**Tertiary**
Voltage (kV)	500	230	

	Name	**Capacity (MVA)**
Transformer	Lackawanna 500/230 kV T4	1250

	High Side	**Low Side**	**Tertiary**
Voltage (kV)	500	230	12.47

New equipment description	500 kV transformer leads: double-bundle 2493 ACSR conductor 230 kV transformer leads: double-bundle 1590 ACSR conductor Two 230 kV 4000 Amp breakers Seven new 417MVA single phase units (one to serve as an on-site-spare), relay panels, associated jumpers, control cables, power cables, conduit, new foundation for new equipment, and associated grounding. The new T3 and T4 transformers will have a rating of SN 1250 MVA, SE 1603 MVA, WN 1652 MVA, and WE 1822 MVA.
Substation assumptions	Substation is owned by the proposing entity and has sufficient space for this upgrade. No assumptions were made.
Real-estate description	Substation has sufficient space. No station expansion required.
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	$55,971,933.50
Component cost (in-service year)	$63,595,785.28

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
2022W1-GD-S595	208009	LACK	200074	LACK	3	230/500	229	Summer Gen Deliv	Included

New Flowgates

None

Financial Information

Capital spend start date	04/2023
Construction start date	04/2026
Project Duration (In Months)	49

Cost Containment Commitment

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

Components covered by cost containment

1. Lackawanna 500/230 kV T3 and T4 Transformer Upgrades - PPL

Cost elements covered by cost containment

Engineering & design	Yes
Permitting / routing / siting	Yes
ROW / land acquisition	Yes
Materials & equipment	No
Construction & commissioning	Yes
Construction management	Yes
Overheads & miscellaneous costs	Yes
Taxes	No
AFUDC	No
Escalation	No
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