

Juniata - Lewistown 230 kV # 2 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	615
Project title	Juniata - Lewistown 230 kV # 2 line
Project description	Construct a new 25-mile Juniata - Lewistown 230 kV # 2 line using 1590 54/19 ACSS conductor. Build a new 2 breaker bay in the double bus double breaker Juniata 230 kV yard. Build a new 2 breaker bay in the existing double bus double breaker Lewistown 230 kV yard. Reconduct the existing Juniata - Lewistown 230 kV # 1 line with 1590 54/19 ACSS conductor.
Email	Proprietary Information
Project in-service date	03/2031
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. Juniata - Lewistown 230 kV # 2 line
2. Juniata 230 kV Station Upgrade
3. Lewistown 230 kV Station Upgrade
4. Juniata - Lewistown 230 kV # 1 line rebuild (PENELEC segment)

5. Juniata - Lewistown 230 kV # 1 line rebuild (PPL segment)

Greenfield Transmission Line Component

Component title	Juniata - Lewistown 230 kV # 2 line	
Project description	Proprietary Information	
Point A	Juniata	
Point B	Lewistown	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	933.000000	1079.000000
Winter (MVA)	998.000000	1143.000000
Conductor size and type	1590 54/19 ACSS conductor	
Nominal voltage	AC	
Nominal voltage	230	
Line construction type	Overhead	
General route description	The preferred route, is approximately 24.8 miles long and follows the northern alignment near Markelsville, Walnut Grove, and Port Royal. The route includes approximately 20.1 miles of greenfield construction and 4.7 miles of brownfield or co-location opportunities. The centerline of the route passes within 300 feet of 58 residences and the route crosses 26 wetlands and 5 high-sensitivity areas and intersects three state or federal lands. Approximately 12.9 miles of the route traverse slopes exceeding 15 percent, and the route contains no significant turn angles greater than 75 degrees.	
Terrain description	Both mountainous and agricultural terrain.	
Right-of-way width by segment	Developer proposes 150 feet of new ROW.	
Electrical transmission infrastructure crossings	Juniata - Lewistown 230 kV # 1 line, Sunbury - Juniata 500 kV line	

Civil infrastructure/major waterway facility crossing plan	We do not foresee any major waterway crossings, but the line will cross the following smaller waterways: (1) Little Buffalo Creek (2) Buffalo Creek (3) Racoon Creek (4) Hunters Creek (5) Tuscarora Creek (6) Markee Creek (7) East Licking Creek
Environmental impacts	The proposed project passes through the Pennsylvania Ridge and Valley region, which is characterized by southwest-northeast trending ridgelines and valleys with attendant streams. Terrain within the valleys is characterized by a mixture of agricultural and forested areas while the mountain ridges are primarily forested uplands. Robust erosion and sediment controls dictated by Pennsylvania's BMP Manual will be deployed as a baseline due to the steep terrain of the region. Temporary and permanent impacts to the landscape will be minimized by: . avoiding construction in wetlands and waterways to the extent possible; . limiting the construction of access roads and construction pads to the minimum required to safely execute construction and O&M; . deploying robust BMPs to limit erosion; . consulting with federal and state agencies to avoid or reduce impacts to rare, threatened, and endangered species. The project will require several wetland and waterway permits including GP 5 aerial crossings, along with several GP 7 and GP 8 permits, dependent on final constructability determinations. Based on a review of publicly available data the project will likely trigger an individual NPDES permit, necessitating the use of ABACT erosion and sediment control BMPs. The scope of the project will require extensive consultation with Pennsylvania's DEP. Federally protected species may occur within the proposed project area, including Northern Long Eared Bats, which would require time-of-year restrictions on tree clearing and construction activities. Greenfield sections of the proposed project will likely trigger archaeological field investigations to ensure project impacts to cultural resources are minimized to the extent practicable.
Tower characteristics	Developer proposes single circuit 230 kV on steel monopole structures.
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	\$96,818,023.00
Component cost (in-service year)	\$115,166,575.00
Substation Upgrade Component	
Component title	Juniata 230 kV Station Upgrade
Project description	Proprietary Information
Substation name	Juniata 500/230 kV Substation
Substation zone	PPL
Substation upgrade scope	Add a new 230 kV double bus double breaker bay at Juniata with two new 3000 amp 230 kV breakers and 4 new 3000 amp 230 kV MODs.
Transformer Information	
None	
New equipment description	One 230 kV double bus double breaker bay Two 3,000 amp 230 kV breakers Four 3,000 amp 230 kV MODs
Substation assumptions	Substation owned by proposer.
Real-estate description	The substation does not need to be expanded.
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	\$4,199,935.00
Component cost (in-service year)	\$4,995,889.00
Substation Upgrade Component	
Component title	Lewistown 230 kV Station Upgrade
Project description	Proprietary Information
Substation name	Lewistown 230 kV Substation
Substation zone	PENELEC
Substation upgrade scope	Add a new 230 kV double bus double breaker bay at Lewistown Substation with two new 3,000 amp 230 kV breakers and 4 new 3,000 amp 230 kV MODs.
Transformer Information	
None	
New equipment description	One 230 kV double bus double breaker bay Two 3,000 amp 230 kV breakers Four 3,000 amp 230 kV MODs
Substation assumptions	Substation could be expanded to either the north or south. If expansion to the north not possible, the existing JUNI-LEWI 230 kV # 1 line would be swapped with the new # 2 line and brought into the new southern bay so as to avoid line crossings east of the station. Expansion to the south of the station has been assumed due to nearby roadway and lower voltage equipment on the north side.
Real-estate description	Assumed that no new real estate is 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	\$10,147,046.00
Component cost (in-service year)	\$10,939,191.00
Transmission Line Upgrade Component	
Component title	Juniata - Lewistown 230 kV # 1 line rebuild (PENELEC segment)
Project description	Proprietary Information
Impacted transmission line	Juniata - Lewistown 230 kV # 1 line
Point A	Juniata
Point B	Lewistown
Point C	
Terrain description	Both mountainous and agricultural terrain.
Existing Line Physical Characteristics	
Operating voltage	230

Conductor size and type	1590 54/19 ACSS conductor	
Hardware plan description	The entire line including all hardware would be removed and replaced with new infrastructure.	
Tower line characteristics	Unknown. Owned by PENELEC.	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	933.000000	1079.000000
Winter (MVA)	998.000000	1143.000000
Conductor size and type	1590 54/19 ACSS conductor	
Shield wire size and type	Dual OPGW	
Rebuild line length	24.5 miles	
Rebuild portion description	Entire line will be rebuilt to accommodate new larger conductor.	
Right of way	No ROW expansion will be 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	\$88,581,086.00	
Component cost (in-service year)	\$95,496,310.00	
Transmission Line Upgrade Component		
Component title	Juniata - Lewistown 230 kV # 1 line rebuild (PPL segment)	
Project description	Proprietary Information	
Impacted transmission line	Juniata - Lewistown 230 kV # 1 line	
Point A	Juniata	
Point B	Lewistown	
Point C		
Terrain description	Both mountainous and agricultural terrain.	
Existing Line Physical Characteristics		
Operating voltage	230	
Conductor size and type	1590 54/19 ACSS conductor	
Hardware plan description	The entire line including all hardware would be removed and replaced with new infrastructure.	
Tower line characteristics	1970's vintage steel towers. Proposing full replacement to support larger size conductor.	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	230.000000	230.000000

	Normal ratings	Emergency ratings
Summer (MVA)	933.000000	1079.000000
Winter (MVA)	998.000000	1143.000000
Conductor size and type	1590 54/19 ACSS conductor	
Shield wire size and type	Dual OPGW	
Rebuild line length	1 mile	
Rebuild portion description	Entire line will be rebuilt to accommodate new larger conductor.	
Right of way	No ROW expansion will be 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	\$4,503,792.00	
Component cost (in-service year)	\$5,357,332.00	

Congestion Drivers

None

Existing Flowgates

None

New Flowgates

Proprietary Information

Financial Information

Capital spend start date	02/2027
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Construction start date	03/2030
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Project Duration (In Months)	49
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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. Juniata - Lewistown 230 kV # 2 line - PROPOSER
2. Juniata 230 kV Station Upgrade - PROPOSER
3. Juniata - Lewistown 230 kV # 1 line rebuild (PPL segment) - 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
Materials & equipment	Yes
Construction & commissioning	Yes
Construction management	Yes
Overheads & miscellaneous costs	No
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 cost containment measures not covered above	Proprietary Information

Additional Comments

None