Blockhouse Creek to Susquehanna and Montour to Stoney Creek

General Information

Proposing entity name	Proprietary & Confidential Information
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Proprietary & Confidential Information
Company proposal ID	Proprietary & Confidential Information
PJM Proposal ID	871
Project title	Blockhouse Creek to Susquehanna and Montour to Stoney Creek
Project description	Reinforce PPL system by adding 500 and 230 kV transmission and substations to strengthen transmission network.
Email	Proprietary & Confidential Information
Project in-service date	12/2030
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	Proprietary & Confidential Information

Project Components

1. E-07-B) Stoney Creek - Slykerville 230kV
2. E-25-A) Homer City / Mainesburg 345kV line - Blockhouse Creek Loop-In
3. E-27-B) Blockhouse Creek - Susquehanna 500kV
4. E-18-B) Montour-Catawissa 230kV
5. E-20-A) Catawissa - Stoney Creek 500kV

6. E-28-B) Frackville/Columbia - Catawissa 230kV Loop-In
7. E-29-A) Tresckow - Slykerville 230kV
8. E-17-D) Catawissa 500kV Substation
9. E-19-C) Stoney Creek 500kV Substation
10. E-26-A) Blockhouse Creek 500kV Substation
11. E-36-B) Spicewood 500kV Substation
12. B-30-A) South Bend - Keystone 500kV terminal equipment upgrade
13. B-32-A) Keystone-Juniata 500 kV terminal equipment upgrade
14. E-10-A) Slykerville (SLKY) substation upgrade
15. E-16-B) Montour substation upgrade
16. E-30-A) Tresckow (TRES) substation upgrade
17. E-33-A) Columbia 230 kV circuit breaker replacement
18. E-24-A) Susquehanna 230 kV circuit breaker replacement
19. E-38-A) Susquehanna 500 kV substation upgrade
20. B-43-A) Frackville (New PPL) line termination modification

Greenfield Transmission Line Component

Component title	E-07-B) Stoney Creek - Slykerville 230kV
Project description	Proprietary & Confidential Information
Point A	Stoney Creek
Point B	Slykerville
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000
Conductor size and type	2 bundled 1590 KCMIL ACSS/MA3 54/19 Falcon	

Nominal voltage	AC
Nominal voltage	230
Line construction type	Overhead
General route description	The approximately 1-mile greenfield route exits the proposed Stoney Creek substation heading Southeast to the assumed Slykerville substation location in Luzerne County and Carbon County, PA.
Terrain description	A detailed inspection of the USGS topographic map reveals relatively consistent, flat lands, with elevation ranging from a high of 1,798 ft above sea level to a low of 1,618 ft above sea level. The Project is entirely located entirely within the Anthracite Subregion Level IV ecoregion. According to the NLCD, the Project area largely consists of deciduous forest, shrub/scrub, barren land, and developed, open space.
Right-of-way width by segment	The route will have a 125 ft ROW width. The proposed ROW will be an expansion of existing transmission line corridors for approximately 44% of the route length, the remainder will be greenfield ROW. The proposed route will be greenfield
Electrical transmission infrastructure crossings	See Attachment 4 (Google Earth .kmz file) for crossing locations.
Civil infrastructure/major waterway facility crossing plan	See Attachment 5 (Crossing Plan) and Attachment 4 (Google Earth .kmz file).

Environmental impacts	Environmental constraints were evaluated within the vicinity of the proposed project centerline and are manageable through avoidance, minimization, and mitigation strategies incorporated at the onset of the routing/siting process. The proposed route crosses numerous aquatic resources, including wetlands, lakes/ponds, and streams but most features could be spanned & avoided with minimal impacts. According to FEMA, no 100-year floodplains or regulated floodways are crossed by the route. This represents total amount of features crossed by the route & impacts from the Project would be significantly less. No major watercourses are crossed which would require agency authorizations for navigable water and/or State Scenic River crossings. No fatal flaws have been identified for the Project. No previously recorded archaeological sites, cemeteries, & architectural resources were recorded within the route. Also, no historic districts are crossed by the proposed route. Five federally listed species (3 endangered and 2 proposed) have known ranges along the proposed route. No critical habitat for any federally listed species intersects the route. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination, mitigation, & an in-depth routing/siting process. See Attachment 08 – Permitting Plan.
Tower characteristics	Approximately 100% of the proposed structures will be a single circuit 230kV steel monopole in a vertical conductor configuration utilizing braced post insulators. All structures will be self-supporting. See structure drawing set included in Attachment 10.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information

Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$7,455,730.00
Component cost (in-service year)	$8,435,475.00

Greenfield Transmission Line Component

Component title	E-25-A) Homer City / Mainesburg 345kV line - Blockhouse Creek Loop-In
Project description	Proprietary & Confidential Information
Point A	Homer City
Point B	Blockhouse Creek
Point C	Mainesburg

	Normal ratings	Emergency ratings
Summer (MVA)	1972.000000	2032.000000
Winter (MVA)	2123.000000	2174.000000

Conductor size and type	2 bundled 1033 KCMIL ACSS/MA3 54/7 Curlew
Nominal voltage	AC
Nominal voltage	345
Line construction type	Overhead
General route description	The approximately 9-mile route heads southeast from the existing Homer City - Mainesburg 345kV line to the proposed Blockhouse Creek substation.

Terrain description	A detailed inspection of the USGS topographic map reveals relatively consistent, flat lands, with elevation within the Project ranging from a high of 2,220 ft above sea level to a low of 1,344 ft above sea level. The Project is located within 2 Level IV ecoregions (Glaciated High Allegheny Plateau and Glaciated Low Allegheny Plateau). According to the NLCD, the Project area largely consists of deciduous forest, cultivated cropland, hay/pasture, mixed forest, open water, scrub/shrub, wetlands and developed, open space.
Right-of-way width by segment	The route will have a 150 ft ROW width. The proposed ROW will be greenfield.
Electrical transmission infrastructure crossings	See Attachment 4 (Google Earth .kmz file) for crossing locations.
Civil infrastructure/major waterway facility crossing plan	See Attachment 5 (Crossing Plan) and Attachment 4 (Google Earth .kmz file).
Environmental impacts	Environmental constraints were evaluated within the vicinity of the proposed project centerline and are manageable through avoidance, minimization, and mitigation strategies incorporated at the onset of the routing/siting process. The proposed route crosses numerous aquatic resources, including wetlands, lakes/ponds, and streams but most features could be spanned & avoided with minimal impacts. According to FEMA, multiple 100-year floodplains are crossed by the route. This represent total amount of features crossed by the route & impacts from the Project would be significantly less. No major watercourses are which will require agency authorizations for navigable water and/or State Scenic River crossings. No fatal flaws have been identified for the Project. Multiple previously recorded archaeological sites, cemeteries, & architectural resources were recorded within the vicinity of the route. However, no historic districts are crossed by the proposed route. Three federally listed species (2 endangered, and 1 proposed) have known ranges along the proposed route. No critical habitat for any federally listed species intersects the route. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination, mitigation, & an in-depth routing/siting process. No ‘Major Federal Action’ that would invoke NEPA is anticipated to result from the proposed route. See Attachment 08 – Permitting Plan.
Tower characteristics	The proposed structures will be double circuit 345kV steel monopole in a vertical conductor configuration utilizing braced post insulators. All structures will be self-supporting. See structure drawing set included in Attachment 10.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information

Component Cost Details - In Current Year $	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$36,621,772.00
Component cost (in-service year)	$41,434,174.00

Greenfield Transmission Line Component

Component title	E-27-B) Blockhouse Creek - Susquehanna 500kV	
Project description	Proprietary & Confidential Information	
Point A	Blockhouse Creek	
Point B	Susquehana	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	5210.000000	5803.000000
Winter (MVA)	6173.000000	6697.000000
Conductor size and type	3 bundled 1780 KCMIL ACSS/MA3 84/19 Chukar	

Nominal voltage	AC
Nominal voltage	500
Line construction type	Overhead
General route description	The approximately 65-mile route runs southeast from the proposed Blockhouse Creek substation to the existing Susquehanna substation. The route is mostly greenfield and parallels the existing PPL Susquehanna-Montour 230 kV corridor for the final approximately 3 miles into Susquehanna. The route extends across Lycoming County, Columbia County, and Luzerne County, Pennsylvaina.
Terrain description	A detailed inspection of the USGS topographic map reveals relatively consistent, flat lands, with elevation within the Project ranging from a high of 2,275 ft above sea level to a low of 575 ft above sea level. The Project is located within 5 Level IV ecoregions (Glaciated Low Allegheny Plateau, Northern Dissected Ridges and Knobs, Northern Sandstone Ridges, Northern Shale Valleys, and Unglaciated High Allegheny Plateau). According to the NLCD, the Project area largely consists of deciduous forest, cultivated cropland, hay/pasture, mixed forest, open water, scrub/shrub, wetlands and developed, open space.
Right-of-way width by segment	The route will have a 200 ft ROW width. The proposed ROW will be an expansion of existing transmission line corridors for approximately 1% of the route length, the remainder will be greenfield ROW.
Electrical transmission infrastructure crossings	See Attachment 4 (Google Earth .kmz file) for crossing locations.
Civil infrastructure/major waterway facility crossing plan	See Attachment 5 (Crossing Plan) and Attachment 4 (Google Earth .kmz file).

Environmental impacts	Environmental constraints were evaluated within the vicinity of the proposed project centerline and are manageable through avoidance, minimization, and mitigation strategies incorporated at the onset of the routing/siting process. The proposed route crosses numerous aquatic resources, including wetlands, lakes/ponds, and streams but most features could be spanned & avoided with minimal impacts. According to FEMA, multiple 100-year floodplains are crossed by the route. This represent total amount of features crossed by the route & impacts from the Project would be significantly less. No major watercourses are which will require agency authorizations for navigable water and/or State Scenic River crossings. No fatal flaws have been identified for the Project. Multiple previously recorded archaeological sites, cemeteries, & architectural resources were recorded within the vicinity of the route. However, no historic districts are crossed by the proposed route. Seven federally listed species (3 endangered, and 4 proposed) have known ranges along the proposed route. No critical habitat for any federally listed species intersects the route. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination, mitigation, & an in-depth routing/siting process. No ‘Major Federal Action’ that would invoke NEPA is anticipated to result from the proposed route. See Attachment 08 – Permitting Plan.
Tower characteristics	Approximately 1% of the proposed structures will be a single circuit 500kV guyed-v lattice in a horizontal conductor configuration. Approximately 99% of the proposed structures will be a single circuit 500kV self-supporting lattice in a horizontal conductor configuration. See structure drawing set included in Attachment 10.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information

Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$331,033,839.00
Component cost (in-service year)	$374,534,404.00

Greenfield Transmission Line Component

Component title	E-18-B) Montour-Catawissa 230kV
Project description	Proprietary & Confidential Information
Point A	Montour
Point B	Catawissa
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000

Conductor size and type	2 bundled 1590 KCMIL ACSS/MA3 54/19 Falcon
Nominal voltage	AC
Nominal voltage	230
Line construction type	Overhead
General route description	The approximately 17-mile route runs southeast from the existing Montour substation to the proposed Catawissa substation. The route parallels about 5 miles of the existing PPL Montour to Columbia 230 kV corridor and the PPL Columbia to Frackville 230 kV corridor where possible. The route crosses through Montour County and Columbia County in Pennsylvania.

Terrain description	A detailed inspection of the USGS topographic map reveals relatively consistent, flat lands, with intermittent peaks of elevation ranging from a high of 1,196 ft above sea level to a low of 450 ft above sea level. The Project is located within 2 Level IV ecoregions (North Sandstone Ridges, and Northern Shale Valleys). According to the NLCD, the Project area largely consists of deciduous forest, cultivated cropland, hay/pasture, mixed forest, open water, and developed, open space.
Right-of-way width by segment	The route will have a 125 ft ROW width. The proposed ROW will be an expansion of existing transmission line corridors for approximately 52% of the route length, the remainder will be greenfield ROW. The proposed route will be greenfield
Electrical transmission infrastructure crossings	See Attachment 4 (Google Earth .kmz file) for crossing locations.
Civil infrastructure/major waterway facility crossing plan	See Attachment 5 (Crossing Plan) and Attachment 4 (Google Earth .kmz file).
Environmental impacts	Environmental constraints were evaluated within the vicinity of the proposed project centerline and are manageable through avoidance, minimization, and mitigation strategies incorporated at the onset of the routing/siting process. The proposed route crosses numerous aquatic resources, including wetlands, lakes/ponds, and streams but most features could be spanned & avoided with minimal impacts. According to FEMA, multiple 100-year floodplains are crossed by the route. This represent total amount of features crossed by the route & impacts from the Project would be significantly less. The proposed Project crosses the Susquehanna River which may require agency authorizations for navigable water and/or State Scenic River crossings. No fatal flaws have been identified for the Project. Multiple previously recorded archaeological sites & architectural resources were recorded within the vicinity of the route. However, no cemeteries or historic districts are crossed by the proposed route. Six federally listed species (3 endangered, and 3 proposed) have known ranges along the proposed route. Critical habitat for one federally listed freshwater mussel species intersects the route. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination, mitigation, & an in-depth routing/siting process. No ‘Major Federal Action’ that would invoke NEPA is anticipated to result from the proposed route. See Attachment 08 – Permitting Plan.
Tower characteristics	Approximately 94% of the proposed structures will be a single circuit 230kV steel monopole in a vertical conductor configuration utilizing braced post insulators. Approximately 6% of the proposed structures will be ingle circuit 230kV 3-Pole structures with horizontal conductor configuration for transmission crossings. All structures will be self-supporting. See structure drawing set included in Attachment 10.
Construction responsibility	Proprietary & Confidential Information

Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$66,702,810.00
Component cost (in-service year)	$75,468,107.00

Greenfield Transmission Line Component

Component title	E-20-A) Catawissa - Stoney Creek 500kV
Project description	Proprietary & Confidential Information
Point A	Catawissa
Point B	Stoney Creek
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	5210.000000	5803.000000
Winter (MVA)	6173.000000	6697.000000

Conductor size and type	3 bundled 1780 KCMIL ACSS/MA3 84/19 Chukar
Nominal voltage	AC
Nominal voltage	500
Line construction type	Overhead
General route description	The approximately 26-mile route heads southeast from the proposed Catawissa substation and travels 10-miles through Columbia County, PA. The route turns east near the Schuylkill County line and continues for 16- miles before turning south to parallel the Harwood - Siegfried 230kV corridor and terminating into the proposed Stony Creek substation.
Terrain description	A detailed inspection of the USGS topographic map reveals relatively consistent, flat lands, with elevation ranging from a high of 1,877 ft above sea level to a low of 838 ft above sea level. The Project is located within 3 Level IV ecoregions (Anthracite Subregion, North Sandstone Ridges, and Northern Shale Valleys). According to the NLCD, the Project area largely consists of deciduous forest, shrub/scrub, barren land, and developed, open space.
Right-of-way width by segment	The route will have a 200 ft ROW width. The proposed ROW will be an expansion of existing transmission line corridors for approximately 5% of the route length, the remainder will be greenfield ROW. The proposed route will be greenfield.
Electrical transmission infrastructure crossings	See Attachment 4 (Google Earth .kmz file) for crossing locations.
Civil infrastructure/major waterway facility crossing plan	See Attachment 5 (Crossing Plan) and Attachment 4 (Google Earth .kmz file).

Environmental impacts	Environmental constraints were evaluated within the vicinity of the proposed project centerline and are manageable through avoidance, minimization, and mitigation strategies incorporated at the onset of the routing/siting process. The proposed route crosses numerous aquatic resources, including wetlands, lakes/ponds, and streams but most features could be spanned & avoided with minimal impacts. According to FEMA, multiple 100-year floodplains are crossed by the route. This represent total amount of features crossed by the route & impacts from the Project would be significantly less. No major watercourses are which will require agency authorizations for navigable water and/or State Scenic River crossings. No fatal flaws have been identified for the Project. Multiple previously recorded archaeological sites & architectural resources were recorded within the vicinity of the route. However, no cemeteries or historic districts are crossed by the proposed route. Five federally listed species (3 endangered, and 2 proposed) have known ranges along the proposed route. No critical habitat for any federally listed species intersects the route. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination, mitigation, & an in-depth routing/siting process. No ‘Major Federal Action’ that would invoke NEPA is anticipated to result from the proposed route. See Attachment 08 – Permitting Plan.
Tower characteristics	The proposed structures will mostly be single circuit 500kV lattice self-supporting or guyed-v towers in a horizontal conductor configuration. Delta configuration may be required in some locations. All angle structures will be self-supporting. See structure drawing set included in Attachment 10.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information

Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$130,558,907.00
Component cost (in-service year)	$147,715,420.00

Greenfield Transmission Line Component

Component title	E-28-B) Frackville/Columbia - Catawissa 230kV Loop-In
Project description	Proprietary & Confidential Information
Point A	Colombia
Point B	Catawissa
Point C	Frackville

	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000

Conductor size and type	2 bundled 1590 KCMIL ACSS/MA3 54/19 Falcon
Nominal voltage	AC
Nominal voltage	230
Line construction type	Overhead
General route description	The approximately 2-mile route travels northeast from the existing Frackville - Colombia 230kV corridor to proposed Catawissa substation in Colombia County, PA.
Terrain description	A detailed inspection of the USGS topographic map reveals relatively consistent, flat lands and rolling terrain, with elevation ranging from a high of 949 ft above sea level to a low of 697 ft above sea level. The Project is located within 2 Level IV ecoregions (North Sandstone Ridges, and Northern Shale Valleys). According to the NLCD, the Project area largely consists of deciduous forest, cultivated cropland, hay/pasture, and developed, open space.

Right-of-way width by segment	The route will have a 150 ft ROW width. The proposed route will be greenfield.
Electrical transmission infrastructure crossings	See Attachment 4 (Google Earth .kmz file) for crossing locations.
Civil infrastructure/major waterway facility crossing plan	See Attachment 5 (Crossing Plan) and Attachment 4 (Google Earth .kmz file).
Environmental impacts	Environmental constraints were evaluated within the vicinity of the proposed project centerline and are manageable through avoidance, minimization, and mitigation strategies incorporated at the onset of the routing/siting process. The proposed route crosses multiple aquatic resources, including wetlands, lakes/ponds, and streams but most features could be spanned & avoided with minimal impacts. According to FEMA, one 100-year floodplain is crossed by the route. This represents total amount of features crossed by the route & impacts from the Project would be significantly less. The proposed Project does not cross any waterways which will require agency authorizations for navigable water and/or State Scenic River crossings. No fatal flaws have been identified for the Project. No previously recorded archaeological sites, cemeteries, & architectural resources were recorded within the route. Also, no historic districts are crossed by the proposed route. Four federally listed species (3 endangered, and 1 proposed) have known ranges along the proposed route. No critical habitat for any federally listed species intersects the route. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination, mitigation, & an in-depth routing/siting process. No ‘Major Federal Action’ that would invoke NEPA is anticipated to result from the proposed route. See Attachment 08 – Permitting Plan.
Tower characteristics	The proposed structures will be a single circuit 230kV steel monopole in a vertical conductor configuration utilizing braced post insulators. All structures will be self-supporting. See structure drawing set included in Attachment 10.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information

Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$16,792,984.00
Component cost (in-service year)	$18,999,720.00

Greenfield Transmission Line Component

Component title	E-29-A) Tresckow - Slykerville 230kV
Project description	Proprietary & Confidential Information
Point A	Tresckow
Point B	Slykerville
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000

Conductor size and type	2 bundled 1590 KCMIL ACSS/MA3 54/19 Falcon
Nominal voltage	AC
Nominal voltage	230
Line construction type	Overhead

General route description	The approximately 0.7 mile route exits the presumed Slykerville substation location and heads south along the existing Harwood - Siegfried 230kV corridor to the presumed Tresckow substation location in Carbon County, PA.
Terrain description	A detailed inspection of the USGS topographic map reveals relatively consistent, flat lands, with elevation ranging from a high of 1,835 ft above sea level to a low of 1,641 ft above sea level. The Project is entirely located within the Anthracite Subregion Level IV ecoregion. According to the NLCD, the Project area largely consists of deciduous forest, barren land, and developed, open space.
Right-of-way width by segment	The route will have a 125 ft ROW width. The proposed ROW will be an expansion of existing transmission line corridors for approximately 57% of the route length, the remainder will be greenfield ROW.
Electrical transmission infrastructure crossings	See Attachment 4 (Google Earth .kmz file) for crossing locations.
Civil infrastructure/major waterway facility crossing plan	See Attachment 5 (Crossing Plan) and Attachment 4 (Google Earth .kmz file).
Environmental impacts	Environmental constraints were evaluated within the vicinity of the proposed project centerline and are manageable through avoidance, minimization, and mitigation strategies incorporated at the onset of the routing/siting process. The proposed route does not cross any aquatic resources, including wetlands, lakes/ponds. According to FEMA, no 100-year floodplains are crossed by the route. This represent total amount of features crossed by the route & impacts from the Project would be significantly less. No major watercourses are which will require agency authorizations for navigable water and/or State Scenic River crossings. No fatal flaws have been identified for the Project. No previously recorded archaeological sites, cemeteries, & architectural resources were recorded within the route. Additionally, no historic districts are crossed by the proposed route. Five federally listed species (3 endangered, and 2 proposed) have known ranges along the proposed route. No critical habitat for any federally listed species intersects the route. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination, mitigation, & an in-depth routing/siting process. No ‘Major Federal Action’ that would invoke NEPA is anticipated to result from the proposed route. See Attachment 08 – Permitting Plan.
Tower characteristics	The proposed structures will be a single circuit 230kV steel monopole in a delta conductor configuration utilizing braced post insulators. All structures will be self-supporting. See structure drawing set included in Attachment 10.
Construction responsibility	Proprietary & Confidential Information

Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$4,200,431.00
Component cost (in-service year)	$4,752,402.00

Greenfield Substation Component

Component title	E-17-D) Catawissa 500kV Substation
Project description	Proprietary & Confidential Information
Substation name	Catawissa
Substation description	AC Air Insulated Substation (AIS): New proposed 500-230kV Substation. New 500kV double breaker double bus (DBDB) switchyard with three (3) bays, three (3) line terminals, eight (8) 500kV, 5000A, 63kAIC breakers, two (2) 500-230kV, 1700 MVA transformer banks. New 230kV switchyard with two (2) bays, three (3) line terminals, four (4) 230kV, 5000A, 63kAIC breakers.
Nominal voltage	AC
Nominal voltage	500/230

Transformer Information

	Name		Capacity (MVA)
Transformer	500-230kV Xfmr #1		1700
	High Side	Low Side	Tertiary
Voltage (kV)	500	230	

	Name		Capacity (MVA)
Transformer	500-230kV Xfmr #2		1700
	High Side	Low Side	Tertiary
Voltage (kV)	500	230	

Major equipment description	AC Air Insulated Substation (AIS): New proposed 500-230kV Substation. New 500kV double breaker double bus (DBDB) switchyard with three (3) bays, three (3) line terminals, eight (8) 500kV, 5000A, 63kAIC breakers, two (2) 500-230kV, 1700 MVA transformer banks. New 230kV switchyard with two (2) bays, three (3) line terminals, four (4) 230kV, 5000A, 63kAIC breakers.

	Normal ratings	Emergency ratings
Summer (MVA)	1500.000000	2000.000000
Winter (MVA)	1500.000000	2000.000000

Environmental assessment	Environmental constraints were evaluated within the proposed substation parcel and are manageable through avoidance, minimization, and mitigation strategies. The proposed parcel contains one NWI-mapped wetlands. According to FEMA, no portion of the proposed substation parcel contains any 100-year floodplains or regulated floodways. No major watercourses are located within the proposes parcel. However, it is assumed any overland flow will drain to Catawissa Creek and its downstream tributaries. No fatal flaws have been identified for the Project. Based on publicly available data, no previously recorded archaeological sites, cemeteries, or architectural resources were recorded within the immediate vicinity of the proposed substation parcel. Additionally, no historic districts located within the immediate vicinity of the Site. Four federally listed species (3 endangered and 1 proposed) have known ranges within the vicinity of the site. No critical habitat was identified within the vicinity of the proposed substation parcel. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination and mitigation. No ‘Major Federal Action’ that would invoke NEPA is anticipated to result from the proposed project. See Attachment 08 – Permitting Plan.
Outreach plan	The proposer is committed to informing the public about the project to the greatest extent practicable while working with all interested stakeholders including landowners through a robust public outreach program to address and respond to community concerns. A well-designed public outreach program can have numerous benefits, including fostering cooperative relationships with landowners and other stakeholders, expediting the regulatory permitting process, and assisting with project development. In general, the purpose of the community outreach plan is to gain community support for the project. In the affected communities, the proposer's public outreach plan will educate the public and relevant stakeholders on specific project details to enable timely regulatory approvals and construction activities. Elements of the public outreach plan will include the following: 1) Identify potential issues at an early stage by engagement with key community stakeholders at the outset; 2) Broaden the community engagement process to identify potential and relevant community benefits that can facilitate community support for the proposed project; 3) Develop a broad base of community support for the proposed project before the regulatory agencies; and 4) Develop a comprehensive administrative record documenting the community outreach process that can be presented to the regulatory agency or, in the event of a legal challenge, to the appropriate court. The outreach plan proposes to dedicate considerable time and resources in engaging the community, and specifically the affected community during the planning process to identify highly sensitive areas in order to develop a project that has the least amount of cultural, environmental, and social impacts. The plans will reflect avoidance of impacts rather than mitigation. However, in some cases, if avoidance is not possible, then the proposer will involve landowners and other stakeholders in providing appropriate and practical mitigation measures. Public outreach activities by the proposer will begin following project award.
Land acquisition plan	See Attachment 9.

Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$117,287,040.00
Component cost (in-service year)	$132,699,520.00

Greenfield Substation Component

Component title	E-19-C) Stoney Creek 500kV Substation
Project description	Proprietary & Confidential Information
Substation name	Stoney Creek
Substation description	AC Air Insulated Substation (AIS): New proposed 500-230kV Substation. New 500kV double breaker double bus (DBDB) switchyard with three (3) bays, three (3) line terminals, eight (8) 500kV, 5000A, 63kAIC breakers, one (1) 500kV, +/- 500 MVAR STATCOM, two (2) 500-230kV, 1700 MVA transformer banks. New 230kV DBDB switchyard with one (1) bay, one (1) line terminal, four (4) 230kV, 5000A, 63kAIC breakers.
Nominal voltage	AC
Nominal voltage	500/230

Transformer Information

	Name		Capacity (MVA)
Transformer	500-230kV Xfmr #1		1700
	High Side	Low Side	Tertiary
Voltage (kV)	500	230	

	Name		Capacity (MVA)
Transformer	500-230kV Xfmr #2		1700
	High Side	Low Side	Tertiary
Voltage (kV)	500	230	

Major equipment description

AC Air Insulated Substation (AIS): New proposed 500-230kV Substation. New 500kV double breaker double bus (DBDB) switchyard with three (3) bays, three (3) line terminals, eight (8) 500kV, 5000A, 63kAIC breakers, one (1) 500kV, +/- 500 MVAR STATCOM, two (2) 500-230kV, 1700 MVA transformer banks. New 230kV DBDB switchyard with one (1) bay, one (1) line terminal, four (4) 230kV, 5000A, 63kAIC breakers.

	Normal ratings	Emergency ratings
Summer (MVA)	1500.000000	2000.000000
Winter (MVA)	1500.000000	2000.000000

Environmental assessment	Environmental constraints were evaluated within the proposed substation parcel and are manageable through avoidance, minimization, and mitigation strategies. The proposed parcel contains one NWI-mapped wetlands. According to FEMA, no portion of the proposed substation parcel contains any 100-year floodplains or regulated floodways. No major watercourses are located within the proposes parcel. However, it is assumed any overland flow will drain to Catawissa Creek and its downstream tributaries. No fatal flaws have been identified for the Project. Based on publicly available data, no previously recorded archaeological sites, cemeteries, or architectural resources were recorded within the immediate vicinity of the proposed substation parcel. Additionally, no historic districts located within the immediate vicinity of the Site. Four federally listed species (2 endangered and 2 proposed) have known ranges within the vicinity of the site. No critical habitat was identified within the vicinity of the proposed substation parcel. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination and mitigation. No ‘Major Federal Action’ that would invoke NEPA is anticipated to result from the proposed project. See Attachment 08 – Permitting Plan.
Outreach plan	The proposer is committed to informing the public about the project to the greatest extent practicable while working with all interested stakeholders including landowners through a robust public outreach program to address and respond to community concerns. A well-designed public outreach program can have numerous benefits, including fostering cooperative relationships with landowners and other stakeholders, expediting the regulatory permitting process, and assisting with project development. In general, the purpose of the community outreach plan is to gain community support for the project. In the affected communities, the proposer's public outreach plan will educate the public and relevant stakeholders on specific project details to enable timely regulatory approvals and construction activities. Elements of the public outreach plan will include the following: 1) Identify potential issues at an early stage by engagement with key community stakeholders at the outset; 2) Broaden the community engagement process to identify potential and relevant community benefits that can facilitate community support for the proposed project; 3) Develop a broad base of community support for the proposed project before the regulatory agencies; and 4) Develop a comprehensive administrative record documenting the community outreach process that can be presented to the regulatory agency or, in the event of a legal challenge, to the appropriate court. The outreach plan proposes to dedicate considerable time and resources in engaging the community, and specifically the affected community during the planning process to identify highly sensitive areas in order to develop a project that has the least amount of cultural, environmental, and social impacts. The plans will reflect avoidance of impacts rather than mitigation. However, in some cases, if avoidance is not possible, then the proposer will involve landowners and other stakeholders in providing appropriate and practical mitigation measures. Public outreach activities by the proposer will begin following project award.
Land acquisition plan	See Attachment 9.

Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$165,942,615.00
Component cost (in-service year)	$187,748,837.00

Greenfield Substation Component

Component title	E-26-A) Blockhouse Creek 500kV Substation
Project description	Proprietary & Confidential Information
Substation name	Blockhouse Creek
Substation description	AC Air Insulated Substation (AIS): New proposed 500-345-230kV Substation. New 500kV double breaker double bus (DBDB) switchyard with one (1) bay, one (1) line terminal, two (2) 500kV, 5000A, 63kAIC breakers, one (1) 500-230kV, 1700 MVA transformer bank, one (1) 500-345kV, 1500 MVA transformer bank. New 230kV ring switchyard with three (3) line terminals, three (3) 230kV, 5000A, 63kAIC breakers. New 345kV ring switchyard with three (3) line terminals, three (3) 345kV, 5000A, 63kAIC breakers.
Nominal voltage	AC

Nominal voltage	500/345/230

Transformer Information

	Name	Capacity (MVA)
Transformer	500-230kV Xfmr #1	1700

	High Side	Low Side	Tertiary
Voltage (kV)	500	200	

	Name	Capacity (MVA)
Transformer	500-345kV Xfmr #2	1500

	High Side	Low Side	Tertiary
Voltage (kV)	500	345	

Major equipment description	AC Air Insulated Substation (AIS): New proposed 500-345-230kV Substation. New 500kV double breaker double bus (DBDB) switchyard with one (1) bay, one (1) line terminal, two (2) 500kV, 5000A, 63kAIC breakers, one (1) 500-230kV, 1700 MVA transformer bank, one (1) 500-345kV, 1500 MVA transformer bank. New 230kV ring switchyard with three (3) line terminals, three (3) 230kV, 5000A, 63kAIC breakers. New 345kV ring switchyard with three (3) line terminals, three (3) 345kV, 5000A, 63kAIC breakers.

	Normal ratings	Emergency ratings
Summer (MVA)	1500.000000	2000.000000
Winter (MVA)	1500.000000	2000.000000

Environmental assessment	Environmental constraints were evaluated within the proposed substation parcel and are manageable through avoidance, minimization, and mitigation strategies. The proposed parcel contains one NWI-mapped wetlands. According to FEMA, no portion of the proposed substation parcel contains any 100-year floodplains or regulated floodways. No major watercourses are located within the proposes parcel. However, it is assumed any overland flow will drain to Blockhouse Creek and its downstream tributaries. No fatal flaws have been identified for the Project. Based on publicly available data, no previously recorded archaeological sites, cemeteries, or architectural resources were recorded within the immediate vicinity of the proposed substation parcel. Additionally, no historic districts located within the immediate vicinity of the Site. Two federally listed species (1 endangered and 1 proposed) have known ranges within the vicinity of the site. No critical habitat was identified within the vicinity of the proposed substation parcel. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination and mitigation. No ‘Major Federal Action’ that would invoke NEPA is anticipated to result from the proposed project. See Attachment 08 – Permitting Plan.
Outreach plan	The proposer is committed to informing the public about the project to the greatest extent practicable while working with all interested stakeholders including landowners through a robust public outreach program to address and respond to community concerns. A well-designed public outreach program can have numerous benefits, including fostering cooperative relationships with landowners and other stakeholders, expediting the regulatory permitting process, and assisting with project development. In general, the purpose of the community outreach plan is to gain community support for the project. In the affected communities, the proposer's public outreach plan will educate the public and relevant stakeholders on specific project details to enable timely regulatory approvals and construction activities. Elements of the public outreach plan will include the following: 1) Identify potential issues at an early stage by engagement with key community stakeholders at the outset; 2) Broaden the community engagement process to identify potential and relevant community benefits that can facilitate community support for the proposed project; 3) Develop a broad base of community support for the proposed project before the regulatory agencies; and 4) Develop a comprehensive administrative record documenting the community outreach process that can be presented to the regulatory agency or, in the event of a legal challenge, to the appropriate court. The outreach plan proposes to dedicate considerable time and resources in engaging the community, and specifically the affected community during the planning process to identify highly sensitive areas in order to develop a project that has the least amount of cultural, environmental, and social impacts. The plans will reflect avoidance of impacts rather than mitigation. However, in some cases, if avoidance is not possible, then the proposer will involve landowners and other stakeholders in providing appropriate and practical mitigation measures. Public outreach activities by the proposer will begin following project award.
Land acquisition plan	See Attachment 9.

Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$95,354,217.00
Component cost (in-service year)	$107,884,544.00

Greenfield Substation Component

Component title	E-36-B) Spicewood 500kV Substation
Project description	Proprietary & Confidential Information
Substation name	Spicewood
Substation description	AC Air Insulated Substation (AIS): New proposed 500-230kV Substation. New 500kV double breaker double bus (DBDB) switchyard with two (2) bays, two (2) line terminals, six (6) 500kV, 5000A, 63kAIC breakers, two (2) 500-230kV, 1700 MVA transformer banks. New 230kV breaker and a half (BAAH) switchyard with two (2) bays, four (4) line terminals, eight (8) 230kV, 5000A, 63kAIC breakers.
Nominal voltage	AC
Nominal voltage	500/230

Transformer Information

	Name		Capacity (MVA)
Transformer	500-230kV Xfmr #1		1700
	High Side	Low Side	Tertiary
Voltage (kV)	500	230	

	Name		Capacity (MVA)
Transformer	500-230kV Xfmr #2		1700
	High Side	Low Side	Tertiary
Voltage (kV)	500	230	

Major equipment description

AC Air Insulated Substation (AIS): New proposed 500-230kV Substation. New 500kV double breaker double bus (DBDB) switchyard with two (2) bays, two (2) line terminals, six (6) 500kV, 5000A, 63kAIC breakers, two (2) 500-230kV, 1700 MVA transformer banks. New 230kV breaker and a half (BAAH) switchyard with two (2) bays, four (4) line terminals, eight (8) 230kV, 5000A, 63kAIC breakers.

	Normal ratings	Emergency ratings
Summer (MVA)	1500.000000	2000.000000
Winter (MVA)	1700.000000	2200.000000

Environmental assessment	Environmental constraints were evaluated within the proposed substation parcel and are manageable through avoidance, minimization, and mitigation strategies. The proposed parcel contains no NWI-mapped wetlands. According to FEMA, no portion of the proposed substation parcel contains any 100-year floodplains or regulated floodways. No major watercourses are located within the proposes parcel. However, it is assumed any overland flow will drain to Aquashicola Creek and its downstream tributaries. No fatal flaws have been identified for the Project. Based on publicly available data, no previously recorded archaeological sites, cemeteries, or architectural resources were recorded within the immediate vicinity of the proposed substation parcel. Additionally, no historic districts located within the immediate vicinity of the Site. Five federally listed species (3 endangered, 1 threatened, and 1 proposed) have known ranges within the vicinity of the site. No critical habitat was identified within the vicinity of the proposed substation parcel. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination and mitigation. No ‘Major Federal Action’ that would invoke NEPA is anticipated to result from the proposed project. See Attachment 08 – Permitting Plan.
Outreach plan	The proposer is committed to informing the public about the project to the greatest extent practicable while working with all interested stakeholders including landowners through a robust public outreach program to address and respond to community concerns. A well-designed public outreach program can have numerous benefits, including fostering cooperative relationships with landowners and other stakeholders, expediting the regulatory permitting process, and assisting with project development. In general, the purpose of the community outreach plan is to gain community support for the project. In the affected communities, the proposer's public outreach plan will educate the public and relevant stakeholders on specific project details to enable timely regulatory approvals and construction activities. Elements of the public outreach plan will include the following: 1) Identify potential issues at an early stage by engagement with key community stakeholders at the outset; 2) Broaden the community engagement process to identify potential and relevant community benefits that can facilitate community support for the proposed project; 3) Develop a broad base of community support for the proposed project before the regulatory agencies; and 4) Develop a comprehensive administrative record documenting the community outreach process that can be presented to the regulatory agency or, in the event of a legal challenge, to the appropriate court. The outreach plan proposes to dedicate considerable time and resources in engaging the community, and specifically the affected community during the planning process to identify highly sensitive areas in order to develop a project that has the least amount of cultural, environmental, and social impacts. The plans will reflect avoidance of impacts rather than mitigation. However, in some cases, if avoidance is not possible, then the proposer will involve landowners and other stakeholders in providing appropriate and practical mitigation measures. Public outreach activities by the proposer will begin following project award.
Land acquisition plan	See Attachment 9.

Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$115,146,756.00
Component cost (in-service year)	$130,277,986.00

Transmission Line Upgrade Component

Component title	B-30-A) South Bend - Keystone 500kV terminal equipment upgrade
Project description	Proprietary & Confidential Information
Impacted transmission line	South Bend - Keystone 500kV
Point A	South Bend
Point B	Keystone
Point C	
Terrain description	Existing line to remain intact as-is. Proposal is to uprate remote end terminals at South Bend and Keystone to match conductor ratings.

Existing Line Physical Characteristics		
Operating voltage	500	
Conductor size and type	Per Transmission Owner system	
Hardware plan description	Existing line to remain intact as-is. Proposal is to uprate remote end terminals at South Bend and Keystone to match conductor ratings.	
Tower line characteristics	Existing line to remain intact as-is. Proposal is to uprate remote end terminals at South Bend and Keystone to match conductor ratings.	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	500.000000	500.000000
	Normal ratings	Emergency ratings
Summer (MVA)	3573.000000	4378.000000
Winter (MVA)	4050.000000	5194.000000
Conductor size and type	N/A	
Shield wire size and type	N/A	
Rebuild line length	N/A	
Rebuild portion description	Existing line to remain intact as-is. Proposal is to uprate remote end terminals at South Bend and Keystone to match conductor ratings.	
Right of way	Existing right-of-way to remain as-is. Proposal is to uprate remote end terminals at South Bend and Keystone to match conductor ratings.	
Construction responsibility	Proprietary & Confidential Information	
Benefits/Comments	Proprietary & Confidential Information	
Component Cost Details - In Current Year $		
Engineering & design	Proprietary & Confidential Information	

Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$4,683,750.00
Component cost (in-service year)	$4,683,750.00

Transmission Line Upgrade Component

Component title	B-32-A) Keystone-Juniata 500 kV terminal equipment upgrade
Project description	Proprietary & Confidential Information
Impacted transmission line	Keystone - Juniata 500kV
Point A	Keystone
Point B	Juniata
Point C	
Terrain description	Existing line to remain intact as-is. Proposal is to uprate terminal equipment to match conductor ratings.
Existing Line Physical Characteristics	
Operating voltage	500
Conductor size and type	Per existing transmission owner system
Hardware plan description	Existing line to remain intact as-is. Proposal is to uprate terminal equipment to match conductor ratings.

Tower line characteristics	Existing right-of-way to remain as-is. Proposal is to upgrade terminal equipment to match conductor ratings.	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	500.000000	500.000000
	Normal ratings	Emergency ratings
Summer (MVA)	2939.000000	3732.000000
Winter (MVA)	3618.000000	4423.000000
Conductor size and type	N/A	
Shield wire size and type	N/A	
Rebuild line length	N/A	
Rebuild portion description	Existing line to remain intact as-is. Proposal is to uprate terminal equipment to match conductor ratings.	
Right of way	Existing right-of-way to remain as-is. Proposal is to upgrade terminal equipment to match conductor ratings.	
Construction responsibility	Proprietary & Confidential Information	
Benefits/Comments	Proprietary & Confidential Information	
Component Cost Details - In Current Year $		
Engineering & design	Proprietary & Confidential Information	
Permitting / routing / siting	Proprietary & Confidential Information	
ROW / land acquisition	Proprietary & Confidential Information	
Materials & equipment	Proprietary & Confidential Information	
Construction & commissioning	Proprietary & Confidential Information	

Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$4,683,750.00
Component cost (in-service year)	$.00

Substation Upgrade Component

Component title	E-10-A) Slykerville (SLKY) substation upgrade
Project description	Proprietary & Confidential Information
Substation name	Slykerville (SLKY)
Substation zone	PPL
Substation upgrade scope	Add (3) 230kV breakers in switchuard to accept (2) new line positions.

Transformer Information

None

New equipment description	Add (3) 230kV, 5000A, 63kAIC breakers.
Substation assumptions	Assumes required equipment upgrades occur in existing footprint. PPL proposed Slykerville (Need number: PPL-2024-0012) through the M3 process. The location, oneline and general arrangement were not available at time of submission.
Real-estate description	PPL proposed Slykerville (Need number: PPL-2024-0012) through the M3 process. The location, oneline and general arrangement were not available at time of submission.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information

Component Cost Details - In Current Year $

Engineering & design	Proprietary & Confidential Information

Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$6,646,875.00
Component cost (in-service year)	$6,646,875.00

Substation Upgrade Component

Component title	E-16-B) Montour substation upgrade
Project description	Proprietary & Confidential Information
Substation name	Montour
Substation zone	PPL
Substation upgrade scope	Add (1) new 230kV breaker to create (1) new line position.

Transformer Information

None

New equipment description	Add (1) 230kV, 5000A, 63kAIC breaker.
Substation assumptions	Assumes required equipment upgrades occur in existing footprint.
Real-estate description	Based on publicly available parcel data and imagery, upgrades are expected to fit fully within existing fenceline on incumbent owned property.
Construction responsibility	Proprietary & Confidential Information

Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$2,282,813.00
Component cost (in-service year)	$2,282,813.00

Substation Upgrade Component

Component title	E-30-A) Tresckow (TRES) substation upgrade
Project description	Proprietary & Confidential Information
Substation name	Tresckow (TRES)
Substation zone	PPL
Substation upgrade scope	Expand the existing 230kV switchyard by adding (1) 230kV breaker to create (1) line position.

Transformer Information

None

New equipment description	Add (1) 230kV, 5000A, 63kAIC breaker.

Substation assumptions	Assumes required equipment upgrades occur in existing footprint. PPL proposed Tresckow (Need number: PPL-2024-0004) through the M3 process. The location, oneline and general arrangement were not available at time of submission.
Real-estate description	PPL proposed Tresckow (Need number: PPL-2024-0004) through the M3 process. The location, oneline and general arrangement were not available at time of submission.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$2,282,813.00
Component cost (in-service year)	$2,282,813.00

Substation Upgrade Component

Component title	E-33-A) Columbia 230 kV circuit breaker replacement
Project description	Proprietary & Confidential Information
Substation name	Columbia 230 kV
Substation zone	PPL

Substation upgrade scope	Replace (1) 230kV breaker in existing switchyard.

Transformer Information

None

New equipment description	Replace (1) 230kV breaker with 230kV, 5000A, 63kAIC breakers.
Substation assumptions	Assumes required equipment upgrades occur in existing footprint.
Real-estate description	Based on publicly available parcel data and imagery, upgrades are expected to fit fully within existing fenceline on incumbent owned property.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$2,282,813.00
Component cost (in-service year)	$2,282,813.00

Substation Upgrade Component

Component title	E-24-A) Susquehanna 230 kV circuit breaker replacement

Project description	Proprietary & Confidential Information
Substation name	Susquehanna 230 kV
Substation zone	PPL
Substation upgrade scope	Replace (11) 230kV breakers in existing switchyard.

Transformer Information

None

New equipment description	Replace (11) 230kV breakers with 230kV, 5000A, 63kAIC breakers.
Substation assumptions	Assumes required equipment upgrades occur in existing footprint.
Real-estate description	Based on publicly available parcel data and imagery, upgrades are expected to fit fully within existing fenceline on transmission-owner owned property.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information

Component Cost Details - In Current Year $

Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$13,696,875.00
Component cost (in-service year)	$13,696,875.00

Substation Upgrade Component

Component title	E-38-A) Susquehanna 500 kV substation upgrade
Project description	Proprietary & Confidential Information
Substation name	Susquehanna 500 kV
Substation zone	PPL
Substation upgrade scope	Expand the 500kV switchyard with (1) breaker to create (1) line positions. Replace (2) existing 500kV breakers.

Transformer Information

None

New equipment description	Add (1) 500kV, 5000A, 63kAIC breaker. Replace (2) existing 500kV breakers with 500kV, 5000A, 63kAIC breakers.
Substation assumptions	Assumes that fence line must be expanded to east to accommodate upgrades.
Real-estate description	Assumes, based on imagery and publicly available parcel data, that space is available on utility property to expand the substation.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information

Component Cost Details - In Current Year $

Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information

Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$12,294,844.00
Component cost (in-service year)	$12,294,844.00

Substation Upgrade Component

Component title	B-43-A) Frackville (New PPL) line termination modification
Project description	Proprietary & Confidential Information
Substation name	Frackville (New PPL)
Substation zone	PPL
Substation upgrade scope	Relocate (1) line termination into an open position on an existing bay.

Transformer Information

None

New equipment description	Relocate (1) line termination into an open position on an existing bay.
Substation assumptions	Assumes that substation upgrade can occur within existing fence line. General arrangement and aerial imagery not available at time of submission. Oneline indicates that open position exists.
Real-estate description	Assumes that upgrade occur on transmission-owner owned property.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information

Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	$428,027.00
Component cost (in-service year)	$428,027.00

Congestion Drivers

None

Existing Flowgates

None

New Flowgates

Proprietary & Confidential Information

Financial Information

Capital spend start date	01/2026
Construction start date	04/2029
Project Duration (In Months)	59

Cost Containment Commitment

Cost cap (in current year)	Proprietary & Confidential Information

Cost cap (in-service year)	Proprietary & Confidential Information

Components covered by cost containment

1. E-07-B) Stoney Creek - Slykerville 230kV - Proposer
2. E-25-A) Homer City / Mainesburg 345kV line - Blockhouse Creek Loop-In - Proposer
3. E-27-B) Blockhouse Creek - Susquehanna 500kV - Proposer
4. E-18-B) Montour-Catawissa 230kV - Proposer
5. E-20-A) Catawissa - Stoney Creek 500kV - Proposer
6. E-28-B) Frackville/Columbia - Catawissa 230kV Loop-In - Proposer
7. E-29-A) Tresckow - Slykerville 230kV - Proposer
8. E-17-D) Catawissa 500kV Substation - Proposer
9. E-19-C) Stoney Creek 500kV Substation - Proposer
10. E-26-A) Blockhouse Creek 500kV Substation - Proposer
11. E-36-B) Spicewood 500kV Substation - Proposer

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	No

Additional Information	Proprietary & Confidential Information
Is the proposer offering a binding cap on ROE?	Yes
Would this ROE cap apply to the determination of AFUDC?	No
Would the proposer seek to increase the proposed ROE if FERC finds that a higher ROE would not be unreasonable?	No
Is the proposer offering a Debt to Equity Ratio cap?	Proprietary & Confidential Information
Additional cost containment measures not covered above	Proprietary & Confidential Information

Additional Comments

None