

Siegfried - Drakestown 500 kV line (brownfield NJ segment route)

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	552
Project title	Siegfried - Drakestown 500 kV line (brownfield NJ segment route)
Project description	Following predominantly JCPL ROW, construct a new 500 kV line from outside Martins Creek substation for approximately 20 miles to the new Drakestown 500 kV Switchyard somewhere in the vicinity of 40.789964° -74.757163° depending on what site can be acquired. Utilize triple bundle 1113 ACSS 54/19 conductor with a rating of 3610 MVA SN, 4150 MVA SE, 4276 MVA WN, and 4755 MVA WE. Install dual 144 count OPGW. Acquire land and install a new Drakestown 3 bay breaker and a half (future 5 bay) 500 kV switchyard. Install six 500 kV 4,000 A circuit breakers and twelve 500 kV 4,000 A MODs, leaving future locations for as many as 3 additional circuit breakers and bay positions. All substation conductors and equipment will have a minimum rating of 3609 MVA SN, 4149 MVA SE, 4276 MVA WN, and 4755 MVA WE. For station service, install three PVTs on the North bus, and obtain 3 phase service from local distribution system or install three PVTs on the South bus. Install portable generator hook-up. Coordinate all relaying with Siegfried, Hopatcong, and Branchburg. Terminate fiber into the new Drakestown control house.
Email	Proprietary Information
Project in-service date	05/2030
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. Pennsylvania border - Drakestown 500 kV line (NJ brownfield segment)
2. Hopatcong - Branchburg 500 kV line taps into new Drakestown 500 kV yard
3. Drakestown 500 kV Switchyard

Transmission Line Upgrade Component

Component title	Pennsylvania border - Drakestown 500 kV line (NJ brownfield segment)	
Project description	Proprietary Information	
Impacted transmission line	Flanders - Pequest 115 kV line, Pequest - Gilbert 115 kV line	
Point A	Flanders	
Point B	Pequest	
Point C	Gilbert	
Terrain description	Existing transmission corridor. Rolling hills.	
Existing Line Physical Characteristics		
Operating voltage	115	
Conductor size and type	Unknown	
Hardware plan description	The new 500 kV line is proposed to be constructed adjacent to the existing 115 kV line. No existing line rebuild is proposed.	
Tower line characteristics	The new 500 kV line is proposed to be constructed adjacent to the existing 115 kV line. No existing line rebuild is proposed.	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	500.000000	500.000000

	Normal ratings	Emergency ratings
Summer (MVA)	3610.000000	4150.000000
Winter (MVA)	4276.000000	4755.000000
Conductor size and type	Triple bundle 1113 54/19 ACSS conductor	
Shield wire size and type	dual OPGW	
Rebuild line length	No line rebuild is involved in this project component	
Rebuild portion description	The new 500 kV line is proposed to be constructed adjacent to the existing JCPL 115 kV line. No existing line rebuild is proposed.	
Right of way	Proposing to expand the existing corridor to 150 feet for the entire route.	
Construction responsibility	Proprietary Information	
Benefits/Comments	Proprietary Information	
Component Cost Details - In Current Year \$		
Engineering & design	Proprietary Information	
Permitting / routing / siting	Proprietary Information	
ROW / land acquisition	Proprietary Information	
Materials & equipment	Proprietary Information	
Construction & commissioning	Proprietary Information	
Construction management	Proprietary Information	
Overheads & miscellaneous costs	Proprietary Information	
Contingency	Proprietary Information	
Total component cost	\$116,600,872.67	
Component cost (in-service year)	\$125,703,506.33	

Transmission Line Upgrade Component

Component title	Hopatcong - Branchburg 500 kV line taps into new Drakestown 500 kV yard	
Project description	Proprietary Information	
Impacted transmission line	Hopatcong - Branchburg 500 kV line	
Point A	Hopatcong	
Point B	Branchburg	
Point C		
Terrain description	Farm field. Proposed Drakestown is immediately adjacent to existing line.	
Existing Line Physical Characteristics		
Operating voltage	500	
Conductor size and type	Unknown	
Hardware plan description	Existing PSEG 500 kV line would not be rebuilt in, only bifurcated.	
Tower line characteristics	Existing PSEG 500 kV line would not be rebuilt in, only bifurcated.	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	500.000000	500.000000
	Normal ratings	Emergency ratings
Summer (MVA)	2940.000000	3733.000000
Winter (MVA)	3618.000000	4424.000000
Conductor size and type	Triple bundle 1113 ACSS 54/19 conductor	
Shield wire size and type	Dual 144 count OPGW	

Rebuild line length	Less than 1 mile
Rebuild portion description	Existing PSEG 500 kV line would not be rebuilt in, only bifurcated.
Right of way	Existing ROW would not be altered.
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	\$15,954,432.31
Component cost (in-service year)	\$17,199,940.59
Greenfield Substation Component	
Component title	Drakestown 500 kV Switchyard
Project description	Proprietary Information
Substation name	Drakestown 500 kV Switchyard

Substation description	Acquire land and install a new Drakestown 3 bay breaker and a half (future 5 bay) 500 kV switchyard. Install six 500 kV 4,000 A circuit breakers and twelve 500 kV 4,000 A MODs, leaving future locations for as many as 3 additional circuit breakers and bay positions. All substation conductors and equipment will have a minimum rating of 3609 MVA SN, 4149 MVA SE, 4276 MVA WN, and 4755 MVA WE. For station service, install three PVTs on the North bus, and obtain 3 phase service from local distribution system or install three PVTs on the South bus. Install portable generator hook-up. Coordinate all relaying with Siegfried, Hopatcong, and Branchburg. Terminate fiber into the new Drakestown control house.	
Nominal voltage	AC	
Nominal voltage	500	
Transformer Information		
None		
Major equipment description	Three bays breaker and a half (future 5 bay) Six 500 kV 4,000 A circuit breakers Twelve 500 kV 4,000 A MODs Substation conductors and equipment will have a minimum rating of 3609 MVA SN, 4149 MVA SE, 4276 MVA WN, and 4755 MVA WE.	
	Normal ratings	Emergency ratings
Summer (MVA)	3609.000000	4149.000000
Winter (MVA)	4276.000000	4755.000000

Environmental assessment

The proposed project will traverse both Pennsylvania and northwestern New Jersey, requiring in-depth consultations with both states along with the National Park Service. For Pennsylvania, Developer anticipates needing to apply for an Individual Permit in compliance with the National Pollutant Discharge Elimination System as administered by the Pennsylvania Department of Environmental Protection. Impacts to federal and state protected species typically associated with transmission development are anticipated, including time of year vegetation clearing restrictions for bat species along with potential presence/absence surveys for Bog Turtles in suitable wetland habitat. Cultural resource management activities will likely be comprised of historic architecture surveys to determine visual impacts to historic farmsteads and targeted, systemic shovel testing to determine the presence/absence of buried archaeological deposits in areas where new ground disturbing activities are required. A crossing of the Appalachian Trail is anticipated, which will trigger consultations with the National Park Service. This may include cultural resource surveys of the impacted section of trail, tribal consultations, and viewshed mitigation. New Jersey permits anticipated include an Individual Permit in compliance with the National Pollutant Discharge Elimination System as administered by the New Jersey Department of Environmental Protection. Compliance with New Jersey's Highlands Act will most likely be triggered with the current proposed scope. Impacts to federal and state protected species typically associated with transmission development are anticipated, including time of year vegetation clearing restrictions for bat species along with potential presence/absence surveys for Bog Turtles in suitable wetland habitat. Like Pennsylvania, Cultural resource management activities will likely be comprised of historic architecture surveys to determine visual impacts to historic farmsteads and targeted, systemic shovel testing to determine the presence/absence of buried archaeological deposits in areas where new ground disturbing activities are required. Municipal permits related to the development of a new switchyard will likely be needed based on final site location.

Outreach plan

Developer will provide comprehensive siting and right of way (ROW) support for the following segments:

- S01 – Lackawanna – Siegfried 500kV line – site and construct a new 500 kV line 50 miles to the existing Susquehanna – Wescosville 500 kV line and rebuild ~23 miles of the Susquehanna – Wescosville to a new Siegfried 500 kV yard
- S02 – Siegfried 500 kV switchyard – site and construct a new 500kV switchyard adjacent to the existing Siegfried substation. Split the Susquehanna – Wescosville transmission line and re-terminate in the new yard.
- S03 – Siegfried – Drakestown 500 kV line – Site and construct a new Siegfried – Drakestown 500 kV transmission line - Utilize the existing Martins Creek – Siegfried #2 transmission between Siegfried and Martins Creek and then site new ~20 mile greenfield transmission line to new Drakestown 500 kV yard
- S04 – Drakestown 500 kV Switchyard - site and construct a new 500kV switchyard in Drakestown

Developer Siting will prepare and file a Full Siting Application (FSA) with the Pennsylvania (PUC) and a Siting Application with New Jersey Board of Public Utilities (NJ BPU) to obtain necessary approvals, and our siting efforts. Siting of the transmission lines and switchyard locations will include reviewing environmental, regulatory, and land-use constraints to determine an appropriate alignment and location which minimizes potential impacts. Where possible, Developer will utilize existing electric transmission corridors and other linear opportunities to minimize new social and environmental impacts. Upon completion of the siting activities, the Developer ROW team will acquire all needed ROW in compliance with Developer procedures and industry best practices. Potential siting and ROW risks include inability to acquire all needed ROW, interactions with adjacent landowners, and potential interveners in the Siting approval process. The Developer Siting and ROW team will engage proactively with landowners and serve as project liaisons to address concerns and maintain positive relationships throughout the project. This includes communicating the project need, timeline, activities, construction impacts and site restoration.

Land acquisition plan

Developer will provide comprehensive siting and right of way (ROW) support for the following segments: • S01 – Lackawanna – Siegfried 500kV line – site and construct a new 500 kV line 50 miles to the existing Susquehanna – Wescosville 500 kV line and rebuild ~23 miles of the Susquehanna – Wescosville to a new Siegfried 500 kV yard • S02 – Siegfried 500 kV switchyard – site and construct a new 500kV switchyard adjacent to the existing Siegfried substation. Split the Susquehanna – Wescosville transmission line and re-terminate in the new yard. • S03 – Siegfried – Drakestown 500 kV line – Site and construct a new Siegfried – Drakestown 500 kV transmission line - Utilize the existing Martins Creek – Siegfried #2 transmission between Siegfried and Martins Creek and then site new ~20 mile greenfield transmission line to new Drakestown 500 kV yard • S04 – Drakestown 500 kV Switchyard - site and construct a new 500kV switchyard in Drakestown Developer Siting will prepare and file a Full Siting Application (FSA) with the Pennsylvania (PUC) and a Siting Application with New Jersey Board of Public Utilities (NJ BPU) to obtain necessary approvals, and our siting efforts. Siting of the transmission lines and switchyard locations will include reviewing environmental, regulatory, and land-use constraints to determine an appropriate alignment and location which minimizes potential impacts. Where possible, Developer will utilize existing electric transmission corridors and other linear opportunities to minimize new social and environmental impacts. Upon completion of the siting activities, the Developer ROW team will acquire all needed ROW in compliance with Developer procedures and industry best practices. Potential siting and ROW risks include inability to acquire all needed ROW, interactions with adjacent landowners, and potential interveners in the Siting approval process. The Developer Siting and ROW team will engage proactively with landowners and serve as project liaisons to address concerns and maintain positive relationships throughout the project. This includes communicating the project need, timeline, activities, construction impacts and site restoration.

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	\$61,698,009.25
Component cost (in-service year)	\$73,835,411.74

Congestion Drivers

None

Existing Flowgates

None

New Flowgates

Proprietary Information

Financial Information

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

Cost Containment Commitment

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

Components covered by cost containment

1. Drakestown 500 kV Switchyard - PPL

Cost elements covered by cost containment

Engineering & design	No
Permitting / routing / siting	No
ROW / land acquisition	No
Materials & equipment	No
Construction & commissioning	No
Construction management	No
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 Comments

None