Polecat Greenfield 765/500kV Substation

General Information

Proposing entity name	Company confidential and proprietary information.
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Company confidential and proprietary information.
Company proposal ID	Company confidential and proprietary information.
PJM Proposal ID	831
Project title	Polecat Greenfield 765/500kV Substation
Project description	Polecat Station is a 765/500kV Station that features a 765kV three-position ring bus and a 500kV three-position ring bus. The 765kV ring bus connects Belmont-Mountaineer 765kV, Kammer 765kV, and a new 2620MVA SE transformer. The 500kV ring bus connects the new 2620MVA SE transformer, Belmont 500kV, and Flint Run 500kV transmission lines. 765kV circuit breaker upgrades will be completed at Mountaineer Station to meet the required 5000A rating.
Email	Company confidential and proprietary information.
Project in-service date	06/2028
Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	Company confidential and proprietary information.

Project Components

1. Polecat Greenfield 765/500kV Substation
2. 765kV cut-in lines
3. 500kV cut-in lines

Greenfield Substation Component

Component title	Polecat Greenfield 765/500kV Substation
Project description	Company confidential and proprietary information.
Substation name	Polecat Station
Substation description	Polecat Station is a greenfield 765/500kV substation that includes a 765kV four-position ring bus and a 500kV four-position ring bus. The 765kV ring bus will accommodate two 765kV lines, one 765/500kV autotransformer bank, and space for a future 765kV line or additional 765/500kV autotransformer. The 500kV ring bus will accommodate two 500kV lines and space for one future 500kV circuit breaker. This new station will be situated within an 802ft x 1,202ft fenced area with appropriate physical security measures given the size and scope of the station.
Nominal voltage	AC
Nominal voltage	765/500kV

Transformer Information

	Name	Capacity (MVA)
Transformer	Transformer Bank 1	2920

	High Side	Low Side	Tertiary
Voltage (kV)	765	500	

Major equipment description	One 765/500 kV Autotransformer bank consisting of three 750MVA single-phase units (with space available for a future switchable spare unit); three 5000A, 765kV circuit breakers; three 4000A, 500kV circuit breakers; a 16ft x 60ft modular control enclosure; relaying equipment; AC power system; DC system; ground grid; control, communication, and power cables; conduits; cable trench; steel structures and foundations; buswork; switches; arresters; PT’s; CCVT’s; line traps; and other associated items required to construct the station.

	Normal ratings	Emergency ratings

Summer (MVA)	2280.000000	2647.000000
Winter (MVA)	2620.000000	2920.000000
Environmental assessment	Several potential substation sites were vetted during the siting process with the site selected as the preferred site. The site is predominately forested, with a pocket of open fields, potentially of agricultural use. The substation is situated on three parcels. No residences are located on those parcels or within the substation footprint. The site is partly agricultural use and partly forested. The Proposing Entity will complete the required environmental and cultural resource surveys on the property and no concerns are anticipated. A General West Virginia/National Pollutant Discharge Elimination System (WV/NPDES) Permit is required for the project, and will be administered by Pleasants County, who is delegated program authority by the West Virginia Department of Environmental Protection. The WVPDES permit submission will include a SWPPP, erosion and sediment control plan, stormwater management plan, and pollution prevention plan. The stormwater management plan will include a narrative that describes, among other things, the proposed stormwater management facilities, the limits of clearing and grading, and the proposed drainage patterns on the site, proposed buildings, roads, parking areas, utilities, and the total disturbed acreage for the site. The proposed stormwater management facilities and all associated impacts are typical of energy infrastructure projects and would not represent a risk to the overall project schedule, cost, or ability to meet the identified requirements of the RFP.	
Outreach plan	Public outreach is a critical component to the Proposing Entity’s siting process, so efforts will include properly informing the public; federal, state, and local agencies; local governments; and other key stakeholders on the need for, and benefits of, this Project. The Proposing Entity’s approach to public outreach is to be always candid and transparent, and to offer a variety of tools and means for directly impacted parties to engage with our staff. The Proposing Entity will provide development updates to local government officials, key stakeholders, and impacted parties as the Project progresses. Public outreach also will involve collecting information about landowner properties and communicating with directly affected landowners during the final siting process.	
Land acquisition plan	The proposed Polecat station will be 65 acres in size and purchased in fee. There are not believed to be any environmental issues with this location in Pleasants County, West Virginia. The proposing entity has direct experience with land acquisition and constructing transmission facilities in West Virgina.	
Construction responsibility	Company confidential and proprietary information.	
Benefits/Comments	Company confidential and proprietary information.	
Component Cost Details - In Current Year $		
Engineering & design	Company confidential and proprietary information.	
Permitting / routing / siting	Company confidential and proprietary information.	

ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$101,987,734.00
Component cost (in-service year)	$118,231,736.00

Greenfield Transmission Line Component

Component title	765kV cut-in lines
Project description	Company confidential and proprietary information.
Point A	Mountaineer
Point B	Belmont
Point C	Polecat

	Normal ratings	**Emergency ratings**
Summer (MVA)	4047.000000	4484.000000
Winter (MVA)	5872.000000	5872.000000

Conductor size and type	The new cut-in lines will be constructed using a four-conductor bundle of 954kcmil 45/7 “Rail" ACSR to meet/exceed SN/SE WN/WE ratings stated above.
Nominal voltage	AC
Nominal voltage	765kV
Line construction type	Overhead

General route description	The 765kV cut-ins into Polecat Station will be approximately 0.61 miles to tie into the existing Mountaineer–Kammer 765kV line (0.30 miles west and 0.31 miles east).
Terrain description	The topography for the 765kV cut-ins is forested rolling hills. Land use in the area encompasses mostly agricultural parcels in Pleasants County, West Virginia.
Right-of-way width by segment	The 765kV greenfield cut-in ROWs will be 200-feet each in width.
Electrical transmission infrastructure crossings	Lat: 39°21'07.38" N/Lon: 81°15' 27.44" W
Civil infrastructure/major waterway facility crossing plan	The cut-ins will not impact civil infrastructure/major waterways.
Environmental impacts	The cut-ins lines have undergone a robust siting analysis, as well as the required environmental and cultural resource surveys.
Tower characteristics	The condition of the existing line is assumed to be in good working order based on the age determination from aerial imagery. Structure loading at adjacent structures would remain unchanged due to proposing structure locations on centerline and near existing tower locations. It is assumed that a total of four lattice tower deadend structures supported by earth grillage foundations will be utilized to turn the existing Amos-Kammer 765kV line in/out of the proposed Polecat Station.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.

Total component cost	$11,500,000.00
Component cost (in-service year)	$13,331,652.00

Greenfield Transmission Line Component

Component title	500kV cut-in lines
Project description	Company confidential and proprietary information.
Point A	Belmont
Point B	Polecat
Point C	Flint Run

	Normal ratings	Emergency ratings
Summer (MVA)	3526.000000	3792.000000
Winter (MVA)	3928.000000	4140.000000

Conductor size and type	The 500kV cut-ins will be constructed using a bundled conductor to meet/exceed SN/SE WN/WE ratings stated above.
Nominal voltage	AC
Nominal voltage	500kV
Line construction type	Overhead
General route description	The 500kV cut-ins will be approximately 0.99 miles leaving the proposed Polecat Station to the existing Belmont–Harrison 500kV line (0.45 miles west and 0.54 miles east).
Terrain description	The topography for the 500kV tie-ins is rolling hills and forested. Land use in the area encompasses mostly residential parcels in Pleasants County, West Virginia.
Right-of-way width by segment	The 500kV greenfield cut-in ROWs will be 175-feet each in width.
Electrical transmission infrastructure crossings	N/A
Civil infrastructure/major waterway facility crossing plan	The cut-ins will not impact civil infrastructure/major waterways.

Environmental impacts	The cut-in lines have undergone a robust siting analysis, as well as the required environmental and cultural resource surveys.
Tower characteristics	The condition of the existing line is assumed to be in good working order based on the age determination from aerial imagery. Structure loading at adjacent structures would remain unchanged due to proposing structure locations on centerline and near existing tower locations. It is assumed that a total of four three-pole deadend structures supported by concrete pier foundations will be utilized to turn the existing Belmont-Harrison 500kV lines in/out of the proposed Polecat Station.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$7,200,000.00
Component cost (in-service year)	$8,346,773.00

Substation Upgrade Component

Component title	Mountaineer Station Upgrade
Project description	Company confidential and proprietary information.
Substation name	Mountaineer Station

Substation zone	AEP
Substation upgrade scope	Replace existing 765kV, 4000A circuit breakers B1 and B2 at Mountaineer Station with 765kV, 5000A circuit breakers to ensure all equipment in the solution meets the minimum ampacity ratings.

Transformer Information

None

New equipment description	Two 765kV, 5000A circuit breakers
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment. The existing station control enclosure is assumed to be sufficient to accommodate the new transmission line and circuit breaker protection and control relay panels.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$5,000,000.00
Component cost (in-service year)	$5,796,370.00

Congestion Drivers

None

Existing Flowgates

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2023W1-GD-S89	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included
2023W1-GD-S500	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included
2023W1-GD-S499	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included
2023W1-GD-S501	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included
2023W1-GD-S80	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included
2023W1-GD-S87	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included

New Flowgates

Company confidential and proprietary information.

Financial Information

Capital spend start date	01/2024
Construction start date	09/2026
Project Duration (In Months)	53

Cost Containment Commitment

Cost cap (in current year)	Company confidential and proprietary information.
Cost cap (in-service year)	Company confidential and proprietary information.

Components covered by cost containment

1. Polecat Greenfield 765/500kV Substation - Transource

Cost elements covered by cost containment

Engineering & design	Yes
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	Company confidential and proprietary information.
Is the proposer offering a binding cap on ROE?	Yes
Would this ROE cap apply to the determination of AFUDC?	Yes
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?	Company confidential and proprietary information.

Additional Comments

None