

# Cork Greenfield 765kV 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	851
Project title	Cork Greenfield 765kV Substation
Project description	Cork 765kV greenfield substation facilitates the upgrade of FirstEnergy's Belmont 765/500kV transformer while resolving Mountaineer equipment overduty, and concerns deriving from the existing three terminal line of Mountaineer – Belmont – Kammer 765kV.
Email	Company confidential and proprietary information.
Project in-service date	12/2027
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. Cork 765kV Greenfield Substation
2. 765kV cut-in lines for Cork Station
3. Mountaineer Station Upgrade

## Greenfield Substation Component

Component title	Cork 765kV Greenfield Substation
Project description	Company confidential and proprietary information.
Substation name	Cork Station
Substation description	Cork Station is a 765kV four-position ring bus that includes three 765kV lines for the initial build with space to accommodate one future 765kV line. This greenfield station will be situated within an 802ft x 565ft fenced area with appropriate physical security measures for the size and scope of the station.
Nominal voltage	AC
Nominal voltage	765kV

**Transformer Information**

None

Major equipment description Three 765kV circuit breakers (with space for one future 765kV circuit breaker); a 16ft x 48ft 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; CCVTs; line traps; enclosures; and other loose items required to construct the station. All through path equipment will be rated for 4000A minimum.

	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	5523.000000	5523.000000
Winter (MVA)	6845.000000	6845.000000

Environmental assessment	<p>Several potential substation sites were vetted during the siting process with the site selected as the preferred site. Land use at the proposed parcels for Cork Station is partly agricultural use to the south and east and partly forested to the north and west. The western parcel includes one residence. The other parcel includes a pole barn. The station footprint is situated in the northern and northwestern portions of the parcels. 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.</p>
Outreach plan	<p>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.</p>
Land acquisition plan	<p>The proposed Cork station will be 35-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 Virginia.</p>
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.
<b>Component Cost Details - In Current Year \$</b>	
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	\$41,070,721.00
Component cost (in-service year)	\$46,225,458.00

### Greenfield Transmission Line Component

Component title	765kV cut-in lines for Cork Station
Project description	Company confidential and proprietary information.
Point A	Mountaineer
Point B	Cork
Point C	Kammer

	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	5523.000000	5523.000000
Winter (MVA)	6845.000000	6845.000000
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 for Cork Station will require approximately 0.63 miles of new transmission line. 0.2 miles of 765kV cut-ins will be required for the proposed Cork Station to the existing Belmont Loop 765kV line, and 0.43 miles will be required to cut-in to the existing Amos–Kammer 765kV line.
Terrain description	The topography for the 765kV cut-ins is rolling hills and forested. Land use in the area encompasses mostly agricultural parcels in Pleasants County, West Virginia. The line crosses agricultural areas and county highways.
Right-of-way width by segment	The 765kV greenfield cut-in ROWs will be 200ft 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 765kV structures is assumed to be in good working condition 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 five lattice tower deadend structures supported by earth grillage foundations will be utilized to turn the existing Belmont Loop and Amos-Kammer 765kV lines in/out of the proposed Cork Station.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.
<b>Component Cost Details - In Current Year \$</b>	
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	\$11,750,000.00
Component cost (in-service year)	\$13,224,729.00

### **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	Install three 765kV, 4000A wavetraps and new relaying on the Mountaineer-Cork 765kV line. All other equipment at Mountaineer Station is equipped to handle 4000A minimum requirement.

### **Transformer Information**

None	
New equipment description	Three 765kV, 4000A wavetraps and new relay panels in the station control enclosure.
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	\$539,000.00
Component cost (in-service year)	\$606,649.00

## 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 09/2025

Project Duration (In Months) 47

## 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. Cork 765kV Greenfield 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