

New transmission line proposals made by FirstEnergy to PJM Interconnection in 2022 Window 3. Window 3 is intended to provide power to Data Center Alley in Northern Virginia. All data is from PJM's website as of August 14, 2023.

Ft. Martin - Doubs Greenfield Transmission Line

Construct ~158 miles of new 500 kV line from Fort Martin Substation to Doubs Substation. The construction of this new line will require the acquisition of 158 miles of new right-of-way, forestry clearing, permitting, and access road construction.

Line construction type: Overhead

General route description- This new 500 kV line will be constructed in West Virginia, Virginia, and Maryland. Full Applications will be required in each state. - It is assumed that the new 500 kV line will parallel existing ROW for approximately (85.6) miles and require (74.4) miles of new ROW not adjacent to existing ROW. It is assumed that no existing lines will be overbuilt with double circuit structures, but existing line rebuilds will be considered where applicable. - Approximately (695) parcels will be affected by the line route. Assumed 5% condemnation (35 parcels).

Terrain description- The terrain for this line is hilly/mountainous with state lands, national parks, and rivers along the proposed route of this new line. Traditional access and construction may be affected. Alternative access and construction methods will be considered.

Right-of-way width by segment- The right-of-way width is assumed to be 200 ft. This width is based on the widest ROW needed for 500 kV and does not account for structure configuration or span lengths. Widths needed may vary upon final design.

Environmental Impacts: Crosses DNR owned land in WV/MD/VA. Licensing and permitting of new ROW with either state's DNR could take 24 months and may need to be approved by the state's legislature. - Crosses the Youghiogheny River, a state designated scenic river. Permitting of new ROW over a scenic river is estimated to be 12-18 months. - Crossing of large wetland complexes in WV and MD could result in lengthier permitting 12-18 months and increased mitigation cost. - Crosses C&O Canal National Park. Licensing and permitting of new ROW with National Park Service could take 24 months to complete.

Tower characteristics- The new Fort Martin-Doubs #1 500 kV Line will be constructed on double circuit 500 kV tubular steel monopole and two-Pole structures. The second 500 kV circuit is to be left vacant and installed at a future date. - The average span length is 1200 ft. - It is assumed that the new double circuit monopole structures will have an average height of 180 ft. Final structure heights will need to be determined during project development. FAA filing and application may be required. - The new structures will utilize custom 500 kV V-string and double I-string suspension and dead-end insulator assemblies.

Benefits/Comments- This new 500 kV line provides a direct connection from the west side of the system to the east side. - This new line provides the ability to install a second Fort Martin - Doubs 500 kV Line on the same structures, without additional right-of-way acquisition. - This new line route will provide the opportunity to loop the Fort Martin - Doubs 500 kV Line into Bedington and/or Black Oak substations in the future, if necessary for reliability or resiliency. - Greenfield construction is assumed due to outage constraints, but existing rights-of-way and corridors to rebuild lower voltage lines will be considered where applicable.

Component cost (in-service year) \$1,636,301,539.

Connects with FirstEnergy's Ft. Martin Power Station. Proximate to Longview Power Station. Both coal fueled.

WV Counties: Monongalia, Preston, Mineral, Hampshire, Morgan, Berkeley, Jefferson

MD Counties: Garrett, Allegheny, Washington, Frederick

VA Counties: Frederick

Pruntytown – Meadow Brook – Doubs Greenfield Transmission Line

Construct approximately (50.8) miles of new 500 kV line from Pruntytown Substation to Structure #5 on the Meadow Brook - Mount Storm #529 500 kV Line (located adjacent to Mt Storm Substation). Cut the existing Meadow Brook - Mount Storm #529 500 kV Line from the Mt. Storm line terminal and connect the new 500 kV line from Pruntytown Substation. This will eliminate the Meadow Brook- Mt Storm 500 kV Line and create the new Meadow Brook - Pruntytown 500 kV Line. The construction of this new line will require the acquisition of 50.8 miles of new right-of-way, forestry clearing, permitting, and access road construction.

Construct 55.3 miles of new 500 kV line from Meadow Brook Substation to Doubs Substation. The construction of this new line will require the acquisition of 55.3 miles of new right-of-way, forestry clearing, permitting, and access road construction. Total line miles: Approximately 106.

Line construction type: Overhead.

General route description- This new Pruntytown – Meadow Brook 500 kV line will be constructed in Maryland and West Virginia. Full Applications will be required in each state. - It is assumed that the new line will parallel existing ROW for approximately (14.5) miles and require (36.3) miles of new ROW not adjacent to existing ROW. It is assumed that no existing lines will be overbuilt with double circuit structures, but existing line rebuilds will be considered where applicable. - Approximately (170) parcels will be affected by the line route. Assumed 3% condemnation (5 parcels).

This new Meadow Brook - Doubs 500 kV line will be constructed in Virginia, West Virginia, and Maryland. Full Applications will be required in each state. - It is assumed that the new line will parallel existing ROW for approximately (22.8) miles and require (32.5) miles of new ROW not adjacent to existing ROW. It is assumed that no existing lines will be overbuilt with double circuit structures, but existing line rebuilds will be considered where applicable. - Approximately (146) parcels will be affected by the line route. Assumed 5% condemnation (7 parcels)

Terrain description- The terrain for this line is flat/hilly/mountainous/semi-mountainous with state lands, national parks, and rivers along the proposed route of this new line. Traditional access and construction may be affected. Alternative access and construction may need to be considered.

Right-of-way width by segment- The right-of-way width is assumed to be 200 ft. This width is based on the widest ROW needed for 500 kV and does not account for structure configuration or span lengths. Widths needed can vary upon final design.

Environmental impacts- The new Meadow Brook-Pruntytown 500 kV Line will cross (3) rivers or other bodies of water. Crossing permits and FAA coordination may be required. - The new Meadow Brook-Pruntytown 500kV Line crosses through (6) wetlands and (2) parks: the Monongahela National Forest and State Park Land. The Meadow Brook-Doubs line crosses DNR state owned land in WV/VA. Licensing and permitting of new ROW on state DNR land could take 24 months and may need to be approved by the state's legislature. - Crosses the Shenandoah and Potomac rivers in sections designated as state scenic rivers. Permitting of new ROW over a scenic river is estimated to be 12-18 months. Crosses the Appalachian Trail National Park and the C&O Canal National Park. Licensing and permitting of new ROW with National Park Service could take 24 months to complete.

Tower characteristics- This new line will be constructed on single circuit 500 kV tubular steel monopole structures with an average span length of 1200 ft. - The new structures will utilize custom 500 kV V-string and double I-string suspension and dead-end insulator assemblies. - New single circuit structures will have an average height of 150 ft.

Benefits/Comments: This new transmission line will provide an additional electrical path for power to flow from Pruntytown Substation into Doubs Substation, Meadow Brook Substation, and to the Dominion Zone. This project will also provide future expansion capability with a potential to re-network the 500kV lines emanating from Mt. Storm Substation for increased reliability benefit. Greenfield construction is assumed due to outage constraints, but existing rights-of-way and corridors to rebuild lower voltage lines will be considered where applicable.

This new 500 kV Line will provide an additional and much shorter electrical path between Meadow Brook and Doubs linking the Black Oak-Bedington corridor with the 'AP South' corridor.

Component cost (in-service year) \$473,990,145.00 (Pruntytown – Meadow Brook)

Component cost (in-service year) \$519,274,823.00 (Meadow Brook – Doubs)

Total Component cost (in-service year) both segments: \$993,264,968

Connects with FirstEnergy's Harrison Power Station. Proximate to Grant Town, Mt. Storm power stations. All are coal fueled.

WV Counties: Taylor, Preston, Barbour, Tucker, Grant, Hardy, Hampshire, Jefferson.

VA Counties: Clark, Frederick, Loudoun

MD Counties: Frederick

Total cost of both projects in-service: \$2,629,566,507.

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