

Enhancing Grid Reliability with Steel Core Conductors

Dominion Energy provides electric service across Virginia, North Carolina, and West Virginia, including the high-demand northern Virginia region—home to one of the largest concentrations of data centers in the world. In this area alone, power demand is projected to increase by more than 200% over the next four years, presenting significant infrastructure and scalability challenges for the utility.



Dominion Energy has adopted ACSS for high-capacity transmission lines and has standardized the use of ACSS/TW for both new builds and reconductoring of 230-kV circuits. The utility has formally integrated the advantages of ACSS—particularly its performance under high-temperature, high-load conditions—into its transmission planning strategy. For 500-kV lines, Dominion employs triple-bundle ACSR (three conductors per phase), a choice likely driven by the fact that these higher-voltage systems are typically limited by voltage and stability constraints rather than thermal capacity.



Project

Along an eight-mile stretch in northwest Loudoun County, Virginia—including five miles near the W&OD Trail—Dominion Energy upgraded transmission infrastructure by replacing aging lattice towers with taller steel monopoles and new ACSS conductor wire.

Bekaert's Solution

Bekaert's ACSS/TW conductor would support projects like Dominion Energy's Loudoun County upgrade by delivering higher capacity, reduced losses, and better sag performance without requiring significant changes to existing structures. Its corrosion-resistant steel core and high-temperature rating align with utility goals of modernizing infrastructure, enhancing reliability, and meeting future demand growth.

[Read our WhitePaper](#)

Exemplary Projects

Year	Project Name	Project Type	Conductor Used	Voltage Level	Line Length	Project Purpose
2022	Beaumeade Belmont	Reconductor	ACSS/TW	230 kV	6.7	Capacity

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† Idaho National Laboratory. (December 2023).

"Advanced Conductor Scan Report (Report No. INL/RPT-23-75873 R10)." Department of Energy. 23-50856_R10_-AdvConductorsScan ProjectReport-1.pdf (inl.gov)

