

Commonwealth Energy Express: High Voltage Direct Current (HVDC)



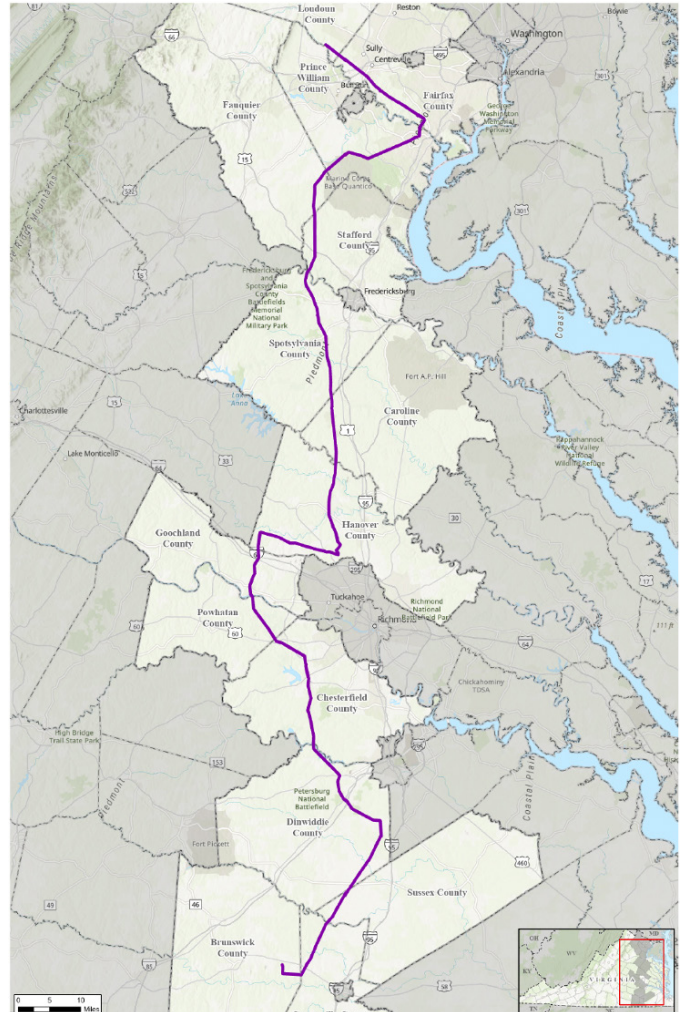
OVERVIEW

Dominion Energy is committed to providing reliable, affordable, and increasingly clean energy that powers our customers every day. Through planning, operational excellence, and investment in proven technologies, customer expectations will be met even though it is the most challenging time in the energy sector since World War II. HVDC is new to Dominion Energy's service territory and PJM's footprint, but HVDC has been used elsewhere in the United States and around the world. It is not a one-size fits all solution but can be a practical and efficient technology under the right circumstances.

WHY DOES UNDERGROUND HVDC WORK HERE?

Typically, there are higher investment costs for HVDC and the needed converter stations to integrate with the AC power grid. However, Dominion Energy is mitigating costs by co-locating this project within existing transmission right of way (ROW) corridors. HVDC is supported in this scenario because:

- HVDC requires fewer cables per phase than typical HVAC.
- HVDC requires significantly less ROW than typical HVAC.
- Dominion Energy already possesses 50 percent of underground easement rights in these corridors.
- Dominion Energy has land needed for converter stations.



Underground HVDC transmission line route from Heritage Substation in Brunswick County to Mosby Substation in Loudoun County.

TIMELINE

The Commonwealth Energy Express HVDC project is expected to be filed in summer 2027 and completed in 2032. To meet the energization date, Dominion Energy will conduct the following:

- 2026 - 2027 Planning and outreach
- 2027 - 2028 Regulatory review and detailed design
- 2028 - 2029 Site preparation and Construction
- 2029 - 2032 Construction and Energization

*Timing is preliminary and may change as engineering, permits and construction planning continue.

DID YOU KNOW?

Both Alternating Current (AC) and Direct Current (DC) have been around since the late 1880's, which was the dawn of electrification. The pioneers of electricity, Thomas Edison and Nikola Tesla, were racing to develop safe and dispatchable methods of delivering electricity. Because AC could more easily be converted to lower voltages suitable for homes and businesses, it became the standard operating system for our electric grid – and still is.