



Supporting Wind and Renewable Energy: *Critical to Energy Independence*

Extra-high voltage transmission is a class of transmission that provides unique benefits to the transmission system. When overlaid on top of an existing lower voltage transmission system, it serves to enhance the efficiency, operation and flexibility of the entire system. One of the biggest long-term barriers to the widespread use of wind energy to supplement our country's growing demand for electricity is the physical limitations of the nation's current electric transmission system. The nation's bulk transmission system is currently inadequate to deliver energy from remote wind resource areas to electrical load centers.

Electric Transmission America, LLC (ETA) believes that this barrier can be overcome by building efficient extra high-voltage (EHV) transmission infrastructure that will enable wind power to become a larger part of the nation's power generation resource mix. This transmission system expansion will bring many additional benefits, including increased reliability and greater access to environmentally friendly sources of electricity.

ETA partner, American Electric Power (AEP), has long been a pioneer in the development and advancement of extra high voltage technology and in 1969 introduced 765-kilovolt (kV) transmission, the highest voltage used in the United States today. AEP owns more 765-kV extra-high voltage transmission lines than all other U.S. transmission systems combined. Based on AEP's experience, ETA believes that:

- 765-kV technology provides an excellent platform for expanding the nation's transmission infrastructure.
- EHV transmission expansion is key for the growth of large-scale renewable generation, which is critical for increasing our nation's domestically fueled electricity supply and for reducing our country's carbon emissions.
- The use of 765-kV AC technology will enable the development of a new high-capacity bulk transmission grid overlaying the existing lower voltage system, with both systems easily integrated where so required.

[Expanding Access to Renewable Resources](#)

The most viable renewable generation resources are not located close to population centers, so additional transmission is essential to move renewable power from where it can be created to where it can be consumed.

Inadequate transmission prevents fuel diversity for electricity generation. Fuel preferences vary regionally, based largely on what energy sources were locally abundant when regions were electrified. Without transmission to deliver electricity generated by diverse fuels, local areas remain at the mercy of fluctuating fuel prices. Additional EHV transmission will support additional long-range electricity transportation and reduce dependence on imported fuels, enhancing domestic energy security.

ETA believes that an expanded EHV transmission system provides the most efficient method of interconnecting remotely located wind, and other renewable generation resources with a system that is capable of delivering such resources to the areas that need them. Today's underdeveloped and heavily loaded transmission system is inadequate for this purpose, especially on the scale that is required to meet new renewable energy goals.

[Taking the Lead](#)

ETA already is working to unlock the potential of renewable energy through its Prairie Wind Transmission, LLC and Tallgrass Transmission, LLC projects in Kansas and Oklahoma, respectively.

- Prairie Wind Transmission, LLC is a joint venture of ETA and Westar Energy, Inc., that plans to build approximately 230 miles of extra-high voltage 765-kilovolt (kV) transmission facilities extending from Wichita, Kan., west to a substation northeast of Dodge City, Kan., and then south to the Kansas border from Medicine Lodge, Kan. The project will provide enhanced electricity transportation in Kansas and support expansion of renewable electricity generation in the region.
- Tallgrass Transmission, LLC is a joint venture of ETA and OGE Energy Corp., that plans to build approximately 170 miles of extra-high voltage 765-kilovolt transmission from the Kansas-Oklahoma border north of Woodward, Okla., that will link into OGE's station at Woodward and then extend west into the Oklahoma panhandle to a new station that will be built near Guymon, Okla.