

Horizon Wind Energy
Houston, Texas**Sargent & Lundy Services:**

- ❑ Transmission Line Engineering & Design
- ❑ Substation Engineering & Design
- ❑ Material and Equipment Procurement Support
- ❑ Construction Field Services

Sargent & Lundy performed the engineering to interconnect the Horizon Wind Energy Pioneer Prairie Wind Farm to the transmission grid in northeastern Iowa. Work began in mid-2007 to design the Phase I 345/34.5 kV project substation. Engineering for the Phase II substation and 345 kV transmission line began in the second quarter of 2008. The Pioneer Prairie Wind Farm has a rated output of 200 MW for Phase I and 100 MW for Phase II.



The Pioneer Prairie Wind Farm is connected to a new ITC Midwest 345 kV switchyard that serves as the interconnection to the existing Adams-Hazelton 345 kV Transmission Line. Phase II of the project is connected to the same ITC switchyard via a new 2.5-mile long 345-kV single-circuit transmission line.

S&L's scope of work included engineering and design of:

- The 34.5/345 kV Pioneer Prairie I and Pioneer Prairie II Substations at the termination of the wind generator collection systems for each phase of the project.
- 2.5 miles of 345-kV transmission line.

The substation scope of work included electrical and structural engineering, grading design, support for procurement of material and equipment and commissioning services. The transmission line scope of work included transmission line structure spotting, transmission line design and support for procurement of major materials.

S&L and the Horizon Wind Energy team worked closely with ITC Midwest (formerly Alliant Energy) staff to facilitate the design of the terminations in the new switchyard, as well as to coordinate the interface of the protection and control systems.

Construction of Pioneer Prairie Phase I began in April 2008 and went into service in late September 2008. Phase II started construction in July 2008 and was completed in December 2008.

**PIONEER PRAIRIE
WIND FARM**

Based in Houston, TX, Horizon Wind Energy LLC develops, constructs, owns and operates wind farms throughout North America. Horizon is owned by EDP Renováveis, S.A. ("EDPR"), a global leader in the renewable energy sector.