



BASIN ELECTRIC POWER COOPERATIVE

A Touchstone Energy® Cooperative 

Serving the Bakken



The oil play in the Bakken formation covers parts of western North Dakota and eastern Montana. Crude oil production in North Dakota grew from a daily average of 115,000 barrels in early 2007 to more than a million barrels a day. This represented about 12 percent of the nation's crude oil production. In March 2012, North Dakota surpassed Alaska as the second-largest oil-producing state, trailing only Texas.

Although drilling and production activity has decreased since 2015 due to a drop in the price of crude oil, electrical loads continue to grow. Current forecasts predict more than 350 megawatts (MW) of generation capacity will be needed by 2035 to serve the growing electrical needs in the Bakken. In response to the continuing growth, Basin Electric has constructed two natural gas-fired peaking generation stations in the region, the Lonesome Creek Station, west of Watford City, North Dakota, and the Pioneer Generation Station, northwest of Williston, North Dakota and multiple transmission projects.

Basin Electric continues to actively monitor the growth and planning for transmission and generation needs associated with rapidly increasing loads.

Transmission

Basin Electric, its member cooperatives, Western Area Power Administration, and the Southwest Power Pool (SPP) have developed a phased approach with transmission infrastructure.

Western Area Power Administration and Basin Electric are the two largest transmission owners in the Upper Missouri Zone, a multi-owner, joint-pricing zone within the SPP transmission system. Together, they have spent hundreds of millions of dollars in new construction and upgrades to provide the transmission system necessary to deliver electricity reliably in the region.

They include:

- Basin Electric's 74-mile Rhame-to-Belfield 230-kilovolt (kV) transmission line and the associated Rhame Substation placed in service in 2010.
- Basin Electric's 61-mile Williston to Tioga 230-kV line and the associated Neset Substation placed in service in 2011.



Lonesome Creek Station Unit 1, Watford City, ND

- Western Area Power Administration’s upgrade of its 75-mile-long Williston to Charlie Creek 115-kV line, placed in service in 2012.
- Basin Electric’s 200-mile-long Antelope Valley to Judson 345-kV transmission line, placed in service in 2015.
- Basin Electric’s 30-mile-long Patent Gate to Kummer Ridge 345-kV line, placed in service in 2016.
- Basin Electric’s 61-mile-long Judson to Tande 345-kV line, placed in service in 2017.
- Deer Creek Station, Elkton, South Dakota
 - 300-MW natural gas-fired combined cycle intermediate plant (2012)
- Groton Generation Station, Groton, South Dakota
 - 196-MW natural gas-fired simple cycle peaking plant

Generation

To meet the need for additional generation, Basin Electric has constructed additional power plants outside North Dakota to free up generation capacity within the state.

They include:

- Culbertson Generation Station, Culbertson, Montana
 - 95-MW natural gas-fired peaking plant (2011)
- Dry Fork Station, Gillette, Wyoming
 - 376-MW coal-based plant (2011)

Peaking Generation in North Dakota

- Pioneer Generation Station, Williston, North Dakota
 - Three 45-MW natural gas-fired simple cycle units
 - Twelve 9.3-MW natural gas-based reciprocating engines (112 MW)
- Lonesome Creek Station, Watford City, North Dakota
 - Five 45-MW natural gas-fired simple cycle units

Both Lonesome Creek and Pioneer generation stations serve as peaking power plants and support the stability of the transmission grid.