

# WIND ENERGY IN NORTH DAKOTA



## North Dakota is a national leader in wind resources.

Wind energy provided nearly 27 percent of the electricity generated in North Dakota in 2019, the fourth highest in the nation. North Dakota ranks 9th in the nation for installed capacity with over 3,600 MW of wind power. Developing the state's incredible wind resource has led to jobs in the construction, operations and manufacturing sectors, with at least four active manufacturing facilities in North Dakota producing components for the wind industry. Wind projects in the state provide additional economic benefits, including \$22 million in annual lease payments to landowners who host wind turbines.

## BENEFITS

### Jobs & Economic Benefits

The U.S. wind industry is a major economic development driver. In addition to job creation and billions of dollars in project investment, the wind industry invests heavily in local communities, providing significant revenue in the form of property, state, and local taxes.

- Direct wind industry jobs in 2019: **4,001 to 5,000**
- Capital investment in wind projects through 2019\*: **\$6.9 billion**
- Annual state and local tax payments by wind projects\*\*: **\$12 million**
- Annual land lease payments: **\$22 million**

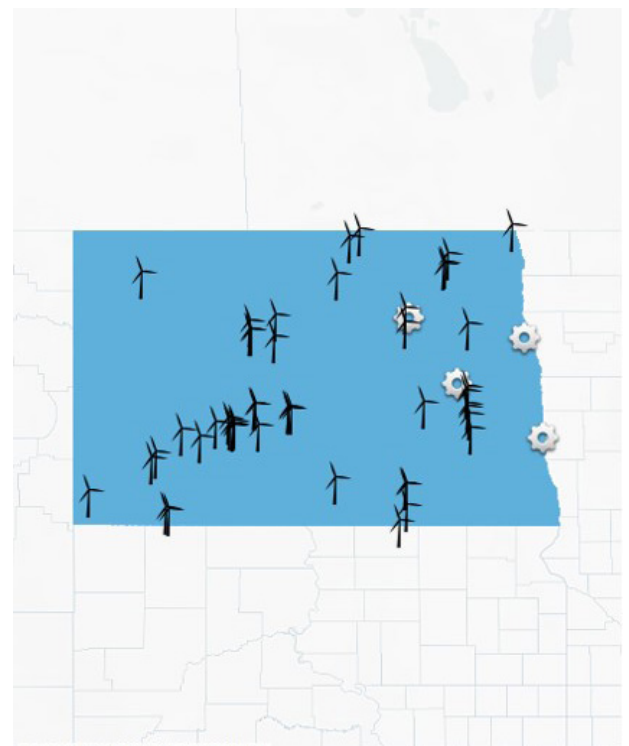
\*Based on state and national averages from LBNL, NREL.


\*\*Based on member data. Includes PILOT payments.


### Wind-Related Manufacturing

Over 500 manufacturing facilities in the U.S. make products for the wind industry, from blades, towers, and turbine nacelles to raw components such as fiberglass and steel.

- Number of active manufacturing facilities in the state: **4**



 Online Wind Project

 Wind-related Manufacturing Facility

## Wind Projects as of Q3 2020

- Installed wind capacity: **3,640 MW**
  - » State rank for installed wind capacity: **9th**
- Number of wind turbines: **1,875**
  - » State rank for number of wind turbines: **10th**
- Wind projects online: **32** (Projects larger than 10 MW: 25)
- Wind capacity under construction: **649 MW**
- Wind capacity in advanced development: **0 MW**

## Wind Generation

In 2019, wind energy provided **26.80%** of all in-state electricity production.

- State rank for share of electricity: **4th**
- Equivalent number of homes powered by wind in 2019: **986,600**

## Wind Energy Potential

- Land-based technical wind potential at 80 m hub height: **296,084 MW**  
(Source: AWS Truepower, NREL)

## Environmental Benefits

Wind energy reduces emissions and water consumption by avoiding generation from fossil-fuel power plants.

- In-state carbon dioxide emissions avoided in 2019\*: **2.5 million metric tons**
  - » Equivalent cars' worth of emissions avoided: **530,000**
- In-state water consumption savings in 2019\*\*: **1.4 billion gallons**

\*Estimated using Aurora power sector model.

\*\*Based on national average water consumption factors for coal and gas plants.

## Renewable Portfolio Goal

In 2007, North Dakota set a non-binding, voluntary target that by 2015, 10% of all retail electricity sold in the state would be obtained from renewable sources.

