

# NORTH DAKOTA WIND ENERGY



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

Wind energy provided more than 21 percent of the electricity generated in the state in 2016, the fifth highest in the nation. North Dakota has rapidly grown its wind capacity for several years, but is still only using a fraction of its wind resource potential. 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.



 Online Wind Project     Manufacturing Facility

Note: Calculations based on national and state averages.

## BENEFITS Jobs & Economic

An investment in wind power is an investment in jobs, including jobs in operations and maintenance, construction, manufacturing and many support sectors. In addition, wind projects produce lease payments for landowners and increase the tax base of communities.

- 2016 direct and indirect jobs supported: 4,001 to 5,000
- Total capital investment through 2016: \$5.4 billion
- Annual land lease payments: \$5-10 million

## Wind-Related Manufacturing

The United States has over 500 manufacturing facilities producing products for the wind industry that range from blade, tower and turbine nacelle assembly facilities to raw component suppliers, including fiberglass and steel.

- Number of active manufacturing facilities in the state: 4

## Wind Projects

- **Installed wind capacity:** 2,746 MW
- **State rank for installed wind capacity:** 11th
- **Number of wind turbines:** 1,488
- **State rank for number of wind turbines:** 11th
- **Wind projects online:** 27 (Projects above 10 MW: 19)
- **Wind capacity under construction:** 249 MW
- **Wind capacity in advanced development:** 515 MW

## Current Wind Generation

During 2016, wind energy provided 21.50% of all in-state electricity production.

- **Equivalent number of homes powered by wind:** 747,000

## Wind Generation Potential

The DOE Wind Vision Scenario projects that North Dakota could produce enough wind energy by 2030 to power the equivalent of 1.6 million average American homes.

- **Land based technical wind potential at 80 m hub height:** 742,276 MW
- **Land based technical wind potential at 110 m hub height:** 394,519 MW (Source: NREL)

## Environmental Benefits

Generating wind power creates no emissions and uses virtually no water.

- **2016 annual state water consumption savings\*:** 1.7 billion gallons
- **2016 equivalent number of water bottles saved:** 12.6 billion
- **2016 annual state carbon dioxide (CO<sub>2</sub>) emissions avoided:** 2.9 million metric tons
- **2016 equivalent cars worth of emissions avoided:** 626,000

\*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.