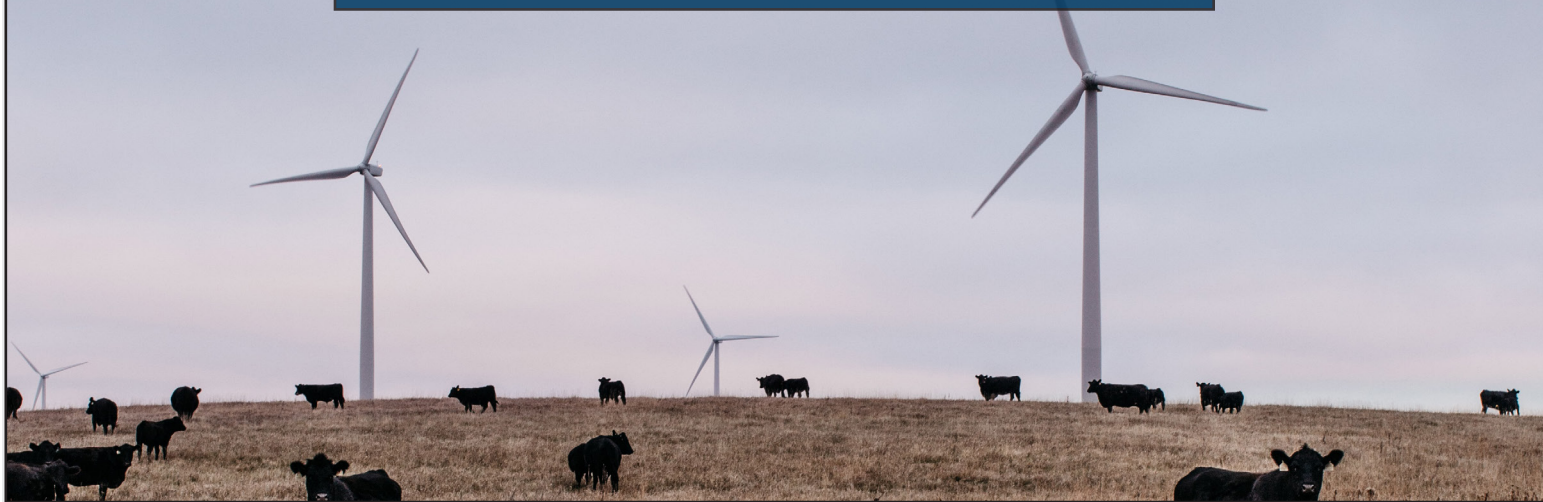


# WIND ENERGY IN SOUTH DAKOTA



## Wind energy means economic development for South Dakota.

In 2017, South Dakota generated over 30% of its electricity from wind power, the fourth highest in the nation. South Dakota is one of the top states in the country for potential wind energy generation, with a technical potential of approximately 418,000 megawatts (MW) according to NREL. South Dakota now has 1,019 MW of installed wind power and is the newest member of the Gigawatt Club. Continued growth is slated as the state has enough capacity under construction and in advanced development to double its installed capacity. Further wind installations will provide considerable economic benefits and allow smaller manufacturers to enter the wind supply chain, joining major industry players such as Marmen Energy, who operate a tower fabrication facility in Brandon.

## BENEFITS Jobs & Economic Benefits

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.

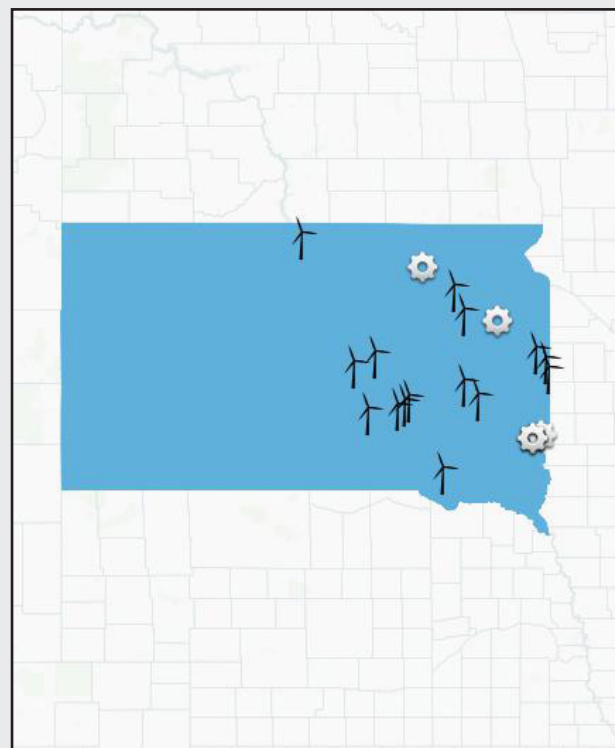
- 2017 direct and indirect jobs supported: **1,001 to 2,000**
- Total capital investment through 2017\*: **\$2.1 billion**
- Annual land lease payments\*: **\$1 - \$5 million**

\*Calculations based on national and state averages.

## 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: **5**



Online Wind Project



Manufacturing Facility

## Wind Projects as of 4Q 2018

- Installed wind capacity: **1,019 MW**
  - » State rank for installed wind capacity: **19th**
- Number of wind turbines: **601**
  - » State rank for number of wind turbines: **19th**
- Wind projects online: **16 (Projects above 10 MW: 13)**
- Wind capacity under construction: **408 MW**
- Wind capacity in advanced development: **1,717 MW**

## Wind Generation

During 2017, wind energy provided **30.1%** of all in-state electricity production.

- State rank for share of electricity: **4th**
- Equivalent number of homes powered by wind in 2017: **293,100**

## Wind Energy Potential

- Land-based technical wind potential at 80 m hub height: **417,878 MW**  
(Source: AWS Truepower, NREL)
- Offshore net technical wind potential at 100 m hub height: **NA MW** (Source: NREL)

## Environmental Benefits

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

- 2017 annual state water consumption savings\*: **303 million gallons**
- 2017 equivalent number of water bottles saved: **2.3 billion**
- 2017 annual state carbon dioxide (CO<sub>2</sub>) emissions avoided: **609,000 metric tons**
- 2017 equivalent cars' worth of emissions avoided: **130,000**

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



## Renewable Portfolio Goal

In 2008, South Dakota set a renewable energy target that 10% of all retail electricity sales be obtained from renewable sources by 2015. In 2009, energy efficiency was included as an allowable method to reach the objective. Wind energy has historically been the renewable resource chosen to meet renewable energy targets.