

Iowa Wind Energy Fact Sheet

Iowa is a wind energy leader

- Iowa is a national leader in wind energy, producing the highest percentage of electricity by wind of any state – over 37%.¹ Iowa was the first state to generate more than 30 percent of electricity from wind.
- Iowa's total wind capacity is 8,422 MW and growing. Iowa currently ranks second nationally in installed capacity.²
- Wind projects under construction or active development will bring Iowa well over 10,000 MW in the next few years.
- Iowa's older wind turbines are being repowered to extend their operating life and generate more energy. Iowa has over 2,500 MW of wind capacity that was recently repowered or is in the process of being repowered.³

Wind energy is good for Iowa's economy and job market

- The wind industry employed between 7,000 and 8,000 Iowans in 2017, including manufacturing, operations and maintenance, and engineering professionals (direct and indirect jobs).⁴
- There are 10 wind energy manufacturers⁵ in Iowa and 75 Iowa companies in the wind industry supply chain.⁶
- Wind energy accounts for at least \$14.2 billion in capital investment in Iowa.⁷
- Wind turbines generate \$20 million to \$25 million annually in lease payments to landowners in Iowa.⁸ These landowners are in rural Iowa and throughout much of the state. This amount is expected to grow significantly in coming years. For example, MidAmerican's Wind XI project alone is anticipated to add \$18 million in annual land lease payments.
- Iowa is the #2 state for land lease payments to landowners for wind turbines.⁹
- Google, Apple, and Facebook are among the companies that have identified the availability of low-cost Iowa wind energy as one of the reasons to locate new facilities in Iowa.¹⁰
- Wind provides significant property tax revenue to local governments. For example, MidAmerican's Wind XI project is estimated to generate \$12.5 million annually in local property tax revenue and \$500M over the life of the project.¹¹
- Three examples of 2016 county property tax revenue from wind: Adair County received \$5.9M, Cass County received \$2.7M, and Franklin County received \$3M.¹² This revenue supported schools, roads and bridges, hospitals, and more.
- Nationally, wind turbine service technicians are the second-fastest growing occupation (behind solar installers).¹³

Wind energy is affordable energy

- As wind energy grew from about 800 MW in 2005 to over 7,300 MW today, Iowa's electric rates have remained below the national average during this time.¹⁴
- New wind energy in Iowa is the cheapest new source of electricity generation, even without incentives, and is cheaper than new natural gas, nuclear, or coal.¹⁵
- New wind energy is now competing on cost with existing conventional plants, including existing coal and nuclear.¹⁶
- Building more wind energy in Iowa will create substantial savings for Iowa customers in future years: Adding another 10,000 MW of wind energy to bring Iowa to 20,000 MW of wind would save Iowa consumers \$12.6 billion over 25 years with average annual savings of over \$500 million. Average households would save \$3,200 on electric bills during this time while average industrial customers would save \$825,000.¹⁷

- Other Midwest state electricity rates are higher than Iowa's. For example, Iowa's electricity rates are 30 percent lower than Wisconsin's electricity rates. Wisconsin gets only two percent of its energy from wind (compared to 37 percent for Iowa).¹⁸

Wind energy is reliable and stable

- Effectively integrating renewable energy while maintaining grid reliability is already being achieved.
- Many studies "show that renewables can be integrated at high levels without significant issue" including the Renewable Energy Futures Study, the Western Wind and Solar Integration Study, the Wind Vision Study (all NREL) and the PJM Renewable Integration Study (GE).¹⁹
- The nation's major grid operators have found that wind and solar energy need very little backup power.²⁰ MISO, the grid operator for the middle part of the country, needs almost no additional fast-acting power reserves to back up its 10,000-plus MW of wind power on the system.^{21e}

Potential for more wind growth

- Iowa has enormous potential to add more wind generation, with studies showing a lower end of 276,000 MW of wind and higher end of 570,000 MW (depending on factors such as turbine size, spacing, and locations).²²
- About half of Iowa's 99 counties still have little or no wind development.
- Iowa's wind employment could grow to over 17,000 jobs by 2020 (11,500 direct and indirect, 6,000 induced), among the highest of any U.S. state.²³

¹ AWEA, *Wind Energy in Iowa*, Feb. 2018, available at <https://www.awea.org/resources/fact-sheets/state-facts-sheets>.

² AWEA, *Wind Energy in Iowa*.

³ IEC estimate based on utility announcements. MidAmerican is repowering 1,059 MW of GE turbines and 1,175 MW of Siemens turbines. Allele Clean Energy is repowering 186 MW of Zond turbines. NextEra Energy Resources is repowering 340 MW under PPAs for Alliant Energy.

⁴ AWEA, *Wind Energy in Iowa*.

⁵ AWEA, *Wind Energy in Iowa*.

⁶ ELP, *Iowa Wind Power & Solar Energy Supply Chain Businesses* (2015).

⁷ AWEA, *U.S. Wind Industry Annual Market Report Year Ending 2015* (2016).

⁸ AWEA, *Wind Energy in Iowa*.

⁹ Radio Iowa, *Iowa near the top in lease payment dollars for wind turbines* (March 2016).

¹⁰ <http://www.desmoinesregister.com/story/money/business/2014/04/03/facebook-google-green-wind-energy-greenpeace/7239627>;
<https://www.radioiowa.com/2017/08/24/iowas-wind-power-paramount-to-apples-decision-on-new-data-centers/>.

¹¹ MidAmerican Energy, Request for Approval of Ratemaking Principles, Iowa Utilities Board Docket No. RPU-2016-0001 (filed April 14, 2016).

¹² Data from fiscal year 2015-2016, compiled by the Iowa Environmental Council.

¹³ Bureau of Labor Statistics, *Fastest Growing Occupations* (for years 2016-2026) at <https://www.bls.gov/ooh/fastest-growing.htm>.

¹⁴ Data available from the U.S. Energy Information Administration. See also Iowa Policy Project, *Iowa Rates Lower With Wind Growth* (March 2017) at <https://www.iowapolicyproject.org/2017docs/170330-windprices-bgd.pdf>.

¹⁵ See Lazard, *Levelized Cost of Energy Analysis – Version 12.0* (November 2018) available at <https://www.lazard.com/perspective/levelized-cost-of-energy-and-levelized-cost-of-storage-2018/>.

¹⁶ Lazard, *Levelized Cost of Energy*.

¹⁷ A Renewable America and AWEA, *The Consumer Benefits of Wind Energy in Iowa* (2016).

¹⁸ John Imes, *Wisconsin Must Do Its Part to Reduce Emissions*, Wausau Daily Herald (March 2015).

¹⁹ AWEA & SEIA, *A Handbook for States: Incorporating Renewable Energy into State Compliance Plans for EPA's Clean Power Plan*, Version 1.0, February 2015, at 98. Available at: <http://awea.files.cms-plus.com/FileDownloads/pdfs/Handbook%20for%20States%20final.pdf>.

²⁰ NRDC, *Transforming the Power Grid with Clean Energy*.

²¹ NRDC, *Transforming the Power Grid with Clean Energy*, citing Nivad Navid, MISO, *Reserve Requirement Identification with the Presence of Variable Generation*, presentation to the Utility Variable Generation Integration Group (2012), at <http://www.uvlg.org/wp-content/uploads/2012/12/SanDiegoTechWorkshopAgenda.pdf>.

²² Studies by DOE and NREL including 20% by 2030 Wind (2008); Wind Vision (2015); and Renewable Energy Futures (2012).

²³ Navigant Consulting, *Economic Development Impacts of Wind Projects* (2017) at <https://www.navigant.com/insights/energy/2017/awea-wind-analysis>.