



Iowa Environmental Council

IOWA WIND ENERGY FACT SHEET

Updated: March, 2021

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 – 60%. [1] Iowa now generates more electricity from wind than any other single source. [2]
- Iowa's total wind capacity is 11,660 MW and growing. Iowa currently ranks second nationally in installed capacity. [3]
- Wind projects under construction or in active development will bring Iowa over 12,000 MW in the next few years. [4]
- 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. [5]

WIND ENERGY IS GOOD FOR IOWA'S ECONOMY AND JOB MARKET

- The wind industry directly employed 3,909 Iowans in 2019, including manufacturing, operations and maintenance, and engineering professionals. [6]
- There are 53 Iowa companies in the wind industry supply chain. [7]
- Wind energy accounts for at least \$19 billion in capital investment in Iowa. [8]
- Wind turbines generate \$78 million annually in lease payments to landowners in Iowa. [9] These landowners are in rural Iowa and throughout much of the state.
- 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. Wind projects contributed approximately \$60 million in tax revenue in 2020. [11] MidAmerican's Wind XI project alone is estimated to generate \$12.5 million annually in local property tax revenue and \$500M over the life of the project. [12]
- 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. [13] This revenue supported schools, roads and bridges, hospitals, and more.
- Nationally, wind turbine service technicians are projected to be the fastest-growing occupation in the 2019-2029 time frame. [14]

WIND ENERGY FACT SHEET: CONTINUED

WIND ENERGY IS AFFORDABLE ENERGY

- As wind energy grew from about 800 MW in 2005 to over 10,900 MW today, Iowa's electric rates remain below the national average. [15]
- 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. [16]
- New wind energy is now capable of competing on cost with existing conventional plants, including existing coal, gas, and nuclear. [17]
- 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. [18]
- 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 34 percent for Iowa). [19]

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). [20]
- The nation's major grid operators have found that wind and solar energy need very little backup power. [21] 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. [22]

POTENTIAL FOR MORE WIND GROWTH

- Iowa installed more wind energy capacity in 2019 than in any previous year, at 1.7 GW. [23] Iowa continues to be capable of significant year-over-year growth.
- Iowa has enormous potential to add more wind generation, with estimates ranging from 280 GW to 571 GW depending on factors like technology and land area types used. [24]
- The wind energy production potential in Iowa is more than 20 times the total Iowa retail load in 2018. [25]
- Iowa needs to add between 20 GW and as much as 50 GW to reach 100% renewable energy by 2050. [26]
- The regional grid operator, MISO, is currently studying over 666 MW of wind projects proposing to interconnect in Iowa. [27]
- Just under half of Iowa's 99 counties still have little or no wind development.

SOURCES

1. [Electricity data browser - Net generation for electric power](#) (eia.gov) (accessed March 2021).
2. Id.
3. [ACP_MarketReport_4Q2020.pdf](#) (cleanpower.org).
4. Id.
5. IEC estimate based on utility announcements. MidAmerican is repowering 1,059 MW of GE turbines and 1,175 MW of Siemens turbines. Allete Clean Energy is repowering 186 MW of Zond turbines. NextEra Energy Resources is repowering 340 MW under PPAs for Alliant Energy.
6. [Clean Jobs Midwest](#)
7. [ELPC, Iowa Wind Power & Solar Energy Supply Chain Businesses](#) (2021 Update).
8. Information provided to IEC by ACP. [Wind energy is now Iowa's largest source of electricity, report says](#) (desmoinesregister.com).
9. Id.
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. Information provided to IEC by ACP.
12. MidAmerican Energy, Request for Approval of Ratemaking Principles, Iowa Utilities Board Docket No. RPU-2016-0001 (filed April 14, 2016).
13. Data from fiscal year 2015-2016, compiled by the Iowa Environmental Council.
14. Bureau of Labor Statistics, Fastest Growing Occupations (for years 2019-2029) at <https://www.bls.gov/ooh/fastest-growing.htm>.
15. U.S. Energy Information Administration, 1990-2019 Average Price by State by Provider, available at https://www.eia.gov/electricity/sales_revenue_price/. See also Iowa Policy Project, Iowa Rates Lower With Wind Growth (March 2017) at <https://www.iowapolicyproject.org/2017docs/170330-windprices-bgd.pdf>.
16. See Lazard, Levelized Cost of Energy Analysis – Version 14.0 (October 2020) at 2, available at <https://www.lazard.com/perspective/levelized-cost-of-energy-and-levelized-cost-of-storage-2020/>.
17. Lazard, Levelized Cost of Energy at 7.
18. [A Renewable America and AWEA, The Consumer Benefits of Wind Energy in Iowa \(2016\)](#).
19. U.S. EIA, Wisconsin – State Energy Profile Analysis (May 21, 2020), available at <https://www.eia.gov/state/analysis.php?sid=WI>.
20. 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: [Handbook for States final_0.pdf](#) (seia.org).
21. NRDC, Transforming the Power Grid with Clean Energy.
22. 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).
23. [WIND Exchange: U.S. Installed and Potential Wind Power Capacity and Generation](#) (energy.gov).
24. Studies by DOE and NREL including 20% by 2030 Wind (2008); Wind Vision (2015); and Renewable Energy Futures (2012).
25. Iowa Environmental Council, Iowa's Road to 100% Renewable (2020).
26. Id.
27. Midcontinent Independent System Operator, Generator Interconnection Queue, at https://www.misoenergy.org/planning/generator-interconnection/GI_Queue/ (last accessed Mar. 15, 2021).