Iowa Environmental Council

# IOWA SOLAR ENERGY FACT SHEET

Updated: January, 2021

## SOLAR ENERGY IN IOWA IS GROWING

- As of October 2020, Iowa had at least 158.7 megawatts (MW) of total installed solar capacity. [1] This is up from approximately 2 MW of solar installed in 2012.
- Iowa is on track to exceed 1,500 MW of solar with the addition of approved and proposed utility-scale projects over the next few years.
- Approved projects include Invenergy's Worthwhile Solar Farm East (149 MW), Worthwhile Solar Farm West (300 MW), Big Dave Solar Farm (300 MW), and CIPCO's Wapello Solar (100 MW). [2]
- Proposed or forthcoming projects include Holliday Creek (100 MW) and Alliant Energy's Clean Energy Blueprint (up to 400 MW). [3]
- Every one of Iowa's 99 counties has solar projects installed that benefited from the Iowa upfront solar tax credit. [4] This includes 6,213 projects and counting.
- Washington, Linn, and Johnson are the counties with the highest count of installations, each with more than 400. Dubuque, Winneshiek, Story and Polk each has more than 200 installations. Farmers and rural businesses are leading the use of solar in many of these areas. [5]
- As of October 2020, Iowa had more small-scale distributed solar than most Midwest and Plains states. [6]

## SOLAR ENERGY STRENGTHENS IOWA'S ECONOMY

- There were nearly 870 jobs supported by the solar industry in Iowa in 2019. [7]
- Solar jobs grew faster in Iowa in 2019 than in any other Midwest state, at 16.5%. [8] Nationally, solar installers are the third fastest growing occupation (behind wind techs and nurses). [9]
- There are nearly 100 Iowa businesses involved in the solar energy supply chain. [10]
- Investments of $291 million are associated with solar projects that benefited from the Iowa solar tax credit alone, meaning the total investment in solar is even higher. [11]
- The two Worthwhile and Big Dave Solar Farms combined will generate an estimated $77.5 million in new local tax revenue and $195 million in land lease payments over 35 years. [12]
- Solar lease payments range from $600 - $715 per acre while average cropland rents in 2019 were $219. [13]

## SOLAR ENERGY COSTS ARE LOW

- Costs have come down significantly in recent years. Lazard recently reported that utility-scale solar's levelized costs declined 90% between 2009-2020. [14]
- Lazard's cost analysis shows that utility-scale solar has a lower levelized cost than conventional generation technologies like gas, coal and nuclear. [15] New utility-scale solar can even compete on cost with existing conventional generation. [16]
- According to data provided by the Iowa Department of Revenue, average residential solar costs per kilowatt in 2014 were $3,386, falling to $2,715 in 2019. Average business solar costs per kilowatt were $3,143 in 2014, falling to $2,163 in 2019. [17]

## UTILITY SOLAR AND COMMUNITY SOLAR ARE PART OF IOWA'S SOLAR SUCCESS

- Ames Municipal Utilities and Cedar Falls Utilities have built the largest community solar projects in Iowa (2 MW and 1.5 MW respectively). Alliant Energy is launching a community solar project in 2021.
- Many consumer-owned utilities have developed solar projects supported by Iowa's 476C production tax credit, including 3 municipal utilities (over 3.8 MW) and 10 electric coops (over 2.48 MW). [18]

## IOWA HAS THE POTENTIAL TO BE A SOLAR LEADER

- Iowa ranks 16th among U.S. states in the technical potential for solar energy production. This puts Iowa ahead of states such as Florida, Georgia, Missouri, North Carolina and South Carolina. [19]
- Iowa has the technical potential for over 4,000,000 MW of solar. The solar energy production potential in Iowa is 100 times more than the total Iowa retail load in 2018. [20]
- Iowa needs to add between 5,000 MW and as much as 46,000 MW to reach 100% renewable energy by 2050. [21]
- There are over 3,100 MW of potential solar projects in Iowa that are being studied for connection to the grid by the regional grid operator MISO. [22]
- Siting one MW of solar takes between 5 and 10 acres of land. [23] Iowa could meet 10% of our electricity requirements with about 1.2 GW of solar, requiring between 6,000 and 12,000 acres of land or a range of 0.02% to 0.04% of Iowa farmland if the solar farms were located on current farm ground.

# SOURCES


1. Energy Information Administration, Electric Power Monthly, Table 6.2B Net Summer Capacity Using Primarily Renewable Energy Sources by State (data from October 2020 as reported in December 2020) at http://www.eia.gov/electricity/monthly/?scr=email. The EIA estimate of 158.7 MW as of October 2019 is consistent with available Iowa data on installed solar capacity from the Iowa Department of Revenue, Iowa Utilities Board, solar installers, multiple utilities, and may be conservative.
2. Iowa Utilities Board, Applications for a Generating Certificate (September 2019) GCU-2019-002, GCU-2019-003 and GCU-2019-004 available at https://efs.iowa.gov/efs/ShowDocketSearch.do.
3. Iowa Utilities Board, Application for a Certificate of Public Convenience and Necessity (May 2020) available at https://efs.iowa.gov/efs/ShowDocketSummary.do?docketNumber=GCU-2020-0001; Alliant Energy, Clean Energy Blueprint at https://poweringwhatsnext.alliantenergy.com/clean-energy/.
4. Iowa Department of Revenue, Solar Energy System Tax Credit Annual Report for 2020 (released December 31, 2020) available at https://tax.iowa.gov/reports.
5. Id. at Figure 3, p. 7.
6. EIA, Electric Power Monthly, Table 6.2B. Iowa's 142.7 MW of estimated distributed/small-scale solar was higher than distributed solar estimates for Indiana, Michigan, Minnesota, Nebraska, Wisconsin, Kansas, North Dakota and South Dakota.
7. The Solar Foundation, Solar Jobs Census 2019 at https://www.solarstates.org/#state/iowa/counties/solar-jobs/2019.
8. The Clean Energy Trust, https://www.cleanjobsmidwest.com/state/iowa.
9. Bureau of Labor Statistics, Fastest Growing Occupations (for years 2019-2029) at https://www.bls.gov/ooh/fastest-growing.htm.
10. IEC estimate based on IEC research on Iowa solar businesses as well as past publications by the Solar Energy Industries Association and the Environmental Law & Policy Center.
11. IA Dept. of Revenue, Solar Energy System Tax Credit Annual Report for 2020, Table 4, p. 6.
12. Iowa Utilities Board, Applications for a Generating Certificate (September 2019) GCU-2019-002, GCU-2019-003 and GCU-2019-004 at https://efs.iowa.gov/efs/ShowDocketSearch.do
13. Id.
14. Lazard, Levelized Cost of Energy Analysis – Version 14 (October 2020) at https://www.lazard.com/perspective/levelized-cost-of-energy-and-levelized-cost-of-storage-2020/ at 8.
15. Id. at 2.
16. Id. at 7.
17. Iowa Department of Revenue, Solar Energy System Tax Credit Annual Report for 2020 at page 8 (IEC calculations for for residential and business installations).
18. Iowa Utilities Board, Renewable Energy Tax Credits (updated Dec. 12, 2019) at https://iub.iowa.gov/regulated-industries/electric/renewable-energy-tax-credits.
19. Iowa Environmental Council, Real Potential, Ready Today: Solar Energy in Iowa.
20. Iowa Environmental Council, Iowa's Road to 100% Renewable (2020).
21. Id.
22. Midcontinent Independent System Operator, Generator Interconnection Queue at https://www.misoenergy.org/planning/generator-interconnection/GI_Queue/ (last accessed Jan. 6, 2021).
23. Ong et al, National Renewable Energy Laboratory, *Land Use Requirements for Solar Power Plants in the United States* (June 2013), at https://www.nrel.gov/docs/fy13osti/56290.pdf.