

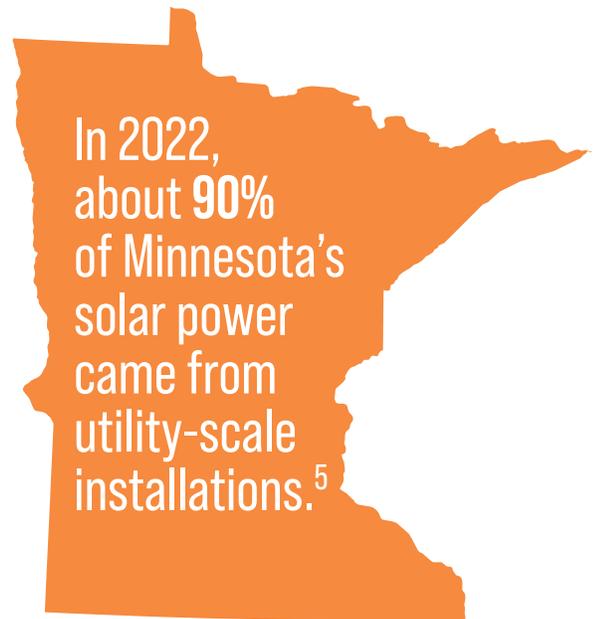
Fact sheet:

Solar Energy Presents Opportunity for Minnesota

Solar energy production offers untapped potential in Minnesota

Solar energy installations are more common than ever before, with the industry continuing to see steady growth nationwide. Across Minnesota, there is considerable potential for residential, community, and utility-scale solar projects.

- Nationally, the solar industry grew by 25.1% between 2021 and 2022. In Minnesota, the industry grew 3.3% during the same period.¹
- In 2022, Minnesota ranked 17th among U.S. states and territories in solar power production, with the state receiving 3.71% of its electricity from solar.²
- The 176 companies involved in the manufacturing and installation of solar, or related activities, have created 4,643 jobs in the state.³
- Minnesota ranks 19th among states for total energy consumed per capita.⁴



Solar energy installation is more affordable

- In the past decade, the cost to install solar has dropped by more than 40%.⁶
- Prices in Minnesota have also dropped by 42% over the past 10 years.⁷
- As of March 2024, Minnesota's average residential solar panel system costs \$3.13 per watt, including installation. For a 5-kilowatt installation, this comes to about \$15,635 before incentives, though prices range from \$13,290 to \$17,980.⁸
- By taking advantage of the federal solar investment tax credit, the average price drops by 30% for solar systems installed on residential properties.⁹
- Solar accounted for 48% of all new electricity-generating capacity added to the U.S. grid through the first three quarters of 2023.¹⁰

Sources

1 "Table 3.21. Net Generation from Solar Photovoltaic." U.S. Energy Information Administration, Oct. 19, 2023, [eia.gov/electricity/annual/html/epa_03_21.html](https://www.eia.gov/electricity/annual/html/epa_03_21.html). Accessed March 2024.

2 "Minnesota Solar." Solar Energy Industries Association, [seia.org/state-solar-policy/minnesota-solar](https://www.seia.org/state-solar-policy/minnesota-solar). Accessed March 2024.

3 Ibid.

4 "U.S. States, State Profiles and Energy Estimates, Rankings: Total Energy Consumed per Capita, 2021." U.S. Energy Information Administration, [eia.gov/state/rankings](https://www.eia.gov/state/rankings). Accessed March 2024.

5 "Electricity Data Browser, Net Generation, United States, All Sectors." U.S. Energy Information Administration, [eia.gov/electricity/data/browser](https://www.eia.gov/electricity/data/browser). Accessed March 2024.

6 "Solar Industry Research Data." Solar Energy Industries Association, [seia.org/solar-industry-research-data](https://www.seia.org/solar-industry-research-data). Accessed March 2024.

7 Ibid.

8 Walker, Emily. "How much do solar panels cost in Minnesota in 2024?" EnergySage, March 15, 2024. energysage.com/local-data/solar-panel-cost/mn/. Accessed March 2024.

9 "Solar Investment Tax Credit (ITC)." Solar Energy Industries Association, [seia.org/initiatives/solar-investment-tax-credit-itc](https://www.seia.org/initiatives/solar-investment-tax-credit-itc). Accessed March 2024.

10 Ibid.





Strong policies encourage solar growth in Minnesota

Minnesota has been aggressive in efforts to expand renewable energy, implementing strong policies to help with the transition.

2040 carbon-free electricity law

- Passed in 2023, the clean electricity law commits all utilities to providing their Minnesota customers with 100% carbon-free electricity by 2040, with reporting on benchmarks required every five years.¹¹
- This law advances the state's efforts to reduce greenhouse gas emissions, address environmental justice, and generate local employment opportunities in the clean energy sector.¹²
- The carbon-free electricity law contains measures to streamline the siting and routing process for solar energy systems, creating a path to expedite the state's clean energy transition.¹³

Sources, continued

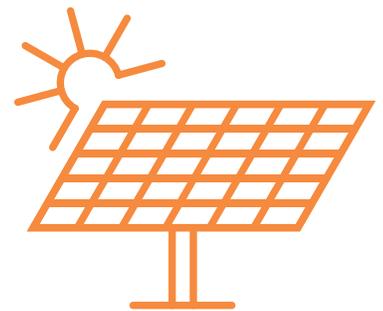
11 Olson, Jo. "Minnesota's 100% clean electricity law explained." Fresh Energy, Feb. 20, 2023, fresh-energy.org/minnesotas-100-clean-electricity-bill-explained. Accessed March 2024.

12 Dawson, Madeline. "Minnesota Joins 20 Other States in Pursuit of 100 Percent Clean Energy." Environmental and Energy Study Institute, April 21, 2023, eesi.org/articles/view/minnesota-joins-20-other-states-in-pursuit-of-100-percent-clean-energy. Accessed March 2024.

13 Ibid.

Mandatory renewable energy portfolio standard

- Minnesota's mandatory renewable energy portfolio standard requires electricity providers, with the exception of the state's largest utility, to generate or procure at least 25% of their electricity retail sales from eligible renewable sources by 2025.¹⁴
- Additionally, the law sets a goal for 10% of statewide electricity sales to come from solar power by 2030.¹⁵



14 "Minnesota State Profile and Energy Estimates." U.S. Energy Information Administration, Aug. 17, 2023, eia.gov/state/analysis.php?sid=MN. Accessed March 2024.

15 "Renewable Energy Standard: Program Overview." DSIRE, NC Clean Energy Technology Center, Nov. 8, 2023, programs.dsireusa.org/system/program/detail/2401. Accessed March 2024.



Solar expansion hinges on investments in transmission

The outlook for solar growth in the U.S. is strong, averaging 14% annually over the next five years.¹⁶ However, transmission congestion and inadequate capacity may stall the growth of Minnesota's solar energy industry.



Inadequate transmission capacity

The 2023 Biennial Transmission Projects Report identified 164 present and foreseeable inadequacies across Minnesota.¹⁷ This is an increase from 103 transmission inadequacies identified in the 2021 report.¹⁸



Permitting process delays

The average time from application acceptance to permit issuance for solar energy by the Minnesota Public Utilities Commission is 378 days.¹⁹ An analysis of Minnesota solar projects started in 2015 finds that the average time from application acceptance to permit issuance was 300 days.²⁰ By contrast, solar projects started in 2019 saw an average time of 549 days.²¹



Growing solar projects queue

Minnesota is part of the Midcontinent Independent Service Operators (MISO) transmission network. Solar projects slated to produce 410 gigawatts of electricity are awaiting approval to connect to the MISO network's transmission grid.²²

As crowded transmission lines and limited capacity create bottlenecks for new connections and suppress the pace of installations, it is crucial for the state to invest in its transmission infrastructure. Without robust transmission, Minnesota cannot tap into the economic and environmental benefits offered by the growing solar industry, including energy cost savings, job opportunities, and contributions to the local tax base.²³

Sources, continued

16 Ibid.

17 "Minnesota's Electric Transmission System, Annual Adequacy Report." Minnesota Department of Commerce, Minnesota Public Utilities Commission, Jan. 15, 2024, lrl.mn.gov/docs/2024/mandated/240278.pdf. Accessed March 2024.

18 "2021 Biennial Transmission Projects Report." Minnesota Electric Transmission Planning, Oct. 29, 2021, minnelectrans.com/documents/2021_Biennial_Report/2021-Biennial-Transmission-Projects-Report.pdf. Accessed March 2024.

19 Rosenthal, Aaron. "Powering Progress: Transforming Clean Energy Permitting for a Greener Minnesota." North Star Policy Action, media.websitecdn.net/sites/949/2024/03/Powering-Progress.pdf. Accessed March 2024.

20 Ibid.

21 Ibid.

22 "Generator Interconnection Interactive Queue." Midcontinent Independent Service Operator, misoenergy.org/planning/resource-utilization/GI_Queue/gi-interactive-queue. Accessed March 2024.

23 Huesca, Eric. "The Benefits of Solar Energy for Communities." Solgen Power, July 21, 2023, solgenpower.com/2023/07/21/the-benefits-of-solar-energy-for-communities. Accessed March 2024.

