Policy Decision Memo

TO: Representative Amaad Rivera-Wagner

FROM: Christine, Eliana, Kunsh, Mara, Rajat, Spencer

SUBJECT: Wisconsin Solar Project

Executive Summary

The Residential Clean Energy tax credit program, which benefited over 70,000 households in Wisconsin in 2023, is being terminated at the end of 2025 (IRS 2025). The Wisconsin State Assembly has an opportunity to mitigate the loss of this program by implementing a statewide group-buy solar panel program (the "Wisconsin Solar Project") similar to the regional Grow Solar program operating in Green Bay. The cheaper costs and easier installations of group purchasing programs increase solar panel usage and therefore align with Wisconsin's clean energy goals. To make this program appealing to rural Wisconsin residents, we recommend creating outreach initiatives for farmers to promote the incentives of agrivoltaics - a new form of mixed land use that combines farming and solar energy generation. Agrivoltaics can be revenue generating for farmers when they can sell excess electricity generated back to the grid. To ensure that this is a possibility, we recommend introducing legislation that mandates all power companies in Wisconsin to offer compensation for excess electricity. The Wisconsin Solar Project has the potential for bipartisan support, including from the agricultural and energy policy committees.

Background

Both the City of Green Bay and the State of Wisconsin have published renewable energy plans that commit to achieving carbon neutrality by 2050. Green Bay has partnered with Wisconsin Public Service to significantly reduce emissions from electricity by 2030. Because electricity use accounts for roughly 60% of Green Bay's carbon emissions, transitioning to clean energy represents the largest potential impact. The city has also supported this transition with its own group solar panel purchase program designed to reduce costs for residents and businesses (City of Green Bay, 2023). Wisconsin's 2025 Clean Energy Plan Progress Report identified agrivoltaics - the dual use of land for agriculture and solar energy - as a potential clean energy strategy alongside larger solar developments (Wisconsin Office of Sustainability and Clean Energy, 2025).

However, agrivoltaics remains a newer and less familiar technology, facing challenges related to public outreach and growing backlash toward large-scale solar farms. Much of the criticism towards solar projects is a reflection of misinformation, specifically regarding industrial-scale solar plants. This underscores the importance of addressing public concerns and increasing educational programs specifically for agrivoltaic solar development.

Key Findings

- **Group buying solar panels lowers installation costs and expands access to clean energy.** The Grow Solar Green Bay-Fox Valley Program, under the direction of the Midwest Renewable Energy Association and in partnership with the city of Green Bay, enables residents and small businesses to jointly purchase solar systems at discounted rates, facilitated by a single installer**.** The bulk model reduces equipment and labor costs, simplifies permitting, and ensures transparent and standardized pricing. Outreach is done for free through the "Solar Power Hour" sessions, which help educate interested individuals on financing and installation options. Consequently, aggregate demand from group-buy programs has been shown to lower installation prices by approximately $0.24 - $0.31 per watt (5% - 10% savings per system) by reducing marketing, permitting and administrative expenses (Ramasamy et al., 2022, NREL report). The Midwest Renewable Energy Association's broader "Grow Solar" and "Solarize" initiatives across six Midwest states have installed over 22 - 25 megawatts of new small-scale solar capacity. In Polk County, Iowa, the program aided by adding 432 kilowatts (kW) across 52 properties, generating more than $1 million in local investments (Rosen, 2024, Yahoo News; Grow Solar Polk County). In Wisconsin, participants can combine group-buy discounts with the Focus on Energy rebate of $300, plus a $300 rural bonus (Focus on Energy).
- **Mixed land use that combines agriculture and solar panels is a viable option for Wisconsin farmers.** While anyone in Illinois can participate in the group-ordering solar panels program, specifically targeting farmers offers numerous benefits through agrivoltaics. Agrivoltaics has been successfully implemented in countries across the globe such as Greece, China, and Japan (Stawarz 2024; AgTech Digest 2023). In Greece, sheep grazing under solar panels both feeds the animals and prevents vegetation from blocking the solar panels' function (Rodríguez 2021). In Hainan, China, solar-paneled greenhouses produce up to two gigawatts of electricity and enough leafy vegetables for around 3 million

people, about 30% of the province's population (Silan et al. 2024). Agrivoltaics has also been implemented more locally. In Colorado, a farm called Jack's Solar Garden is home to 3,276 solar panels (enough to power about 300 homes) and has also produced 25,000 pounds of produce in the past four years (Gilchrist 2024). Agrivoltaics is possible in Wisconsin as well. The state's 58,521 farms span 13.8 million acres of land and produce many exports ideal for agrivoltaics (Wisconsin Department of Agriculture, Trade and Consumer Protection). Wisconsin is home to over 1 million cows, whose grazing lands could support both the livestock and solar panels, similar to Greece's model (Rodríguez 2021; Just Energy 2023). Wisconsin farmers also produce significant quantities of potatoes, cabbage, carrots, and beets, which have been shown to be successful in an agrivoltaics environment (United States Department of Agriculture and National Agricultural Statistics Service 2024; Just Energy 2023; Stawarz 2024). Therefore, many Wisconsin farmers could take advantage of this program without changing their current crops or livestock practices.

- **Farms that install solar panels reduce their electricity costs and can sell excess energy for profit.** The peak output of agrivoltaics systems varies on the implementation and conditions, and estimates tend to range from 200 kW to 600 kW per hectare of land (Pandey et al, 2025). Given that US household energy consumption tends to average approximately 30 kW per day, we see that even an hour of generation is more than sufficient to not only power the average household but have substantial excess for sale back to the grid (EIA, 2024). Given the fact that, on average, farms in Wisconsin are approximately 96 hectares, there is significant potential for solar energy generation and sale (USDA, 2024). Revenue increases of farms utilizing agrivoltaics systems tend to vary by crop and by the price received for excess electricity. Estimates of revenue increases ranged from a 4-fold to an over 15-fold increase across all crops, with corn, a crop commonly grown in Wisconsin, seeing a 4.7-8.3 times increase in revenue (Pandey et al, 2025). When accounting for all costs, including upfront investment into agrivoltaic systems, experimental studies suggest that initial investments can be paid off in approximately 8-15 years. This depends in part on local conditions and financial assistance such as low-cost loans that can further reduce costs (Pandey et al, 2025). Given most agrivoltaic systems have a lifespan of between 20-30 years, they are profitable for farmers in the long term (Pandey et al, 2025).

- **Although payments for excess electricity generation are not yet available from all providers, existing infrastructure supports the feasibility of such programs.** Net metering is a billing system that allows customers to receive credit for surplus electricity sent back to the grid, typically at the same retail rate they pay for electricity consumed. Investor-owned utilities and municipal utilities are required by state law to offer net metering for customer-owned renewable systems up to 20 kW (PSC 2024; Solar Reviews 2024). However, electric cooperatives, which serve a large portion of Wisconsin's rural and agricultural regions, are not bound by the same net metering mandate (WECA 2024; USDA 2024). Many co-ops compensate excess generation at reduced "avoided cost" rates - amounts significantly lower than retail prices (Chequamegon Bay Renewables 2023; Wisconsin Public Service Corporation 2024; Alliant Energy 2024). These lower payments often discourage rural households from investing in sustainable energy like solar or wind. However, several electric cooperatives have voluntarily adopted more supportive approaches, such as wholesale rate formulas for up to 40 kW, or full retail credit for systems up to 20 kW (Chequamegon Bay Renewables 2023). Adopting these approaches is made easier by monthly billing cycles already used by many electric cooperatives which reconcile customer usage and generation on a monthly basis and a preexisting statewide framework that ensures distributed systems are interconnected safely and reliably (Chequamegon Bay Renewables 2023, Public Service Commission of Wisconsin 2024). These examples show that equitable and technically feasible models already exist within the cooperative framework.

Recommendations

We propose harmonizing existing efforts explored at various municipal levels into a comprehensive legislative package, the Wisconsin Solar Project, that ensures buy-in from residents, farmers, utility companies, and key legislators by implementing four key recommendations. Each element will require activating the state's existing institutional and regulatory tools to minimize the need for new mandates.

We recommend **expanding Grow Solar into a statewide, utility-backed program**. Wisconsin should extend the momentum of Grow Solar into a wider "Grow State Solar" program that uses collective purchasing power to reduce costs and expand access to residential, commercial, and rural participants. Administering the program through Focus on Energy allows

rebates to scale with group buying while maintaining existing tax exemptions to ensure affordability. Partnering with utilities to coordinate installations on strategic power lines strengthens grid reliability, lowers peak demand, and creates a framework that harmonizes customers' savings with energy grid efficiency.

Introducing legislation to mandate statewide net metering would allow solar adopters to sell back excess energy. This would level the playing field for rural families and introduce policy certainty for solar adopters of all sizes. For farmers, it offers income stabilization during dormant crop seasons by allowing energy generation to supplement yields. The existing Public Service Commission authority could also establish standardized net metering and interconnection rules via its administrative docket.

To earn farmer trust and address rural concerns regarding solar programs and agrivoltaics, we recommend **targeted agrivoltaics education initiatives** led by the Office of Rural Prosperity, in collaboration with UW-Madison and major utilities. These initiatives should showcase successful pilot projects to demonstrate their viability while proving that agrivoltaics is foundational to providing a supplemental income stream to farmers, anchoring their livelihoods.

Finally, **securing legislative partners through energy security and agricultural framing** is crucial to passing a rural clean energy bill. To build bipartisan coalitions, we recommend engaging with Reps. Travis Tranel and David Steffen, whose committees shape agricultural and energy policy. Tranel should be briefed on solar as a cost-saving infrastructure investment that helps sustain dairy, beef, and corn productivity for the 49th district. Steffen can be sold solar as complementary to nuclear energy; critical to grid reliability while attracting industrial investment. These frames enable both legislators to advocate for solar within their respective caucuses and secure the backing necessary to rebuff conventional rebuttals.

These state mechanisms can be paired with a variety of revenue streams: At the federal level with the USDA's Rural Energy for America grants, and at the state level with the Wisconsin Economic Development Corporation's rural programs, as well as the state Department of Agriculture, Trade, and Consumer Protection's crop innovation funds. Taken in the aggregate, a stable base of policy and funding creates a viable, cost-effective path for implementation.

Bibliography

AgTech Digest. 2023. “Agrivoltaics: When Solar Power Meets Agriculture” April 13. https://agtechdigest.com/p/agrivoltaics-when-solar-power-meets.

Alliant Energy. 2024. “Wisconsin Solar Energy Policy Changes.” Cited in *Wisconsin Public Radio*, July 2024. www.wpr.org/economy/2-wisconsin-utilities-propose-changing-reimbursement-rates-solar-energy-customers.

Barron Electric Cooperative. 2024. “Renewable Energy Programs.” www.barronelectric.com.

Bayfield Electric Cooperative. 2024. “Solar Buyback Policy.” www.bayfieldelectric.com.

California Council on Science & Technology (CCST). 2023. “Watch: The Role of Agrivoltaics in California’s Water-Energy-Food Nexus.” August 15. https://ccst.us/register-the-role-of-agrivoltaics-in-californias-water-energy-food-nexus/.

Chequamegon Bay Renewables. 2023. *Net Metering Report: Wisconsin Electric Cooperatives and Municipal Utilities.* www.cheqbayrenewables.org/uploads/1/0/9/8/109801585/net_metering_report_final.pdf.

City of Green Bay. 2023. “Clean Energy: Green Bay - Executive Summary.” https://www.greenbaywi.gov/DocumentCenter/View/11382/Clean-Energy-Green-Bay-December-2023-Executive-Summary?bidId=

U.S. Energy Information Administration. 2024. “Use of energy explained.” Updated July 15, 2024. https://www.eia.gov/energyexplained/use-of-energy/.

Gilchrist, Duncan, with photography by Joanna Kulesza. 2024. “Farming the Sun.” *The Nature Conservancy*, May 9. https://www.nature.org/en-us/magazine/magazine-articles/agrivoltaic-solar-farm-grows-produce/.

“Grow Solar Polk County.” *Focus on Energy*. Accessed October 2025.

https://www.growsolar.org/polk-county.

InSPIRE. 2025. “Agrivoltaics Map.” *Open Energy Information (OpenEI)*. Accessed October 2025. https://openei.org/wiki/InSPIRE/Agrivoltaics_Map.

IRS. 2025. “Residential Clean Energy Credit.” Updated July 3, 2025. https://www.irs.gov/credits-deductions/residential-clean-energy-credit.

———. “SOI tax stats - Clean energy tax credit statistics.” Updated January 16, 2025. https://www.irs.gov/statistics/soi-tax-stats-clean-energy-tax-credit-statistics.

Just Energy. 2023. “Understanding Agrivoltaics: A Greener Way to Farm.” November 14 (updated April 15, 2024). https://justenergy.com/blog/agrivoltaics/.

Madison Gas & Electric Company (MGE). 2024. “Net-Metering for Solar Energy.” www.mge.com/smart-energy/clean-energy/solar-energy/net-metering.

Municipal Electric Utilities of Wisconsin (MEUW). 2024. “Member Communities.” www.meuw.org/communities.

NPR. 2025. “Do you want federal money for an EV or home solar? Time is running out — fast. “ July 16, 2025. https://www.npr.org/2025/07/16/nx-s1-5462190/trump-tax-credit-solar-ev-heat-pump.

Pandey, Ganesh, Sarah Lyden, Evan Franklin, Benjamin Millar, and Matthew Tom Harrison. “A Systematic Review of Agrivoltaics: Productivity, Profitability, and Environmental Co-Benefits.” *Sustainable Production and Consumption* 56 (June 2025): 13–36. https://doi.org/10.1016/j.spc.2025.03.006.

Pierce Pepin Cooperative Services. 2024. “Distributed Energy Resource Guidelines.” www.piercepepin.coop/energy-programs.

Public Service Commission of Wisconsin (PSC). 2024. “Customer-Owned Generation Resources.” www.psc.wi.gov/Pages/ForConsumers/MoreResources/CustomerOwnedGeneration.aspx.

Ramasamy V., Feldman D., Desai J., Margolis R., 2022: U.S Solar Photovoltaic System and Energy Storage Cost Benchmarks. https://docs.nrel.gov/docs/fy22osti/80694.pdf.

Richland Electric Cooperative. 2024. "Member Services and Distributed Generation." https://en.wikipedia.org/wiki/Richland_Electric_Cooperative.

Rodríguez, Laura. 2021. "Benefits of Agrivoltaics and 5 real-life examples of successful implementations." *RatedPower Blog*, September 14. https://ratedpower.com/blog/benefits-agrivoltaics-examples/.

Rosen A., 2025, Yahoo News: "Green Bay officials highlight success of "Grow Solar" program amidst federal cuts to solar tax credits" https://www.yahoo.com/news/articles/green-bay-officials-highlight-success-230253304.html.

Silan, Jose Gabriel, Shengnian Xu, and Marlon Joseph Apanada. 2024. "Dual Harvest: Agrivoltaics Boost Food and Energy Production in Asia." *World Resources Institute*, May 23. https://www.wri.org/insights/agrivoltaics-energy-food-production-asia.

Solar Reviews. 2024. "Wisconsin Net-Metering Rules." www.solarreviews.com/blog/wisconsin-net-metering.

"Solar for Homes." *Focus on Energy*. Accessed October 2025. focusonenergy.com/residential/solar-for-homes.

Stawarz, Steve. 2024. "Agrivoltaics: A New Kind of Double Harvesting." *The Conservation Foundation*, July 30. https://theconservationfoundation.org/agrivoltaics/.

United States Department of Agriculture and National Agricultural Statistics Service. 2024. "State Agriculture Overview: Wisconsin." Updated October 30, 2025. National Agricultural Statistics Service. https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=WISCONSIN.

United States Department of Agriculture and National Agricultural Statistics Service. 2024.

"Wisconsin Ag News – Farms and Land in Farms " February 16, 2024. National Agricultural Statistics Service. https://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/Miscellaneous/2024/WI-Farms-02-24.pdf.

Wisconsin Department of Agriculture, Trade and Consumer Protection. "Wisconsin Agricultural Statistics." Updated August 28, 2025. https://datcp.wi.gov/Pages/Publications/WIAgStatistics.aspx.

Wisconsin Electric Cooperative Association (WECA). 2024. "Electric Cooperative Members." www.weca.coop/electric-cooperative-memb.

Wisconsin Public Service Corporation. 2024. *Electric Tariff Sheet D-78.00: Parallel Generation (Net-Metering).* www.wisconsinpublicservice.com/company/mi_tariffs/ED9_D78.pdf.

———. 2024. "Environmental Generation in Wisconsin." www.wisconsinpublicservice.com/environment/generation-wi.

Wisconsin Office of Sustainability and Clean Energy. 2025. "Clean Energy Plan: Progress Report." https://osce.wi.gov/Documents/2025%20Clean%20Energy%20Plan%20Progress%20Report.pdf.