



INCLUSIVE SHARED SOLAR INITIATIVE

Wisconsin's Inclusive Solar Community Offering (WISCO):

Implementation Plan Designed to Bring Community Solar Options to Low- and Moderate-Income Communities in Wisconsin

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For more information about the Inclusive Shared Solar Initiative, please visit

<https://naseo.org/issues/solar/issi>.

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Executive Summary

The Wisconsin Office of Energy Innovation (OEI) recognizes that rural households with low-to-moderate income (LMI) are disproportionately impacted by energy poverty and a high energy burden. Additionally, these households have had difficulty accessing clean energy from renewable resources. Community solar arrays could be used to improve energy equity and reduce the cost burden for LMI households. However, to date, all community solar efforts in Wisconsin seek voluntary participants, are owned and operated by utilities, and typically require the customer to make a bulk payment up front or pay higher monthly fees through the course of the useful life of the panels. The cost premium placed on community solar participation in the state is a barrier to entry for LMI households. Underrepresentation of lower-income, lower-credit, and rural participants in community solar programs is not only a phenomenon in Wisconsin: in 2019 the median solar adopter household income nationwide was \$113,000. In the same time period, over 65 percent of solar adopters had credit scores equal or greater to 740 and less than 10 percent had scores lower than 620. Only 14 percent of solar adopters in 2019 lived in a rural household, while rural homes make up about 20 percent of the U.S. population.¹

Through the technical support opportunity offered by the Inclusive Shared Solar Initiative (ISSI), OEI has established the Wisconsin Inclusive Solar Community Offering (WISCO) project, which will navigate the complexities of designing a community solar program that will consistently and significantly relieve the energy burden for LMI households.

The key objectives OEI seeks to accomplish through WISCO are:

- ***Launching at least two community solar gardens (CSGs) in electric cooperative territory with a specific rate structure designed for LMI subscribers.*** With data provided by the Wisconsin Division of Energy Housing and Community Resources (DEHCR), OEI will seek to create a replicable rate structure and model program that can be deployed by other electric cooperatives, as well as Investor-Owned Utilities (IOUs) or municipal utilities, in the state in the future.
- ***Improving access and ease of participation for income-eligible subscribers.*** OEI's partners at DEHCR, administrators of the Wisconsin Home Energy Assistance Program (WHEAP) and the Wisconsin Weatherization Assistance Program (WAP), share data with Community Action Agencies (CAAs) for the automatic qualification of subscribers. (However, subscribers will be allowed to opt out if they choose.) The CAAs will communicate to electric cooperatives which subscribers qualify for benefits (credits from the designated solar array production), so they can be periodically applied to bills.

The project team consists of representatives from OEI and DEHCR, two CAAs (Couleecap and WestCap), and two electric cooperatives (Vernon Electric and Pierce-Pepin). These CAAs are the non-profit implementers of WAP (in some cases WHEAP) who already work hand in hand with

¹ <https://www.renewableenergyworld.com/solar/new-report-sheds-light-on-residential-solar-adoption-in-terms-of-access-and-equity/#gref>

the electric cooperatives to make sure that low-income populations are served through the aforementioned programs.

Inclusive Shared Solar Initiative

WISCO is supported by ISSI, a multi-state partnership coordinated by the National Association of State Energy Officials (NASEO) and the National Energy Assistance Directors Association (NEADA) with the goal of making community solar more accessible to LMI households through innovative partnerships between State Energy Offices, Low Income Home Energy Assistance Program (LIHEAP) Offices, solar providers, utilities, community-based organizations, and other key stakeholders.

With support from the U.S. Department of Energy Solar Energy Technologies Office and guidance from an expert Advisory Group, ISSI provides a flexible framework, inspired by the New York Solar for All program, through which states can explore new, more inclusive, and more affordable models for community solar deployment in underserved communities. In addition to the State Energy Office and DEHCR teams in the state of Wisconsin, teams of State Energy Offices and LIHEAP Offices from Washington, D.C. and Minnesota also participate in ISSI. Key activities to be undertaken by ISSI's state partners include:

- The formation of State Energy Office-LIHEAP Office partnerships focused on LMI community solar deployment;
- Thorough planning and stakeholder engagement to inform strategies to expand LMI access to community solar generation;
- The oversight and build-out of two ISSI community solar pilot projects in each partner state to test new models for expanding LMI access and participation in community solar programs; and
- Dissemination of information, successes, and lessons learned to other states interested in advancing LMI community solar.

To learn more, visit <https://naseo.org/issues/solar/issi>.

Program Goals

The project team's goal for this initiative is to launch at least two CSGs in electric cooperative territory with a specific rate structure designed for LMI subscribers to ensure a cash-flow positive experience. With data provided by its partners in DEHCR, OEI will leverage technical assistance to create a replicable rate structure that could be deployed by IOUs or municipal utilities in the state in the future. The project team may also work with its partners in the Wisconsin Electric Cooperative Association to implement this LMI-targeted rate structure. The project team has chosen to work with electric cooperatives because they are the first electric providers in the state to offer community solar to their members and are not regulated by the Public Service Commission (PSC). The rigorous review process of the PSC (and the full calendar of existing dockets) makes it impractical to pilot this initiative with IOUs or municipal utilities during the

timeline established by ISSI. To support dissemination and amplify the impact of the project, the Wisconsin team will document findings from its effort by developing a model package consisting of the **enrollment mechanism for income-qualified households, outreach strategy, and benefit formula creation**, which could be scalable and replicable in other electric cooperative, municipal, and investor-owned utility areas throughout Wisconsin.

Wisconsin has not previously targeted LMI participants or launched a cohesive community solar program in the past. Therefore, it may be difficult to estimate the level of participation that could be achieved. OEI's goal is to provide LMI subscribers with a cash-flow positive experience. Based on the community selected, capacity of the given array, public benefit funding, and other grant funding or financing, the percentage of LMI subscribers will vary.

The target population for participation are LMI households with incomes up to 60 percent of State Median Income that are qualified to receive benefits through the Wisconsin Home Energy Assistance Program (WHEAP) within the Vernon Electric and Pierce-Pepin Cooperative service territories. Participants of the WHEAP program will be automatically enrolled into the WISCO project, regardless of whether they own or rent their home. Other eligible households in cooperative service territories will be invited to participate by applying for the WHEAP program through community outreach efforts.

In the 2021-2022 benefit year (October 1, 2021 – September 30, 2022), there are currently 737 qualified households enrolled in the WHEAP program in the Vernon Electric Cooperative service territory. From October 2020-September 2021, there were 162 qualified households enrolled in the WHEAP program in the Pierce-Pepin Cooperative service territory. Households may apply throughout the program year and qualified households must reapply each year. Therefore, participation in the WISCO program will vary from year to year, depending on the number of households that qualify for benefits.

Stakeholder Engagement Process

Stakeholder and community engagement has informed the strategies outlined in the plan and will continue to be an important feature of WISCO. To date, the WISCO team's internal planning has been informed by implementation teams at Couleecap, WestCap, WI Office for Energy Innovation, Pierce-Pepin Energy Cooperative, and Vernon Electric Cooperative. The WISCO team has also held calls with solar programs in other states or districts, including New York, Washington D.C., Rhode Island, Minnesota, Colorado, and others.

Moving forward, WISCO will have continued and more targeted opportunities for engagement, particularly to elevate the perspectives and needs of lower-income communities and subscribers. To ensure residents have representation and participation in the development of the WISCO project, Couleecap has partnered with the University of Wisconsin-La Crosse to collect participant insight through a community-informed research project, which will:

1. Provide WISCO stakeholders with insights for the development of an allocation model (monthly, quarterly, semiannually, bulk)
2. Test effectiveness of promotional materials, such as logos and use of specific terminology
3. Assess interest in participating in educational events (such as workshops and energy audits) on energy efficiency and conservation to receive additive benefits
4. Test messaging to advance adoption of renewable energy, energy savings programs/practices (weatherization), and participation in other Couleecap programs

Insights will be gathered and analyzed through three project phases:

Phase 1: Virtual Research and Investigative Marketing Report

Investigators Dr. Justine Egner and Abby Lemeke will gather and analyze data from solar energy programs that provide low-cost energy to households in the United States. They will examine online and offline media, literature, research studies, news reports, videos, and branding elements, and develop recommendations to inform the WISCO project. As stated in a report provided by Dr. Egner and Ms. Lemeke, "Through analyzing 'community solar gardens' that are currently being piloted in other states, we can garner insights to contribute to the establishment and creation of future solar energy projects. Namely, we can examine the work other community solar projects do and their design decisions in ways that can benefit WISCO stakeholders and members/consumers."²

Phase 2: Individual Interviews

In this phase, Dr. Egner will conduct interviews with residents within the Vernon Electric Cooperative service area who currently receive energy assistance benefits. This represents the primary customer of the future WISCO solar benefit. At least ten interviews will be conducted with residents who have been randomly selected by Couleecap and who have agreed to participate.

The purpose of the interviews is to gauge LMI customer thoughts and perceptions of energy sources and solar energy, experiences with household energy costs and bill statements, challenges in paying for energy, satisfaction in services, awareness of energy assistance programs, and interest in energy conservation programs.

Each interviewee will receive a \$25 gift card to a local business in appreciation for their participation.

Phase 3: Focus Groups

In the final phase of the community-informed research project, the university will host five to ten focus groups of approximately five participants each. Couleecap will randomly select and invite

² Egner, J., Lemeke, A. *WISCO: Virtual Research and Investigative Marketing Report*. On file at Couleecap.

WISCO-targeted participants to the focus groups, but those selected will be a different group than people selected in Phase 2.

In the focus groups, participants will be presented with a combination of visual and textual cues to react to. Visual cues may include logo and other branding elements. Text may include messaging, project names, or educational materials. Participants will also be asked questions about and provide feedback on benefit allocations, how benefits are presented on energy bills, and other details specific to the WISCO project.

Each interviewee will receive a \$25 gift card to a local business in appreciation for their participation.

The insights garnered from all three phases of the WISCO community-informed research project will guide program benefit design, branding, messaging, and community outreach efforts.

Wisconsin's Community Solar Market Landscape

Wisconsin's electric cooperatives (co-ops) were the first in the state to offer "community solar" to their member owners in 2014. Co-ops have offered a similar rate structure across the state, the arrays are owned and maintained by the co-ops, and members pay an upfront fee for the panels or generation units (up to 100 percent of their residential use) and receive a credit on their bill equal to the cost of displaced grid energy produced by the panels. Many of the co-op projects in Wisconsin were a part of the "sCOOP Initiative" "Solar Cooperative Community Projects" established in 2013 by the National Rural Utilities Cooperative Finance Corporation, the National Renewables Cooperative Organization (NRCO), and the Federated Rural Electric Insurance Exchange.

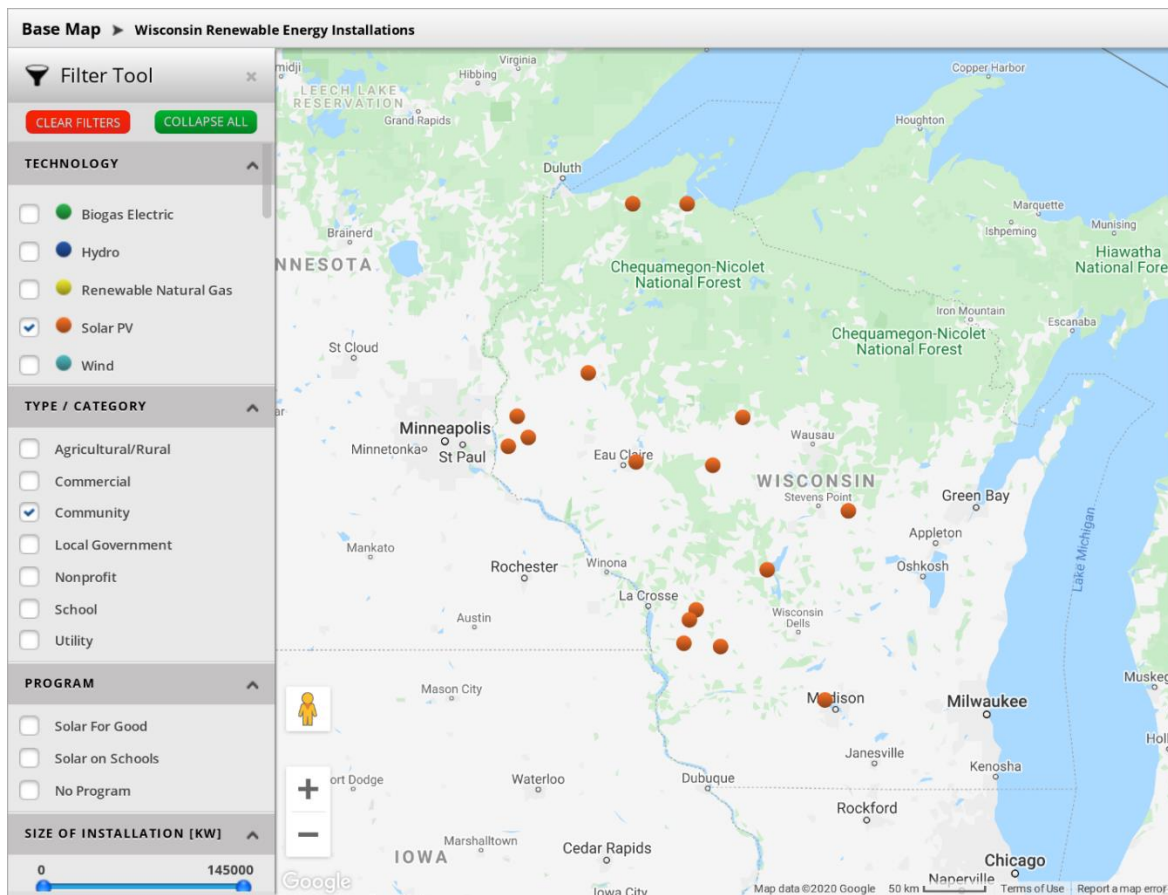
Several Wisconsin utilities have received Commission approval to implement community solar programs. Northern States Power Company–Wisconsin (NSPW) received approval from the Commission to implement a community solar program on May 27, 2015, in docket 4220-TE-101. On August 21, 2015, the Commission approved the applications of both New Richmond Municipal Electric Utility (New Richmond) and River Falls Municipal Utility (River Falls) in docket 5110-TE-102. Finally, Wisconsin Power and Light Company (WP&L) received approval from the Commission to implement a community solar program in docket 6680-TE-104 on July 19, 2019.

On April 1, 2016, the Commission approved of Madison Gas and Electric Company's (MGE) community solar pilot project in docket 3270-TE-101. After subscriptions for the 500 kilowatt (kW) pilot quickly exceeded capacity, MGE applied to the Commission to expand up to 4 megawatts (MW) and modify the program and rate structure in docket 3270-TE-104. MGE received approval from the Commission on July 30, 2019. MGE's community solar program, also referred to as Shared Solar, allows residential and commercial customers to pay a small upfront fee, and then lock into a fixed charge per kWh over the course of the contract commensurate with the cost of the solar facilities and service. Instead of the customer paying the energy charge

in its rate class, the participating customer pays the community solar rate for the amount of kWh production from the solar facility under subscription.

The latest CSG proposal was proposed by Superior Water, Light, And Power (SWL&P) and approved by the Commission in 2020. There is no support for LMI or other target participants in any of the current programs. All of the current programs are administered by the utility, arrays are owned and maintained by the utility, and the cost of participation presents a significant barrier. All of the municipal and IOU community solar programs are compared in Figure 1 of the Appendix.³

In short, fewer than 20 MW of community solar are installed and operational in Wisconsin currently. The demographics of program participants are not collected, but publicly available information regarding cost of entry indicates that participants are not low-income. Community Solar projects are found in all but the largest IOU territory and are most prevalent in co-op territories. The map below by RENEW Wisconsin, a non-profit dedicated to accelerating renewable energy development in the state, highlights the location of community solar projects to date in Wisconsin.



³ Comparison of Community solar programs content from <https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=391629> 5280-TE-100

Strategies for Expanding LMI Access to Community Solar Gardens

Wisconsin's unique market landscape and the stakeholder engagements conducted by the project team have shed light on key strategies that can help expand LMI access to CSG projects and programs around the state:

Strategy 1: Develop a unique rate structure that can sustainably support LMI-anchored Community Solar Gardens in the state

The project team's goal is to provide virtual net metering for the LMI households qualified to receive benefits. Ultimately, the Wisconsin Electric Cooperative partners voluntarily invested in this CSG and have agreed to implement a targeted rate structure for LMI households.

Strategy 2: Reduce/eliminate upfront fees for LMI customers to subscribe to projects/auto-enroll LMI customers

Building on the success of the New York Solar For All program's use of auto-enrollment of LMI customers, the project team will auto-enroll LMI customers in the utility service territories of the pilot projects. With assistance from the team at DEHCR, the WHEAP application for the two pilot electric cooperatives will include an option for the applicant to opt out of receiving benefits; the default will be to be auto-enrolled. Once the frequency of payments from the output of the CSGs is determined, outreach materials will be prepared. The project teams' model of using federal State Energy Program (SEP) funds as a proxy for the upfront payment of the LMI community should result in a larger net benefit to the subscriber. The initial payment will be provided via the Community Action Agencies to the Electric Cooperatives (facilitated via a three-way agreement including OEI) with a detailed scope of work describing the benefit potential.

Virtual net metering will be used for the pool of LMI customers.

Strategy 3: Establish an innovative payment system to ensure all parties are fairly compensated

The WISCO team will make key adjustments to WHEAP benefits and payment processes to open access and ensure program benefits flow to income-eligible customers. While this strategy is likely to be further refined based on the input gleaned from the stakeholder engagement process described earlier in this plan, the initial vision for the flow of benefits for WHEAP participants receiving WISCO benefits is:

- i. Household applies for WHEAP (in Vernon Electric and Pierce-Pepin Electric Cooperative territory) and does not opt out of receiving local energy benefits from CSG (name and branding to be determined via focus groups).

- ii. Community Action Agency (Couleecap or WestCap) receives list of applicants in co-op territory and transmits list to co-ops. Benefits are applied to household's bill periodically for 12 months.
- iii. Household re-applies for WHEAP after 12 months and is automatically re-enrolled.

Partner Roles and Next Steps

To execute the strategies described above, the WISCO team includes multiple important partners tasked with developing analyses, making program and policy adjustments, engaging stakeholders, and overseeing the build-out of the ISSI pilot projects, as well as a broader stakeholder network that will be tapped to inform implementation throughout the course of the project.

A breakdown of roles and responsibilities is synthesized in the table below:

Wisconsin Office of Energy Innovation	<ul style="list-style-type: none"> • Oversee and guide work necessary to accomplish goals of project in accordance with project timeline. • Create stakeholder awareness of project and goals, build appropriate project team. • Develop, in conjunction with other team members, the processes needed to offer this model(s). • Work with utilities, CAP agencies, and other partners to facilitate the use of virtual net metering for CSG subscribers and address processing of kWh credits on utility billing system. • Seek/build alignment and coordination between ISSI pilot projects and any current solar PV / CSG undertakings planned by other state agencies.
CAP Agencies (Couleecap and WestCap)	<ul style="list-style-type: none"> • Oversee community-informed research project to develop visual and messaging elements to use in educational and marketing materials. • Develop educational materials and processes to reach and educate potential program participants. • Qualify and subscribe LMI customers into the pilot projects. • Pass through money to the electric cooperatives to secure a bulk-subscriber pool on behalf of LMI residents of the electric cooperative territory. • Provide marketing and outreach efforts to LMI customers taking part in the pilot programs. • Collect and analyze data on LMI household participation and program impact. Report data to OEI. • Develop recommendations for replicating program to other service territories.
Electric Cooperatives	<ul style="list-style-type: none"> • Work with solar developers to interconnect, operate, and maintain the solar arrays. • Analyze innovative rate options. • Conduct engineering analyses and system impact studies. • Site the solar facilities. • Finalize required contracts and agreements.
University of Wisconsin	<ul style="list-style-type: none"> • Conduct focus group calls with LMI customers in utility service territories. • Develop recommendations to CAP agencies for the development of marketing and educational programming. • Support marketing efforts through focus groups designed to identify branding, etc. that supports project goals.

Appendix

Figure 1. Comparison of CSG projects across municipal and investor-owned utilities in Wisconsin

Component	MGE	MGE	NSPW	River Falls (WPPI)	WPL	SWLP
Docket	3270-TE-101		4220-TE-101	5110-TE-102	6680-TE-104	5820-TE-100
Tariff Reference	Cs-1	Cs-1	Schedule VSE-1	VCS-1	Schedule CSP-1	TBD
Program Name	Shared Solar	Shared Solar 2.0	Solar*Connect	Community Solar Pilot	Community Solar	Superior Solar
Class Availability	Residential only	Res and Commerical	All classes	All classes	All classes	All classes
Program Cap	500 kW pilot	4 MW total (includes 500 kW from pilot)	3 MW total, individual locations no more than 1 MW each	1 MW	6 MW	470 kW
Location	Middleton Municipal Operations Center	Middleton Moray Field	Multiple: Eau Claire, Cashton, and Ashland (later in 2019)		TBD	Superior
Other Description			Partial refund for subscription cancellation allowed per schedule			\$122.04 res fee + 3 Options: Op. 1 (Pay upfront) Op. 2 (Monthly charge) Op. 3 (locked-in rate)
Upfront Subscription Fee	\$47.25/250 W; i.e. \$0.189/W		\$1600/kW (less if after Year 1); i.e. \$1.60/W	\$1800/kW (less if after Year 1); i.e. \$1.80/W	TBD, \$1200/kW estimate in cover letter; \$1.20/W	Option 1: \$2318/kW Option 2: N/A Option 3: N/A
Increments?					Must be purchased in 250 W increments	1 kW increments
On-going Costs	12.8 cents/kWh replaces current Rg-1 rate per production	10.1 cents: (7.6 + 2.5 "grid charge")	Regular retail rates regardless of participation	Regular retail rates regardless of participation	Regular retail rates regardless of participation	Option 1: N/A Op. 2: \$16.25/kWh/month Option 3: \$0.143/kWh
Applicable Credits	N/A	N/A	7.4 cents/kWh for small "Class 1" and 6.9 cents/kWh for larger "Class 2"	7.6 cents/kWh (7.8 cents/kWh if customer doesn't "buy" RECs)	6.3 cents/kWh for residential, 5.6 cents/kWh for commercial	Customer class energy charge per kWh of prod; i.e. Res = \$0.115/kWh
Res Rate reference	\$0.10472/kWh summer and \$0.09355/kWh winter	\$0.10472/kWh summer and \$0.09355/kWh winter		Current Rg-1 rate = \$0.0977/kWh	\$0.11663/kWh	\$0.115/kWh
Contract Length	25 years	25 years		20 years	20 years	25 years
Individual Participant Cap	50% of annual energy use or 3 kW		100% of annual energy use (excess monthly production can be carried forward), no more than 40% of individual community solar location or 400 kW/customer	10 kW	100% of annual energy use (excess monthly production can be carried forward), no more than 60% of individual community solar location	117.50 kW
Program fully subscribed?	Yes	Not in-service yet	Almost, some subscriptions left	not fully subscribed- City bought remaining shares, can offer to new participants at pro-rated cost	N/A	Proposal phase