

Community Solar in Wisconsin

Community Solar in Wisconsin – Where are we at?

By Bill Bailey, Cheq Bay Renewables

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On August 31, 2021 Xcel Energy opened up its community solar garden in Ashland, Wisconsin for a tour to its largest founding-member of the garden, Bayfield County. Many Bayfield County elected board members attended to review the large investment the county had made in the *offsite*¹ renewable energy generating facility. The county had purchased 19.3% of the output from the solar arrays, 190kW out of 984kW, or enough energy to power 30 average Wisconsin homes. Solar generation from the site had saved the county \$16,500 in electric bills during 2020 alone.



Bayfield County meets with Xcel Energy August 31, 2021

Since beginning operation in August 2018, the solar facility has generated over 1,000,000 *kWh* per year and is owned, operated and maintained not by Excel Energy, but by One Energy Renewables, a private solar developer based in Seattle, Washington. One of the first questions from the county board was, “Is Xcel planning on building more community solar gardens?”

¹ See Appendix C for definition of words in italics

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Short answer unfortunately is, “No”.

Wisconsin’s community solar history

Community solar allows a customer of a utility to purchase offsite solar electricity by making an upfront investment and then getting credit on their monthly electric bill based on electricity generated. The credit is based on number of panels, electricity generated and agreed upon rate the utility is willing to pay.

The first community solar garden (305 KW, approximately 1000 panels) in Wisconsin was built in Vernon County in 2014 by the Vernon Electric Cooperative at its headquarters near Westby, WI. Bayfield Electric Cooperative took note and began its community solar process a few months later, completing its community solar installation in 2016, also a 300kW AC system.

Xcel Energy, an investment owned utility (IOU) and regulated by Wisconsin’s Public Service Commission (WPSC), went through a lengthy process to get 3mW of community solar approved by the Commission. It was built in three separate 1mW facilities, the last of the three being commissioned in Ashland in August 2018.

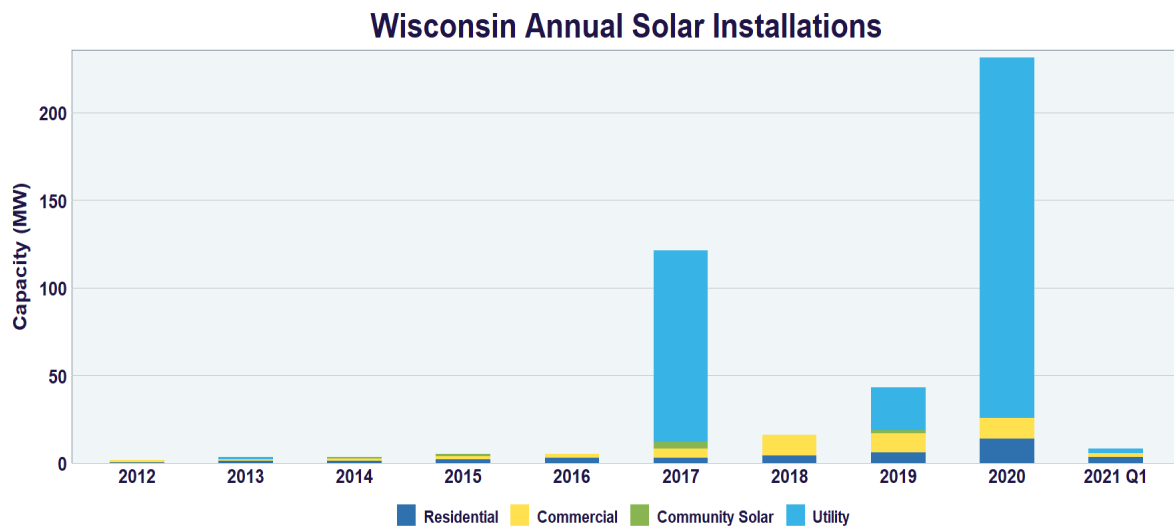
Bayfield Electric’s community solar facility was initially planned to be 250kW but within a few months of the initial offering, the demand outstripped the size which was increased to 300kW. Nearly \$1M was raised in a few months to fully fund the installation.

Xcel’s community solar had similar results with most the of area municipalities buying up the shares and the remainder from Xcel’s local businesses and residential customers. The garden was sold out within 12 months.

With such local demand, community solar should be growing throughout the state. That is not the case. The graph below shows all Community Solar as a fraction of a percent as it relates to all solar installations in Wisconsin². Note the green community solar portion of the annual totals:

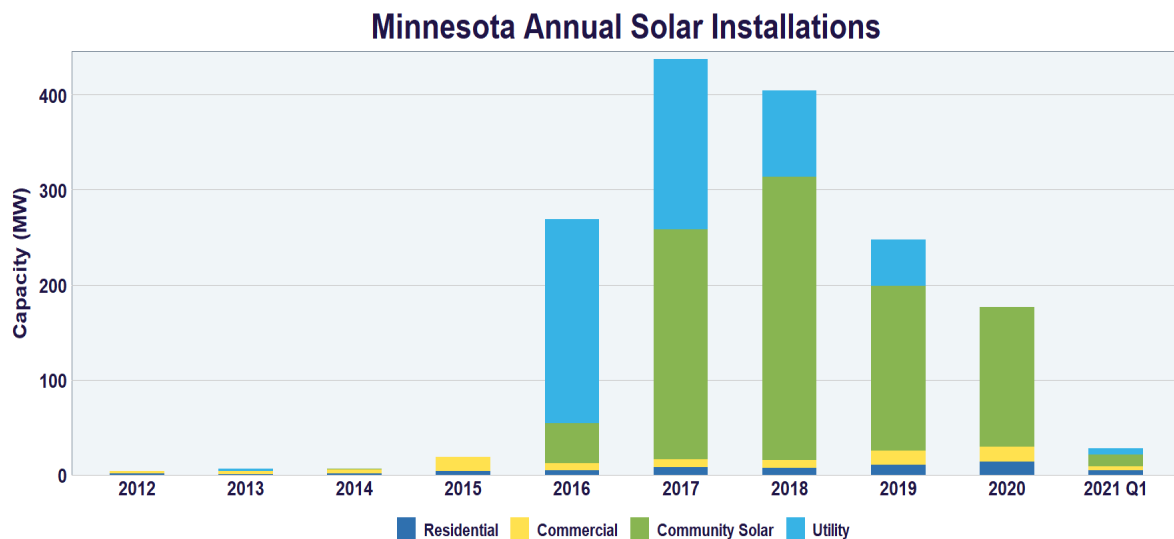
² SEIA [Wisconsin.pdf \(seia.org\)](http://seia.org/Wisconsin.pdf)

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What? You can't find the green?

Now look at Minnesota's solar installations³, and again look for the green community solar portion and look at the scale on the "Y" axis compared to Wisconsin's:



Minnesota has over 800 mW of community solar installed throughout the state while Wisconsin has about 6mW (so little you cannot see it on the chart despite the scale difference)! Is it important? If so, what is going wrong? And what are we doing about it?

Why is Community Solar Important?

Community solar gives people more options and therefore more choice in terms of their desire to support alternative energy and mitigate global climate change trends. Community solar, by itself, does

³ SEIA [Minnesota.pdf \(seia.org\)](#)

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not solve social justice, or as it is referred to in the energy field *energy democracy*, but it goes a long way to allow more participation in clean energy. Renters can participate, for example, or people who don't have direct sunlight on their premises. Community solar can also be set up to assist low-income customers through subsidies; assistance that might be provided anyway through energy assistance or other programs.

The *Value of Solar* is also directly tied to community solar. Electricity that is generated by solar is priced, ideally, by its location, the time of day, the time of year, who uses it, even the environmental and social benefits that it brings. Minnesota led the country in 2013 with its formula for the *Value of Solar* which includes all these variables⁴. Electricity generated at a distant power plant is worth less than electricity that is generated from renewable sources and consumed within a local distribution network. Local renewable generation has no fuel cost, no transmission cost, less wear and tear on distribution substations and other infrastructure, and reduces health costs⁵. In fact, in an unprecedented show of unity, on September 6th, 2021, editors from 220 leading medical journals jointly released an urgent plea to the world to address the health crisis caused from climate change⁶. The energy from community solar is consumed within the distribution system from which it is generated. Community solar and other local *distributed generation* assets, like rooftop solar, also increase resiliency for the grid at large, another value-added feature that is hard to calculate, but real all the same.

Community solar and rooftop solar couple well with *utility-scale* solar generation. Vibrant Clean Energy⁷ found in a December 2020 study that “*Developing 247 GW of local rooftop and community solar and 160 GW of local energy storage is the most cost-effective way for the United States to transition to a clean energy system by 2050, while saving consumers up to \$473 billion on electricity*”⁸. To reach the Intergovernmental Panel on Climate Change’s carbon reduction goals⁹ we need local solar generation, including community solar, in addition to larger and more distance utility-sized renewable generators.

What went wrong? Why are Minnesota’s Community Solar outcomes so different from Wisconsin’s?

In 2013 Minnesota passed a landmark energy bill that promoted solar energy¹⁰. It included a 1.5% solar energy requirement for public utilities to be achieved by 2020. It also dictated the *Value of solar* as mentioned earlier and outlined a community solar program specifically for Xcel Energy who provided electricity for about half the state. The community solar program had no limits or caps. Whatever a solar developer could bring to market, Xcel had to interconnect to the grid. That’s why Minnesota has so much community solar, the legislature demanded it and the solar economics were there. In other words, Minnesota set the energy market free to meet community demand. Wisconsin enacted ground-

⁴ Appendix A: Minnesota’s Value of Solar

⁵ [Saving Lives and Money: The Potential of Solar to Replace Coal | Michigan Tech News \(mtu.edu\)](#)

⁶ [Call for emergency action to limit global temperature increases, restore biodiversity, and protect health | The BMJ](#)

⁷ [About Us – Vibrant Clean Energy](#)

⁸ [LocalSolarRoadmapPressRelease_FINAL.pdf \(vibrantcleanenergy.com\)](#)

⁹ [IPCC — Intergovernmental Panel on Climate Change](#)

¹⁰ [2013 Solar Energy Legislation in Minnesota \(state.mn.us\)](#)

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breaking, first-in-the-nation renewable energy portfolio standards in 2005¹¹, a decade before the utilities met the deadline in 2015, but since then have not progressed further.

The Problem

Community solar as a business model conflicts with the traditional investment-owned utility *monopoly* common in the United States. Community solar installations are paid for by the subscribers and the Federal tax incentives captured by the solar developer, a much different model. Investment owned utilities make their money by building infrastructure - power plants, transmission lines, substations, etc. - and get a guaranteed return on that investment. In contrast there is no profit in community solar for the utility. In Wisconsin, the utilities have learned their best course of action is to build large-scale solar installations that they own, just as if it was a coal plant or a transmission line. Once approved by the Wisconsin Public Service Commission (WPSC), they are guaranteed their return on investment. There is nothing inherently wrong with *utility-scale* solar, but as was found in Minnesota, freeing the market to meet community demands leads to a markedly different result with 160 times more community solar installations compared to Wisconsin. The bottom line is we need both utility-scale and community solar/rooftop solar as identified in Vibrant Clean Energy's analysis.

How can Wisconsin solve this problem?

Wisconsin needs its legislature to pass community solar legislation. The Wisconsin Public Service Commission (WPSC) is currently studying *parallel generation* which includes evaluating the *value of solar* and effects of *distributed generation* assets, like community solar, on the grid. Efforts need to be made to create utility incentive to embrace community solar with direction and assistance from the Wisconsin legislature and PSC.

In July 2021, two WI state republicans introduced a bill that would authorize community solar to be interconnected to IOU distribution systems throughout the state.¹² The bill, which would become SB 490 limits solar capacity to under 5mW for each installation and puts a sunset in place of 2030 in addition to requiring zoning changes to be approved by 2/3 of a local governing body. The bill is opposed by the utilities, unions and democrats. The bill is supported by The Wisconsin Community Solar Economic Alliance (WICSEA)¹³ whose founding members are RENEW Wisconsin, Organic Valley, Associated Builders and Contractors of Wisconsin, Advocate Aurora Health, Wisconsin Conservative Energy Forum, Wisconsin Grocers Association, Land and Liberty Coalition of Wisconsin, and the Coalition for Community Solar Access. Cheq Bay Renewables has also signed on to this coalition. The bill ultimately failed to pass in either the senate or assembly committees.

Utility-scale solar uses union labor to build their facilities. Smaller solar installations generally do not. The unions claim it is union vs. non-union labor, but John Farrell, co-director of the Institute for Local

¹¹ [PSC RPS Compliance \(wi.gov\)](https://www.wisconsin.gov/PSC/Compliance)

¹² [\(21-1902/2\) \(cheqbayrenewables.org\)](https://cheqbayrenewables.org/21-1902/2/)

¹³ [Wisconsin for Community Solar \(wi4communitysolar.com\)](https://wi4communitysolar.com/)

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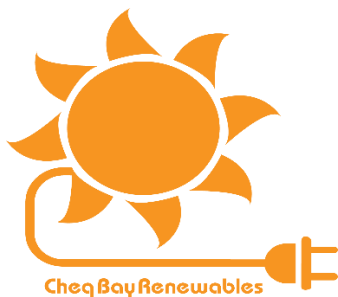
Self Reliance frames the argument in another way¹⁴. Farrell thinks the argument should be union labor vs. small business. Just as Wisconsin needs utility-scale solar and small distribution-level solar, we need union labor for large projects and small businesses that will thrive with programs like Minnesota's community solar. Small businesses that thrive often become large businesses and become an opportunity for unionization. Minnesota's community solar law gives us an excellent working example of thriving small businesses, creating many jobs and not suffering safety or regulatory concerns as suggested by the unions.

..and then there are the democrats. Why would the democrats not support the republican community solar bill? I personally talked with both my state senate and assembly representatives (who are democrats) and their staffs. They said it was a "bad bill, the utilities and unions are against it". OK, I understand where the IOUs are coming from, so we sat down and went line-by-line as to why the unions oppose it. Much of their information is based on speculation and fear. They spin the narrative for their own self-interest (unfortunately like most entities do). Appendix B contains the IBEW Union's official response to the bill, with embedded arguments to the contrary. Read it for yourself. The democrats told me they would introduce a better bill in the fall of 2021. They did introduce a package of 22 bills called "Forward on Climate", but it did not contain community solar legislation, and none of the proposed bills were adopted in a republican controlled senate and assembly.

We are breathing the smoke from the fires; our birch trees are dying from increased heat and drought and recently we got a small reprieve from the dry weather - we got 1.6 inches of rain in 20 minutes. Remember when it took all day to get that much? Yes, the climate crisis is part of all this too and is the driver for immediate change. Community solar is one piece of the larger puzzle, but we can't solve the problem without all the pieces fitting together and Bayfield County couldn't have achieved 100% carbon-free electricity¹⁵ without Xcel Energy's community solar garden. What about the other municipalities, school districts and ordinary citizens that want local clean energy but it won't fit on their rooftop? Wisconsin needs access to expanded community solar and we need to let all our representatives know that, based on the facts and science, not fear, speculation or spin.



William (Bill) Bailey
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Updated October 16, 2022



¹⁴ [Energy Democracy - Featuring John Farrell | Rise Up Midwest](#)

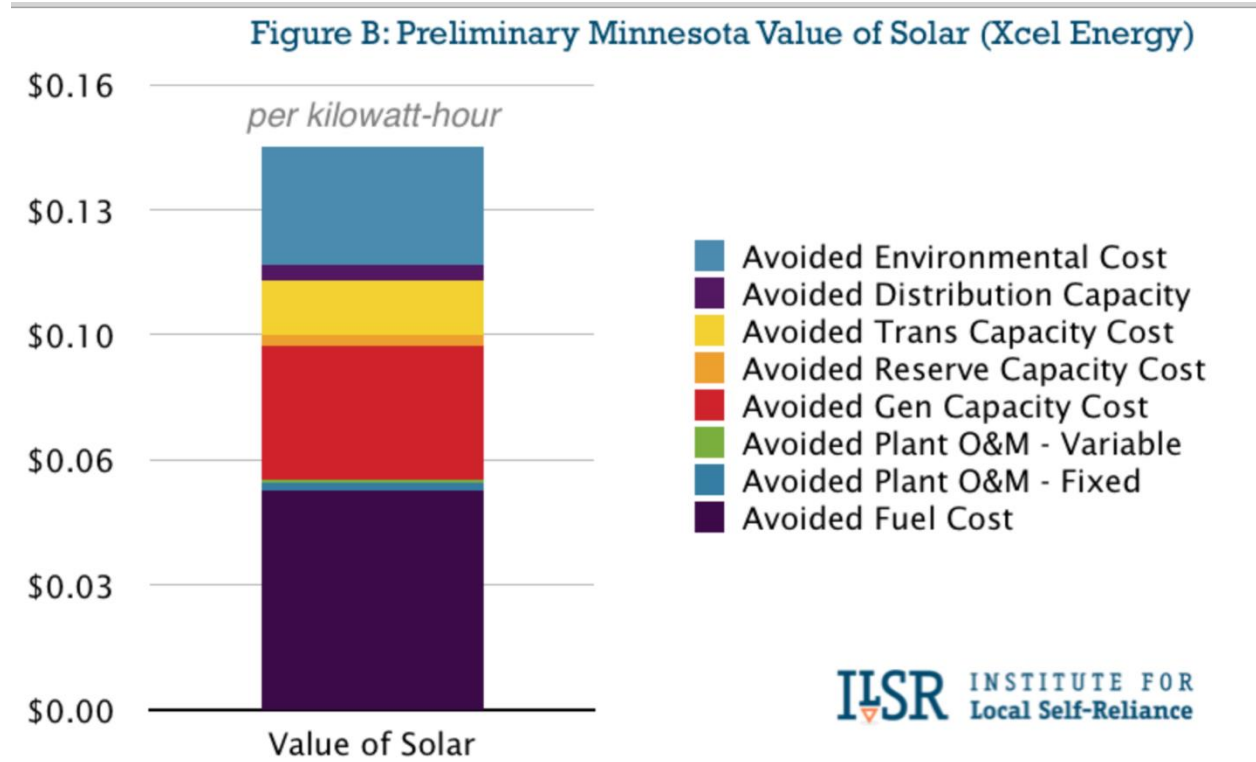
¹⁵ [gov. evers commendation 2020.pdf \(cheqbayrenewables.org\)](#)

Community Solar in Wisconsin

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Appendix A – Minnesota’s Value of Solar



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Appendix B IBEW Response to community solar bill with embedded remarks by Cheq Bay Renewables (in red)



TO: INTERESTED WISCONSIN
LEGISLATORS

FROM: IBEW STATE CONFERENCE

DATE: JULY 15, 2021

RE: PLEASE DO NOT COSPONSOR LRB 3866/2 (SB 490)

The IBEW State Conference comprised of construction and utility workers, stands united against LRB 3866/2 which would authorize the creation of Community Solar Programs. While the concept sounds friendly enough, it is not. Energy production and sale is **regulated as a utility** for good reason - because it is a necessity and requirement for everyone, every day of our lives. **This bill would create a costly and dangerous exception.** Electric cooperatives seem to work just fine without this regulation and operate in a large portion of the state, every day for all their members. Electricity is a necessity; excessive regulation is not, nor should it be used as an excuse to prohibit clean energy production. Minnesota is also an example of a regulated state that allows community solar and a living example of not a dangerous situation.

This bill would let other producers and sellers enter this market - not regulated as utilities - but with **mandates upon existing utilities to subsidize these programs.** No subsidies are being requested. The IOU can recoup all expenses making it revenue neutral for them. Other producers and sellers have already entered the market with no detrimental effect, and this will be expanded as the FERC's rule 2222 takes effect over the next year or so. This scheme would **drive up costs to consumers**, would deregulate what should always be a highly regulated market, and further hurt Wisconsin workers. **There is no basis for these claims.** Solar would very likely reduce costs, would not require deregulation of the IOUs, and would create jobs. Small businesses would thrive in this environment as evidenced in Minnesota's community solar program.

It is no secret that many smaller scale solar producers are **hiring cheap, low-trained labor.** There is no basis for this either. A 1-5mW solar installation is large enough that the installation contractor can afford to pay good wages and hire well-trained quality employees. This bill further incentivizes that practice and undermines our strong, well trained family supporting jobs in both construction and maintenance of

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energy facilities. **It will not undermine trained family supporting jobs, it will create them.**

Like so many proposals geared at incentivizing solar power, this bill would have a disparate impact on utility rate payers, benefits only those who can afford to invest in solar panels and hardware, and would no doubt hurt working families in Wisconsin by undercutting what should be good paying family supporting jobs as we transition into a greater use of renewable forms of energy. **This would have no impact on utility rate payers as all costs incurred by the utility are recovered in the rate structure. It is revenue neutral to the utility. It would benefit all of WI residents with reduced emission from clean energy. It would let people participate in renewable energy that do not have a “solar window”, especially people who live in urban areas. It will allow municipalities to participate saving taxpayers money. It will not undercut good paying jobs.**

We continue to work with our industry partners to transform towards a sustainable future, and at the same time, make sure that working women and men and skilled trades are not left behind. We ask that you do the same and please oppose LRB 3866/2.

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Appendix C - A few Definitions

Distributed generation – any generation resource that is within the local electric grid as opposed to the large centralized power plant that transports energy over large distances.

Energy democracy – the merger of the green energy transition and the social justice movement. Local energy ownership, increased local resilience, public participation and the decentralization of energy generation facilities all play a role in the decarbonization of the energy sector.

GW – gigawatts or 1000 megawatts or 1,000,000 kilowatts or 1,000,000,000 watts. Gigawatts must have sounded better than billionwatts.

kW – kilowatts, 1000 watts or the amount of power at a given instant in time.

kWh – kilowatt-hours, the common unit of measurement of electricity, that is, the amount of 1000 watts of electricity used in an hour.

Monopoly utility – Wisconsin and Minnesota are both states that have regulated utilities guarantying those utilities complete control over their territories. They have a monopoly within their territory and no other utility can sell electricity within their jurisdiction. They are regulated in Wisconsin by the Public Service Commission which assures the public of fair prices and treatment (theoretically). There are several other layers of oversight.

Offsite – a renewable generation facility that is not located on a site where the energy is used.

Parallel generation – A generation facility that operates in tandem to the electric grid. It usually refers to a renewable energy resource like solar photovoltaics or a wind generator.

Utility-scale – utilities build things in hundreds of megawatts (1000 kilowatts or one million watts). A utility-scale solar installation might be 200-350 megawatts as opposed to Ashland's community solar garden which is 1 megawatt or a home installation which is typically 6-8 kilowatts.

Value of Solar – the value of the solar energy, usually expressed in cents per kilowatt-hour, exported to the grid from a solar photovoltaic installation. It should be based on the location and time when it is exported. Other factors should be considered, like environmental or social benefits, although they are harder to quantify.