

Sugar Creek Lutheran Church Solar Energy Project

Process Sugar Creek Lutheran used in implementing our solar energy project.

1. Step one is to make your building as energy efficient as possible. For us that meant re-lamping the entire church with LED and energy efficient fluorescents, insulating our office and fellowship hall areas and replacing 40-year-old windows in the sanctuary and fellowship hall. There are at least two reasons for this first step. Environmentally and fiscally it is the responsible thing to do and shows the consideration of a solar array is part of your congregation's overall mission. Secondly, it gives you a truer picture of your congregation's energy usage when you start to determine the size of the solar array you will be installing. The advice we received is that you want to size your solar array to meet between 95% - 105% of your average daily energy consumption. Allowing for efficiency ratings, standard panel ratings and solar panel degradation over 25-30 years our 19.6 kw is 114% of our current average daily energy consumption. Please note all of the this work started 5 – 6 years before solar energy was even considered.
2. Gauge the desire and willingness of the congregation to move forward with a solar energy project. Considerations include current financial stability and ability, political climate of both your geographic area and congregation and your congregation's commitment to environmental stewardship as part of its mission and identity. (May 2023)
3. Property committee did initial work of possible locations i.e. ground mount versus roof.
4. Engage vendors to submit bids based on current electrical usage and location of arrays. Vendors will need access to one year's worth of electrical bills and usage from current electrical company.
5. Once the bids were received we narrowed down three companies to interview and then made our final proposal to the congregation. February 2024
6. See proposal in appendix
7. After approval of proposal to congregation and their positive vote fund raising began. We gave ourselves two months to raise \$40,000 and within 6 weeks all of the funds were donated. We did not do pledges or giving over a specified time period. All funds needed to be in hand before project could proceed.
8. Signed contract with our Solar Energy contractor, Adams Solar for a 19.6 KW Solar Array consisting of 36 panels, June 2024.

9. After signing with Adams Electric, they prepared a detailed submittal package, including equipment specs, system designs and site plans. Sugar Creek Lutheran then submitted these with our application to WE Energies, our electricity utility, for approval. This was a necessary 10-week process for interconnecting our customer-owned solar power system to the power grid.
10. Applied for grants with Solar For Good, Focus on Energy Wisconsin and Hammond Climate Solutions Foundation Solar Moonshot Program.
11. Received Grant from Solar for Good for ½ of Solar Panels
12. Received Grant from Hammond Climate Solutions Foundation Solar Moonshot Program for \$25,000.
13. Our county zoning allowed for solar panel arrays of 12 KW or less without a Zoning conditional use permit. Because our system is larger than that we were required to first get the local Town board approval, then County Zoning Agency approval for a Conditional Use Permit to install ground based solar panels for a 19.5 Kw system. This process took 2 months. After obtaining the zoning Condition Use Permit we applied for and provided data sheets and installation drawings to obtain all of the necessary township and county building permits.
14. Groundbreaking Ceremony July 7, 2024
15. Construction and Work began July 2024
16. Commissioning of Solar Energy Array with We energies September 17, 2024
17. Began process of applying for Inflation Reduction Act Funds.

Appendix

Sugar Creek Lutheran Church Solar Energy Proposal

Originally Presented February 2024 (Updates October 2024)

The Proposal

That Sugar Creek Lutheran Church engage a vendor to install and supply the congregation with a Solar Energy system to meet the current electrical needs of the congregation. Furthermore, the contract with the vendor and install of the system will not occur until \$40,000 is donated/fund raised towards the project.

Why Solar and Why Now?

In the past 8 years the congregation has made a considerable effort to reduce its energy consumption through various energy efficiency upgrades. LED lighting in the sanctuary, upgraded florescent lighting throughout the building, insulation of the office and fellowship hall areas and new energy efficient windows in the fellowship hall and main sanctuary have all been completed. With these efficiencies completed the next logical step is to explore the possibility of meeting our energy needs through alternative means.

Sugar Creek Lutheran is at a moment in her history when it can pay forward to the next generation and supply now the current and future electrical needs and costs of the congregation. Sugar Creek Congregation has applied for and received a grant from RENEW Wisconsin's Solar for Good initiative that will pay for ½ of the solar panels needed for the proposed system. The Federal Government's Inflation Reduction Act will pay 30% of the total cost of a non-profit's solar power system. Focus on Energy is offering a \$2500 reimbursement for new solar energy projects. All of these cost reduction opportunities are new and made the research into obtaining a solar energy system more cost beneficial.

In our 175th year of life as a congregation and because of the generosity of our congregation we have the opportunity to provide for the electrical needs of Sugar Creek until we celebrate our 200th anniversary.

Results of our Solar Energy Investigation

Inflation Reduction Act

The Inflation Reduction Act of 2023 has an important provision related to solar for non-profits. It allows non-profit entities to receive cash payment/reimbursement. Previous incentives were only tax reductions. This new provision will allow nonprofit organizations, private nonprofit and public schools, faith-based organizations, local and state governments, tribal governments, and rural electric cooperatives to receive cash payments.

These projects can earn additional credits:

10% for meeting domestic content specifications. Solar power projects that use domestic content and are eligible for the full 30% tax credit can increase their tax credit by an additional 10% for a 40% total reduction. To qualify for this bonus, the entity must certify that any steel and iron or any manufactured product that is a component of the facility was produced in the United States. We are asking our vendors to be aware of these deductions when present their final proposals.

Solar for Good – Renew Wisconsin and Hammond Climate Solution Solar Moonshot Program Grants

RENEW Wisconsin's Solar for Good initiative fosters the expansion of solar power among mission-based nonprofits and houses of worship in Wisconsin. RENEW Wisconsin administers solar panel donations through the Couillard Solar Foundation. Nonprofits can be awarded up to 50% of the panels required for their solar project, based on system size.

Hammond Climate Solution Solar Moonshot program provides clean energy to nonprofits making a difference. The Solar Moonshot Program helps nonprofit organizations across the United States afford the switch to clean energy. Grants up to \$25,000 are typically awarded, with grant amounts dependent on various factors, including the organization's need for funding. Grant priority is given to solar projects that have additional funding sources and community support. Through the efforts and work of Erv Schlepp on behalf of the property committee and church council Sugar Creek Lutheran applied for and received a Solar For Good Grant and a Solar Moonshot grant. Both of these grants needed to be used within the 2024 calendar year or be renewed with appropriate documentation. They also carried with them specific criteria that needed to be met during the process and after installation.

We Energies

Sugar Creek Lutheran Church is a We Energies Customer. Our current purchase rate is \$0.16/kilowatt-hour(KW). When a We Energies customer installs a solar energy system and uses more electricity from the grid than their solar system produces during a monthly billing period, they get a bill for the difference. If the customer's system produces more solar energy than their grid usage, We Energies multiplies the monthly net excess by the Buy-Back Rate. Any net excess power is purchased at the end day of the customer's billing period. The current buyback rate is \$.042/KW.(as of Feb.2024)

Because of this it is recommended that customers who want to avoid getting We Energies' low Buy-Back Rate should size their systems accordingly. For Sugar Creek Lutheran that would suggest no larger than a 20 (KW) Solar energy system. We Energies does have an additional Facilities Charge for a second meter of less than \$2 per month (which a solar power system requires.)

To recap.

- Customer Purchase Rate \$0.16/ KW
- We Energies Buy-Back Rate \$.042/KW
- We Energies does not participate in an excess generated power carryover from month to month.
- Note: over sizing a solar system may add a capital cost and create sale of generated power at We Energies unattractive Buy-Back Rate

Our Current Electrical Usage

Our current consumption for 2023 is 27,120 (KW), with an average of 2260 (KW) per month. Over the past two years our electricity costs have been about \$4100 per year.

Proposed Size and Site of Solar Energy System at Sugar Creek Lutheran Church

Led by the work and research of Erv Schlepp, the property committee, church council and Pastor Dick have been gathering information from multiple sources, both church and secular. Through all of this information gathering and research the property committee is asking that the congregation consider a 20 (KW) solar energy project that is ground mounted and located to the south of the “new cemetery”



Solar Energy Projected Costs

The bid from Adams electric is for a ground mounted systems south of the new cemetery and would meet between 90% and 100% of our current energy usage. ** Please note that the updates on what was actually received before Inflation Reduction Act applications.

Overview of Potential Net Costs

	Adams Electric *
Total System Cost	\$ 63,180
Solar for Good Grant	(\$6,500) Received
Grant from Hammond Climate Solutions Foundation Solar Moonshot Program	(\$25,000) Received
Focus on Energy:	(\$2,500) Applied for but not received
IRA 30% Direct Payment	(\$16,254) Projected
Subtotal:	\$22,926
Additional 10% US Content	(\$5,418) Projected

This is only prepared to give a quick view of potential net costs. The Adams Electric quote does not include an insurance policy costing \$2,000 which is offered.

Proposed Timeline: February 11 – Congregational Question and Answer information meeting on Solar Energy Proposal, February 18 – Congregational Meeting on Solar Energy Proposal to receive permission to move forward and to raise \$40,000

March and April – If proposal is approved raise funds for this project. Once funds are raised enter into contract with vendor and have system installed by the Fall of 2024.

Endowment Committee Support: A motion was made, seconded and passed at the January 25, 2024 meeting that “contingent on the church approving the project, the Endowment Committee would fund \$20,000 for the project to be paid back within 18 months.”

This \$20,00 provides for a bridge loan from install to when Inflation Reduction Act and Focus on Energy reimbursements are paid. ** Note that it is important to have this bridge loan in place though because of grants we did not need to take out a bridge loan.