

City of Black River Falls
COMMON COUNCIL – AGENDA

Tuesday – January 6, 2026 – 6:00 PM
City Hall – 101 S. Second Street, Black River Falls, WI

Join Zoom Meeting:

<https://us02web.zoom.us/j/86241711746?pwd=3j1mdQUH6aHx285zbIkYh27Na3byaM.1>

Or Dial: 1-312-626-6799

Meeting ID: 862 4171 1746

Password: cityhall

1. Call to Order
2. Roll Call
3. Pledge of Allegiance
4. Reading of the Minutes of the December 17, 2025 Special Common Council Meeting –
Action
5. Citizens in Attendance
6. Committee Reports:
 - a. Utility Commission December 29, 2025
7. **ORDINANCE 900** – An ordinance rezoning Parcel 206-2577.0010 from R-1 Single Family Residential to B-3 Highway Business District – 2nd Reading - Action
8. City Hall solar project RFP evaluations – Discussion
9. Meetings: Committee of the Whole **Wednesday, January 21, 2026 6:00 PM**
10. Adjourn

Posted: January 2, 2026

The Common Council met in special session at City Hall in the City of Black River Falls on December 17 2025 at 6:00 P.M. Alderpersons Ammann, Peloquin, Dougherty, and Gearing-Lancaster were present. Alderpersons M. Rave, Busse, and Wussow attended remotely via Zoom meetings. Alderperson E. Rave was absent. Mayor Jay Eddy presided.

It was moved by Alderperson Peloquin, seconded by Alderperson Gearing-Lancaster to dispense with the reading of the minutes of the December 2, 2025 Common Council meeting and approve as presented. Motion carried.

CITIZENS IN ATTENDANCE – There were four citizens in attendance – 1 in person and 3 via Zoom meetings. B. Palmer expressed concerns regarding ADA accessible curbs, snow/ice covered sidewalks, bathrooms at the Chamber of Commerce building, nitrous oxide use in the community and asked about members of the Police Commission. The Street Superintendent advised that next summer, the State of Wisconsin is going to redo every wheel chair ramp on state highways that run through the City at no cost to taxpayers. The Parks & Recreation Director advised the bathrooms at the Chamber building are in the capital improvement plan in 2 years.

It was moved by Alderperson Ammann, seconded by Alderperson Peloquin to place on file the minutes of the October 16, 2025 Airport Commission meeting. Motion carried.

The Department Head monthly reports were reviewed. Department heads present were Mark Nordahl, Travis Brown, Darryl Nelson, Jarod Meyer, Cara Hart, and Brad Chown.

The Fire Chief advised Truck 13 came back from annual inspection with a few minor repairs that were covered under warranty. The Fire Chief and the EMS Coordinator attended a town of Franklin meeting and after good discussion the Town decided to stay with BRF EMS for ambulance service.

It was moved by Alderperson Gearing-Lancaster, seconded by Alderperson Peloquin to authorize the City Administrator to sign the agreement with Make My Move and apply for the WEDC Talent Recruitment Grant. Motion carried.

Representatives from Olson Solar and Ethos Green Power Cooperative attended virtually. There was lengthy discussion on the proposed 32.4kW DC ground mount system for City Hall that included updated gross and net project costs, payback estimates of 10-12 years, concerns with the aesthetics of the back of ground mount units being visible from the front of City Hall and the Library, options for softening the view, the need for warning signs and placards, expiring incentives, Foreign Entities of Concern compliance coming in to play in 2026, as well as discussion on a roof mount option. A roof mount system would be more productive due to less shading, but the biggest concern is the estimated cost of over \$22,000 to remove and reinstall the system when the roof needs to be replaced. Roof replacement is recommended before a system install, so the roof and the panels are on the same life cycles. Council would like to see the vendors provide 3-D conceptual renditions to get a better feel for what the system will look like. This project will be brought back to the January 6, 2026 Common Council meeting.

ORDINANCE 900 – An ordinance rezoning Parcel 206-2577.0010 from R-1 Single Family Residential to B-3 Highway Business District was presented for 1st reading.

It was moved by Alderperson Dougherty, seconded by Alderperson M. Rave to approve vouchers for November 2025 Check #76305 - #76411 totaling \$333,691.56. Motion carried.

It was moved by Alderperson Busse, seconded by Alderperson Wussow to approve the City Treasurer's Report for November 2025. Motion carried.

It was moved by Alderperson Dougherty, seconded by Alderperson Gearing-Lancaster to approve the Revenue & Expense Report for November 2025. Motion carried.

It was moved by Alderperson Peloquin, seconded by Alderperson Dougherty to convene in to closed session for the purpose of considering an amendment to an accepted offer to purchase vacant land from SC Swiderski for five (5) residential lots in Lallapalooza Estates where competitive or bargaining reasons require a closed session which is authorized under Section 19.85(1)(e) of the Wisconsin Statutes. Motion carried at 7:12pm.

It was moved by Alderperson Ammann, seconded by Alderperson Peloquin to reconvene in to open session to announce or take action, if any and if appropriate. Motion carried at 7:27pm.

It was moved by Alderperson Dougherty, seconded by Alderperson Peloquin to direct the City Administrator to counter offer with SC Swiderski with the terms discussed in closed session. Motion carried.

It was moved by Alderperson Peloquin, seconded by Alderperson Dougherty to adjourn. Motion carried at 7:30pm.

A Brad Chown
City Administrator

BLACK RIVER FALLS UTILITY COMMISSION MEETING MINUTES

December 29, 2025

Utility Commission President John Lund called a meeting of the Black River Falls Municipal Utility Commission to order on December 29, 2025 at 3:33 p.m. in the Utility Conference Room at 349 South McKinley Street. Commissioners in attendance were Jeff Amo, Jay Eddy, and Don Mathews. Commissioner Justin Dougherty attended via telephone. Also present were General Manager Casey Engebretson, Office Manager Sam Linehan, and Garrett Aleckson (Banner Journal).

A motion was made by Commissioner Amo and seconded by Commissioner Eddy to approve the minutes from the November 17, 2025 regular meeting.

Aye: Lund, Amo, Dougherty, Eddy, and Mathews
Motion carried.

A motion was made by Commissioner Mathews and seconded by Commissioner Amo to approve the accounts payable vouchers; CK #43385 – 43427 and EP #100976 - 100982 – Totaling \$917,726.75.

Aye: Lund, Amo, Dougherty, Eddy, and Mathews
Motion Carried.

The Commission reviewed the November 2025 arrears.

Sam Linehan discussed options on how to best handle the transition between the last payroll of the year and the first payroll of the subsequent year. Typically, the first payroll of the new year consists of a number of days in the previous year. Therefore, employee pay checks contain two wage rates that must be manually entered. Sam stated that since the first payroll of the year is recorded in the new year, she was asking the Commission to authorize paying the new wage rate for all hours worked in the first pay period, regardless if the hours worked were prior to or after January 1st.

A motion was made by Commissioner Mathews and seconded by Commissioner Dougherty to authorize the Office Manager to utilize the 2026 wage rates for all hours worked for the first payroll of 2026, with the expectation that the General Manager present a resolution for consideration at the next Commission meeting to document this decision for future years.

Aye: Lund, Amo, Dougherty, Eddy, and Mathews
Motion carried.

Casey Engebretson stated that the test well is still slated to be drilled in January 2026. Casey also informed the Commission that the final order was received from the PSCW dated November 12, 2025 authorizing Brockway to serve water customers in the proposed campground area south of E. Lincoln St. Casey reviewed the reporting requirements with staff at Brockway. A key provision in the Order states if Brockway does not initiate service within two (2) years of the effective date of the Order, the authorization becomes void unless Brockway files a written request for an extension of time, which then must be approved by the PSCW.

Casey Engebretson informed the Commission that the WWTP's WPDES permit requires an annual Phosphorus Optimization Report to be filed in December of each permit year. The report was submitted and accepted by the WDNR in early December.

Casey Engebretson informed the Commission that a plow truck struck a power pole earlier in December. Five (5) customers were without power for approximately two (2) hours while the damaged transformer was replaced. The complete repair consisted of replacing the pole and transformer and transferring the crossarms and conductors to the new pole. The work was completed in approximately six (6) hours.

BRFMU IS AN EQUAL OPPORTUNITY PROVIDER

Casey Engebretson presented the Commission with the annual Electric Retail Rates Benchmarking Report. The report provides an overview of rate strategies and whether or not they have been implemented by BRFMU.

Next Meeting: January 19, 2026 @ 3:30 p.m.

A motion was made by Commissioner Eddy and seconded by Commissioner Mathews to adjourn the meeting at 4:04 p.m.

Aye: Lund, Amo, Dougherty, Eddy and Mathews
Motion Carried.

Casey Engebretson, General Manager
comm.mtg.minutes.12.29.2025

CITY OF BLACK RIVER FALLS ORDINANCE NO. 900

**AN ORDINANCE AMENDING THE MUNICIPAL CODE OF THE CITY OF
BLACK RIVER FALLS, JACKSON COUNTY, WISCONSIN,
BY REZONING LAND**

Pursuant to a public hearing held on September 24, 2025, in accordance with the provisions of Wis. Stat. Section 62.23(7)(d)(2), and pursuant to the recommendation of the Plan Commission for the City of Black River Falls, Jackson County, Wisconsin:

The Common Council of the City of Black River Falls, Jackson County, Wisconsin do ordain as follows:

SECTION 1. Zoning ordinance amended. The following described property, which is currently zoned R-1 (Single-Family Residential), is hereby rezoned as B-3 (Highway Business District).

PARCEL #
206-2577.0010

ADDRESS
441 State Highway 54

SECTION 2. Severability. The provisions of this Ordinance shall be deemed severable and it is expressly declared that the Common Council would have passed the other provisions of this Ordinance irrespective of whether or not one or more provisions may be declared invalid and if any provisions of this Ordinance of the application thereof to any person or circumstances is held invalid, the remainder of this Ordinance and the application of such provisions to other persons or circumstances shall not be affected thereby.

SECTION 3. Conflicting ordinances. Ordinances or parts of ordinances in conflict with the above Ordinance are hereby repealed.

CITY OF BLACK RIVER FALLS ORDINANCE NO. 900

SECTION 4. Effective date. Upon passage and publication, this Ordinance shall take effect and be in force as provided by law.

Jay Eddy, Mayor

ATTEST:

Alex B. Chown, Clerk

DATES READ:

DATE PASSED:

DATE PUBLISHED:

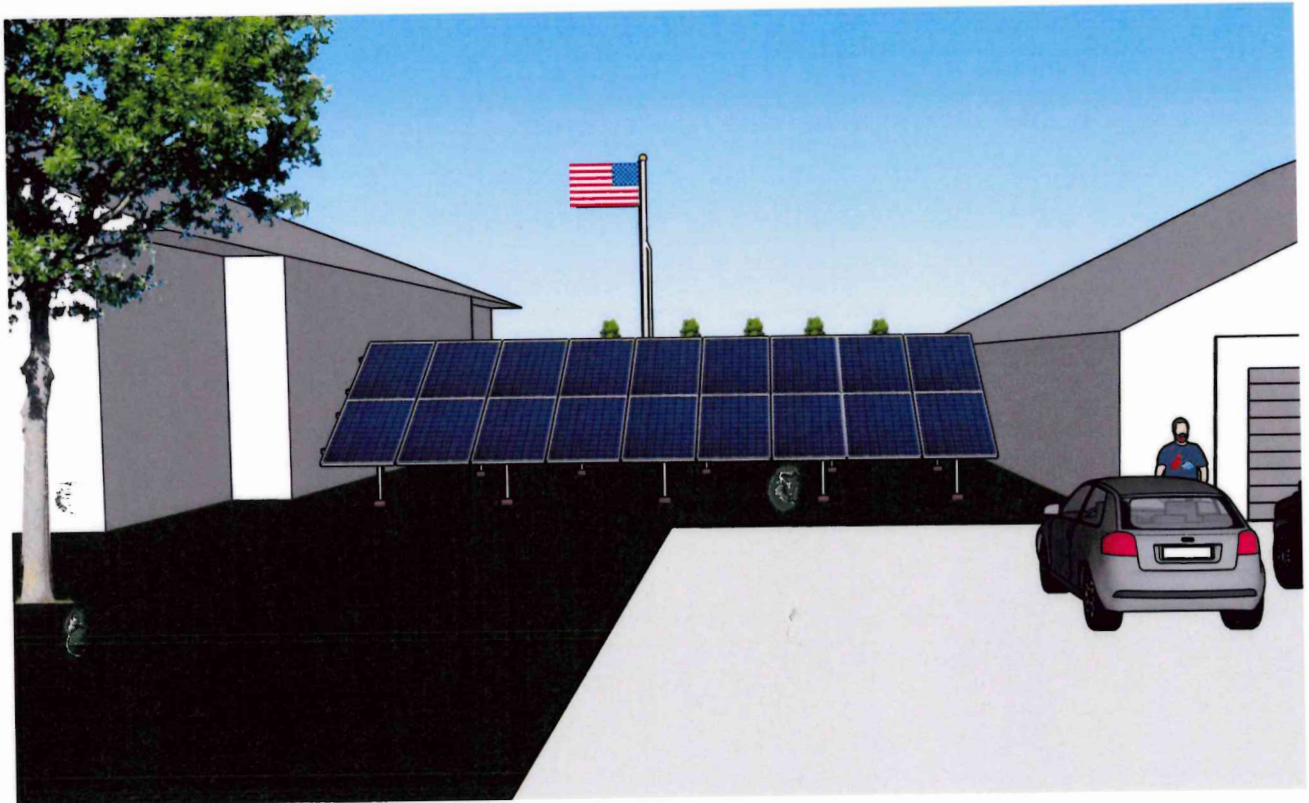
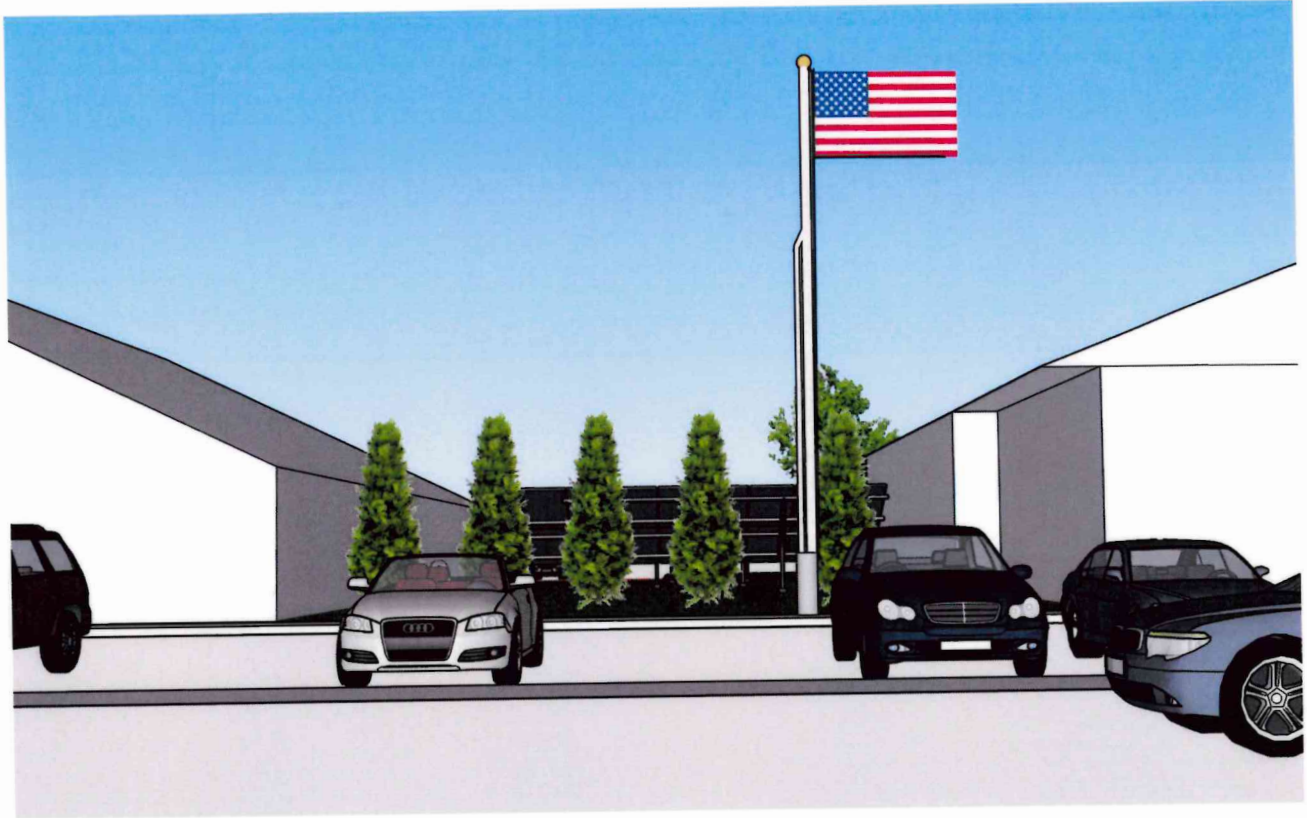
Acknowledgement:

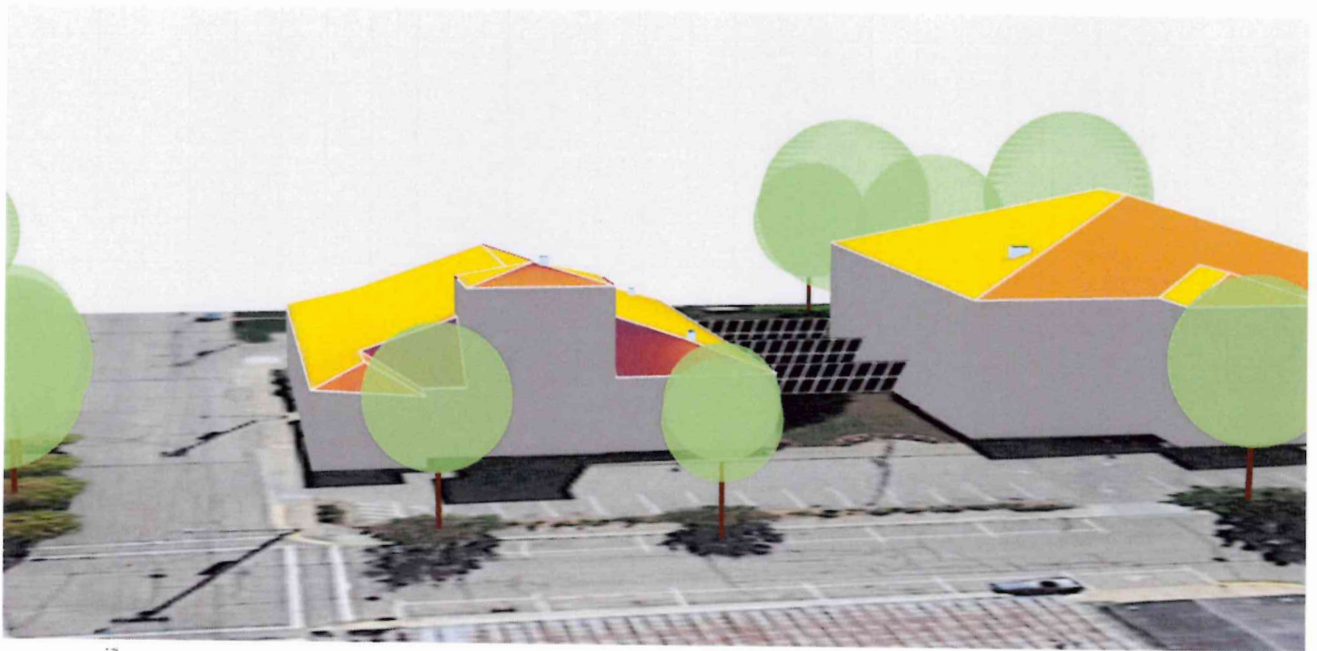
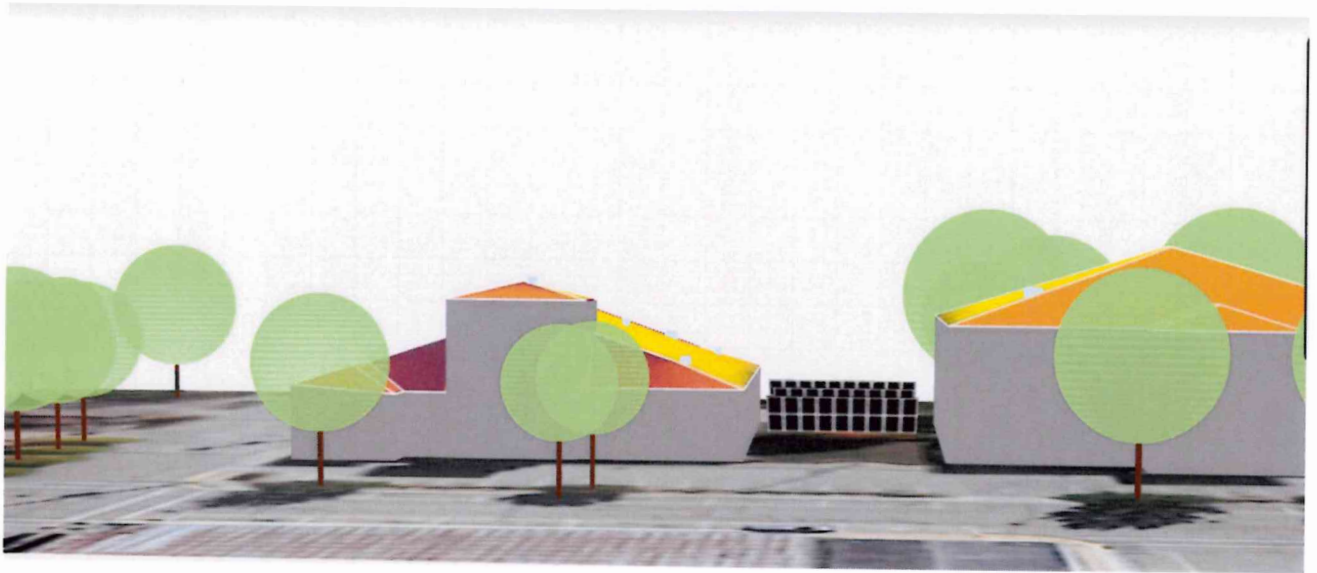
State of Wisconsin)
) ss.
County of Jackson)

Personally came before me this ____ day of _____, 2026 the above-named Jay Eddy and Alex B. Chown, to me known to be the Mayor and City Administrator of Black River Falls, Jackson County, Wisconsin respectively, and to me known to be the persons who executed the foregoing instrument and acknowledge the same.

Notary Public
State of Wisconsin, Jackson County
My commission expires: _____.





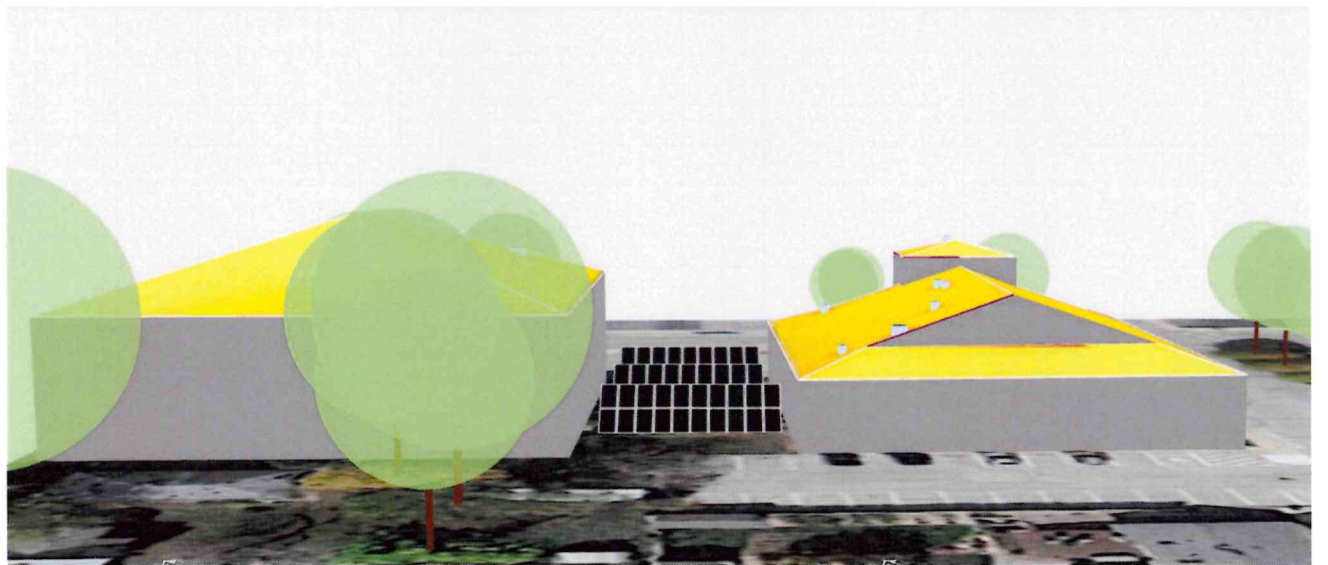
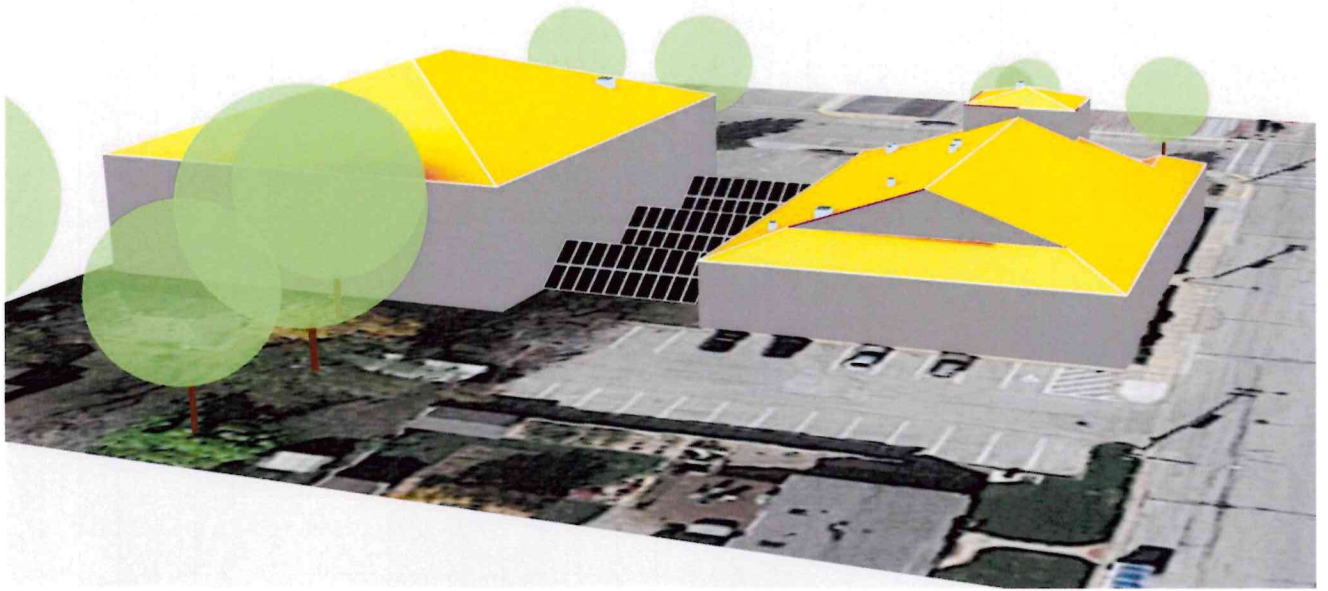


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BRF City Hall

Black River Falls Municipal Utilities

Sally Turpin

Energy Services Manager

(608) 825-1750

Black River Falls

municipal utilities



SOLAR REPORT

Thank You!

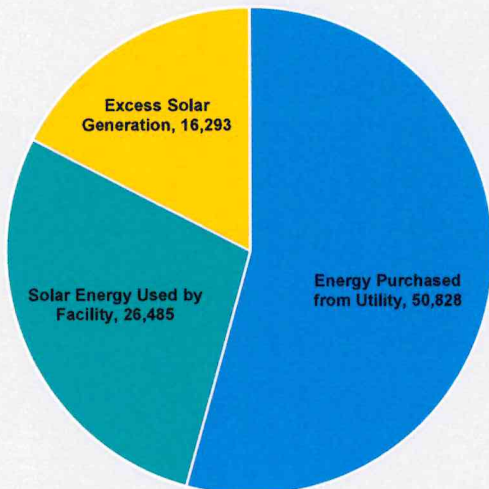
As your locally owned, not-for-profit utility, Black River Falls Municipal Utilities appreciates the opportunity to assist you as you assess a potential solar PV project at your facility. The following analysis is based on the last 12-months of electric 15-minute interval data and a year's worth of solar energy production, scaled to your project size. Based on the information provided, the following analysis considers a 32.4 kW system.

System Summary

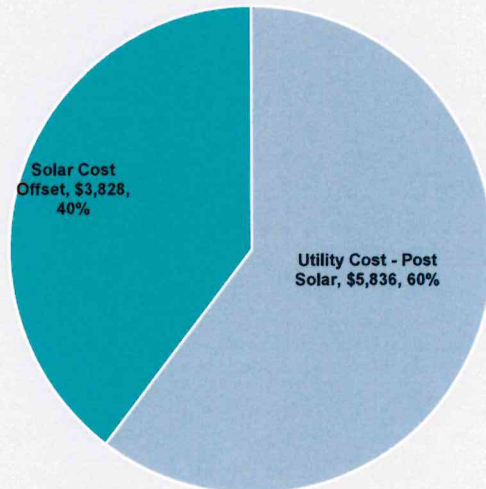
32.4 kW system

Estimated \$3,828/year avoided electric energy (kWh) costs

Energy Flow Impact - Year One (kWh)



Utility Cost Impact - Year One (\$)



Solar has the highest ROI when the facility uses all of the energy produced.

BRF City Hall is currently on the GS-1 rate schedule. That means that you are charged \$0.125/kWh for on-peak energy and \$0.125/kWh for off-peak energy. From 2025 costs, if you overproduce electricity and push it back on the grid, you would be credited at a rate of \$0.036/kWh on-peak and \$0.025/kWh off-peak. Credits for returned energy change on an annual basis.

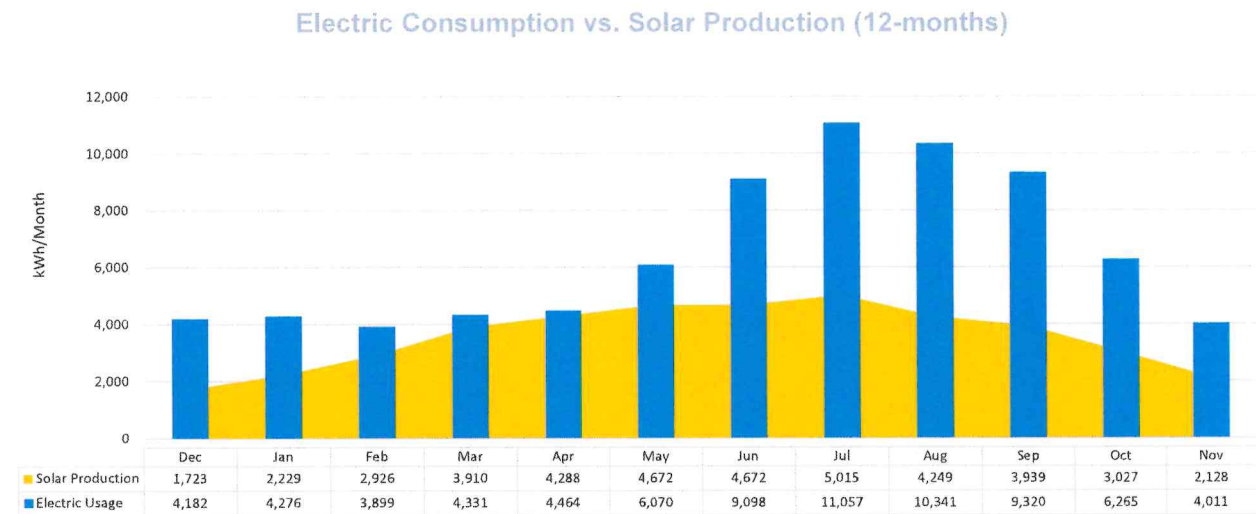
Disclaimer: This analysis is based on average of historic conditions for solar generation and doesn't predict actual results.



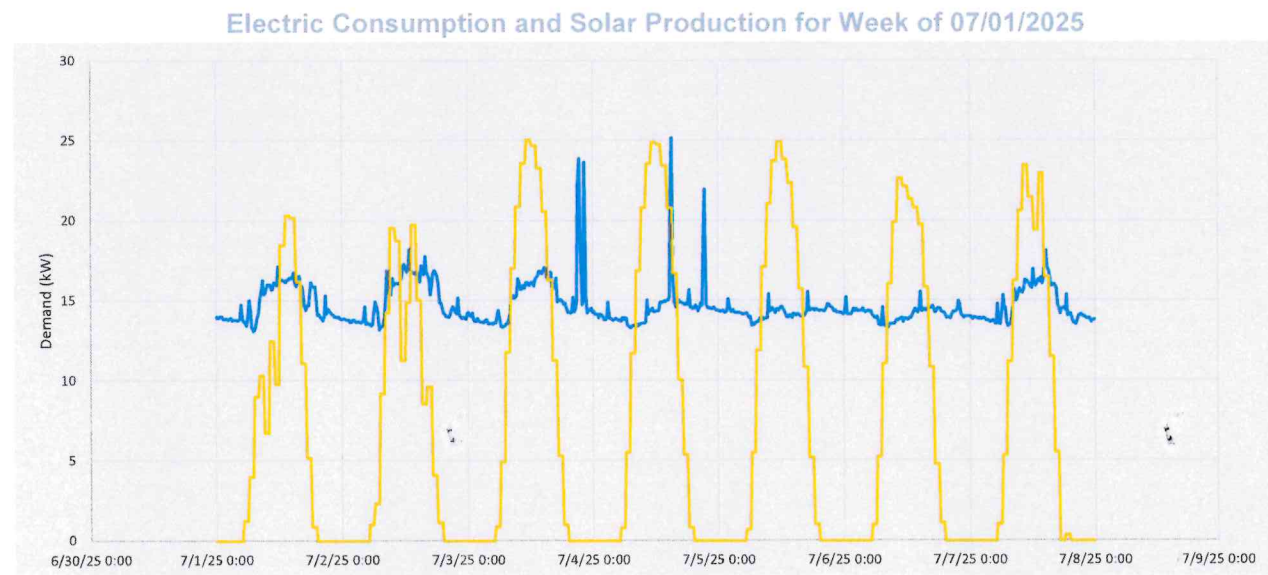
SOLAR REPORT

When Would You Produce Electricity?

The following graph compares the facility's electric energy use (blue bars) and the estimated energy production from the solar project (yellow).



The following graph compares electric consumption vs. solar energy production for a sample week. The blue line shows the existing 15-minute electric consumption of the facility. The yellow shows the estimated solar generation.





BLACK RIVER FALLS, WISCONSIN

A Fine Place to Raise Your Family • A Dynamic Location for Your Business



CITY HALL SOLAR PROJECT RFP EVALUATIONS

1. Summary

- **Received two (2) responses to the Request For Proposals (RFP):**
 - **Ethos Green Power Cooperative (Ethos)** – based in Viroqua, WI
 - **Olson Solar Energy, LLC (Olson)** – based in Onalaska, WI
- **System Size & Impact**
 - **Ethos:** 32.48 kW DC ground-mount, modeled to offset 40% of usage (30,053 kWh/year).
 - **Olson:** 32.4 kW DC ground-mount, modeled to offset 56% of usage (44,417 kWh/year).
- **Cost Efficiency**
 - **Ethos** (32.48 kW):
 - Gross cost \$77,843.94, net after incentives **\$50,666.76.**
 - Approx. \$2.40/W gross / \$1.56/W net
 - Payback ≈ **12.3 years.**
 - **Olson** (32.4 kW):
 - Gross cost \$74,462.68, net after incentives **\$48,303.87.**
 - \$2.30/W gross and \$1.49/W net.
 - Payback ≈ **10 years**, 25-year net savings ≈ \$99,656.24.

- **RFP Compliance**

- Both proposals meet the core specs: ground-mounted fixed-tilt array, 1:1 microinverters, Tier-1 modules, and at least 20-year structural and product warranties.
- Both provide itemized costs, incentives, and production estimates as required.

High-level:

- **Ethos:** Smaller system, higher cost per Watt but lower total outlay and smaller physical footprint.
- **Olson:** Larger system, cheaper per watt and per kWh, shorter payback, and much larger energy/CO₂ impact.

2. Side-by-side Key Quantities & Equipment

System Size, Energy, and Counts

Metric	Ethos	Olson
DC system size	32.4 kW DC	32.4 kW DC
Annual Energy Production	30,053 kWh/year	44,417 kWh/year
Share of City Hall usage	40% offset	59% offset
Module count	56 modules (580W)	54 modules (600W)
Microinverter count	56 Enphase IQ8P-3P	54 Enphase IQ8P-3P-72-E-US

Equipment Details vs RFP

Modules

- **Ethos**
 - Silfab 580 W panels with 25-year manufacturer / 30-year performance warranty.
 - Exceeds 20/25 requirement.
- **Olson**
 - VSUN 600 W N bifacial modules, Tier-1 quality with 25-year quality assurance & 30-year power output guarantee.
 - Exceeds 20/25 requirement.

Inverters

- **Ethos** – Enphase IQ8P microinverters, 1:1 with modules, 25-year warranty.
- **Olson** – Enphase IQ8P-3P-72-E-US microinverters, 1:1, tied to commercial gateway and monitoring.

Racking

- **Ethos** – Sinclair post-driven ground-mount racking, fixed tilt (35°), 25-year warranty –exceeds 20-year structural requirement.
- **Olson** – Unirac Ground Fixed Tilt racking, with a 20-year limited product warranty.

Monitoring & BOS / Scope

- **Ethos** – Enphase Enlighten monitoring; full turnkey including permitting, interconnection, and commissioning.
- **Olson** – Full turnkey scope with design, installation, electrical work, grid tie, permitting, and labor.

Both line-up well with RFP's design, component, permitting, and commissioning requirements.

3. Side-by-side cost and financial metrics

Raw Costs and Incentives

Metric	Ethos (32.4 kW)	Olson (32.4 kW)
Total system cost (gross)	\$ 77,843.94	\$ 75,545.37
Incentive – Federal / Direct	\$ 23,353.18	\$ 22,663.61
Incentive – Focus on Energy	\$ 3,824.00	\$ 1,620.00
Net cost after incentives	\$ 50,666.76	\$ 51,261.76

Cost Per Watt and Per Annual kWh (DC basis)

Metric	Ethos	Olson
Gross cost per W (DC)	≈ \$2.40/W	\$2.33/W
Net cost per W (DC)	≈ \$1.56/W	\$1.58/W

Payback & Savings

Metric	Ethos	Olson
Payback period	12.3 years	9 years
25-year net savings	\$ 129,416.37	\$ 120,152.87

City of Black River Falls

REQUEST FOR PROPOSALS (RFP)

Project: Solar Energy System Installation

Project Location: City Hall, 101 South Second Street, Black River Falls, WI 54615

Project Overview: The City of Black River Falls is soliciting proposals from qualified and experienced firms for the design, supply, installation, and commissioning of a ground-mounted solar photovoltaic (PV) system at City Hall, located at 101 S. Second Street, Black River Falls, WI 54615. This project supports the City's goals of improving energy efficiency, reducing carbon emissions, and lowering long-term utility costs through renewable energy generation.

Introduction to Proposal

Ethos Green Power Cooperative is a strong, small, worker-owned cooperative nestled in the heart of Wisconsin's Driftless Region. Based in the charming town of Viroqua, home to just under 5,000 permanent residents, Ethos is proud to employ 25 full time staff members, and a dedicated ownership body of nine individuals.

Ethos is proud to present a solar proposal to the City of Black River Falls to facilitate the City's energy-efficiency and sustainability goals. If the City has any questions about the information found below, please contact Katherine Lewiston at info@ethos.green or 608-637-3797.

1. Detailed proposal and project scope, including a narrative description of system design and layout including a site map illustrating where the system will be located.

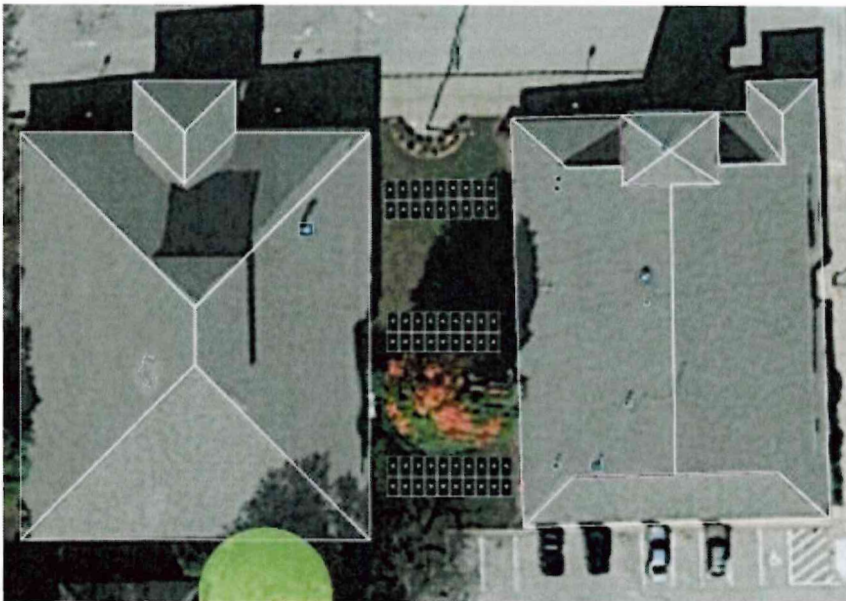
The City of Black River Falls has requested proposals for a fixed tilt ground mount array using premium modules and 1:1 microinverters on the back of each module for optimal production. Ethos is proud to present a proposal for an **32.48 kW DC** two table ground mount set between the City Hall and Library buildings. These ground mount arrays feature **56 Philadelphia Solar Nexus 580W modules**, **56 1:1 Enphase 3P microinverters** on the back of each array, and **Sinclair post-pounded fixed-tilt racking** set at 35 degrees for optimal solar production year-round. Tables are spaced an appropriate distance from each other to prevent interrow shading. This system will be tied into the existing 208 3-phase infrastructure with a lineside connection and is **modeled to offset 40% of the City Hall's usage**.

Ethos Methodology

Ethos uses a solar modeling software called Solargraf that allows us to model solar production as accurately as possible. Rather than offer a "blue sky" production number only based on latitude and longitude, we bake certain losses into our calculations to make sure that our customers receive an estimate that is specific to their location, site characteristics, and equipment.

Factors Affecting Solar Production at Black River Falls City Hall

Location	Site	Our Assumptions
- Peak sun hours vary throughout the year from 6.3 hours in July to 2.9 hours in December - Snow is likely during the winter months	- Ground mount site is located between two buildings, creating shade on either side of the array, further limiting peak sun hours - Trees to the south on the next lot will likely impact solar production in the southwest	- We model a standard 2% loss for soiling on the modules, and a series of percentage losses for snow cover from December to March (5%, 20%, 20%, and 10% respectively) - Our site modeling includes shade from both buildings and trees - This system size is over the net meter cap of 20 kW as set by the utility. Our modeled savings account for the less valuable credits for solar over-production into account, which matches with the utility's estimated annual savings.



[Take a deep dive into your Solargraf proposal here.](#)

Materials included:

Solar Module - [Silfab 580W Modules](#)

- 25 year manufacturer's warranty, 30 year power performance guarantee

Inverter - [Enphase IQ8P 1:1 Microinverters](#)

- 25 year manufacturer's warranty
- Manufacturer-specific Enlighten App solar monitoring

Racking - [Sinclair Post-Driven Ground Mount Racking](#)

- 25 year manufacturer's warranty

Full Turnkey Offering

- **Site Assessment & System Design:**
 - Conduct a comprehensive site assessment to evaluate roof structure, site constraints, sun exposure, shading, and electrical capacity.
 - Design a PV system that optimizes efficiency and complies with local building codes, fire codes, and utility interconnection requirements.
 - Provide a detailed system layout, electrical schematics, and equipment specifications for approval from stakeholders.
- **Due Diligence, Permitting & Approvals:**
 - Coordinate with the utility company to secure interconnection approval and net metering agreements.
 - Procure structural review and requisite engineering stamps for safety and compliance
 - Obtain all necessary permits from local building and zoning departments and authorities having jurisdiction (AHJ).
- **Procurement & Equipment Supply:**
 - Furnish all PV modules, inverters, racking systems, wiring, and balance-of-system components.
 - Provide all required electrical equipment, including disconnects, conduit, junction boxes, and grounding materials.
 - All equipment shall carry manufacturer warranties.
- **Installation:**
 - Perform structural reinforcement if necessary, based on engineering analysis, costs of which are additional but agreed upon before commencement of work.
 - Install PV modules, racking systems, and associated mounting hardware per manufacturer specifications for roof type.
 - Complete electrical work, including wiring, inverters, conduit runs, and interconnection between the facility and the utility grid. Additional costs may be incurred for utility-mandated electrical upgrades or electrical work required beyond the basic interconnection of the solar PV installation.
 - Install battery storage system or other electrification items (if applicable) and integrate with PV system.

- Provide appropriate labeling and safety signage per NEC and local regulations.
- **Testing, Commissioning & Handover:**
 - Conduct system testing to verify proper operation and compliance with design specifications.
 - Coordinate final inspections with municipalities and utility provider.
 - Provide system documentation, including warranties, operations and maintenance guidelines.
 - Deliver detailed training session to operations team covering system operation, monitoring, and basic troubleshooting.
- **Warranty & Maintenance:**
 - Two year complete parts & labor warranty.
 - Provide a workmanship warranty of ten (10) years.
 - Ensure manufacturer warranties for all system components are honored.
 - Offer optional maintenance/service agreements for long-term system protection and performance.

Operations and Maintenance

Every Ethos solar installation comes with **Standard Care + Lifetime Monitoring** at no additional cost. This includes continuous access to your live monitoring portal, periodic remote system health checks, basic remote troubleshooting and inverter resets, and manufacturer warranty guidance when issues arise. Each year, you'll also receive an easy-to-read production and savings summary of your system's performance—giving you peace of mind that your investment stays visible and supported long after installation.

For a higher level of hands-on care, Ethos also offers comprehensive O&M service plans at an additional cost. These plans include scheduled on-site inspections, proactive preventive maintenance, enhanced monitoring, discounted labor rates, and faster response times, along with optional performance and availability guarantees.

Tier 1 — Essential Care	Tier 2 — Performance Plus	Tier 3 — Performance & Uptime Guarantee
Core annual maintenance and health monitoring	Proactive maintenance to protect production and limit downtime Includes all Tier 1 services, plus:	Comprehensive stewardship with rapid response and deeper accountability Includes everything in Tiers 1 & 2, plus:
• Annual preventive maintenance visit Visual inspection of array & electrical, IR scan sampling, spot-torque, Comms Test • Monitoring telemetry & alerts review • After-visit report Annual Executive Summary • Remote alert triage Initial response ≤3 business day Dispatch ≤21 days) • 10% Discount rate on corrective work billed T&M	• Additional maintenance visit (spring/fall) • Expanded electrical diagnostics IV-curve analysis Full IR scan • Semi-annual performance reporting • Priority corrective response Initial response ≤1 business day Dispatch Priority ≤7 days onsite; High Priority ≤3 days. • 25% Discounted rate on T&M	• Quarterly maintenance visit (seasonally) • Full-array annual thermography • Rotational torque plan • Annual re-commissioning review • Monthly performance reports • 24/7 alarm ingest Initial response same day Dispatch Priority ≤1 days onsite • \$1000 Corrective labor allowance before T&M kicks in • Optional Availability Guarantee Addendum
\$10/kW Annually	\$15/kW Annually	\$20/kW Annually

In addition to full O&M packages, customers may also choose individual add-on services such as **Communications Stability Upgrade**, **Annual Rack Adjustments** or a **Corrective Maintenance Allowance** that covers a set number of repair labor hours each year to eliminate surprise maintenance costs.

Monitoring & Communications Stability Upgrade	Rack Adjustment	Prepaid Corrective Maintenance Block
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IT Lite Verifies the monitoring system is always connected and always reporting	Bi-annual adjustments Ensures your array remains structurally sound, secure, and maximizes production	12 Hour Block Reduced labor costs for corrective work not covered by warranty
• Annual firewall/router/ISP review • Communication device firmware updates • Optional hardware swap at discounted T&M rates	• Professional tuned adjustment • Protection from damage • Pump jack tune ups	• 12 prepaid annual labor hours • Faster turnaround for minor issues Troubleshooting, Maintenance & repairs Monitoring/communications replacement
\$3/kW	\$5/kW Annually	\$800

When bundled with your solar installation, a portion of your O&M service contract may be eligible as part of your project's upfront cost and factored into available federal tax incentives. *Tax incentives depend on how your project is structured and your specific financial situation, so we strongly recommend consulting with your tax professional to confirm eligibility and treatment.*

2. Itemized cost estimate with quantities and unit costs for all components and labor.

Category	Dollar Amount
PV Components	\$35,551.22
Silfab 580W, qty of 56	\$21,692.70
Enphase Iq8P-3P, qty of 56	\$11,923.37
Inverter Accessories & Optimizers	\$1,935.15
Electrical Balance of Systems	\$7,661.95
Wire	\$477.17
Sinclair Ground Mount Racking	\$10,921.76
Enphase Monitoring	\$320.25
Skidsteer, Post Pounder, Trencher	\$1,248.97
System Design and Interconnection	\$5,123.97
Direct Labor	\$16,538.65
Mechanical	\$8,671.35
Trenching	\$693.71
Electrical	\$7,173.59
Grand Total	\$77,843.94

3. Estimated system size (kW DC and AC) and annual energy production (kWh).

- Estimated system size (kW DC): 32.48
- Estimated system size (kW AC): 26.6
- Annual Energy Production (kWh): 30,053.09
- Consumption Offset: 40%

4. Summary of eligible Focus on Energy and other available incentive programs.

- Focus on Energy Commercial Solar Rebate valued at \$600 per kW, up to \$2,400, then \$50 per kW thereafter, up to a maximum of \$25,000
- Direct Pay Incentive (if project is safe harbored in 2025), valued at 30% of the total project cost

5. Financial analysis including gross cost, available incentives, net cost, and payback period / ROI.

Total System Price	\$ 77,843.94
Direct Pay Incentive (applied for after interconnection)	\$ 23,353.18
Focus on Energy Commercial Rebate (applied for by Ethos, received after interconnection)	\$ 3,824.00
Price after Rebates and Incentives	\$ 50,666.76

Payback Period: 12.3 years

ROI: 6.7%

Price Per Watt: \$2.40

Price Per Watt after incentives: \$1.56

Average monthly utility bill reduction: \$253.30

Estimated annual avoided kWh costs: \$3,326.44

Total Savings over 25 years: \$129,416.37

6. Project schedule including estimated start and completion dates.

Ethos is committed to delivering projects efficiently while maintaining the highest standards of quality. Below is an outline of our typical lead times and the proactive methods we use to ensure timely project completion. **Should Black River Falls City Hall move forward with Ethos as an installer for a ground mount, we estimate that a system can be installed in April or May of 2026.**

Initial Consultation and Proposal:

- Timeline: 2 - 4 weeks
- After our initial consultation, we provide a detailed proposal, including system design, financial analysis, and project scope, within this timeframe.

Permitting and Approvals:

- Timeline: 4-8 weeks
- Duration varies based on jurisdictional requirements and the complexity of the project.

Equipment Procurement:

- Timeline: 2-6 weeks
- Lead times for equipment such as modules, inverters, and racking systems depend on supplier availability and project size. We begin procurement on project specific equipment after the initial deposit of 60% has been made.

Installation:

- Timeline: 2-6 weeks for commercial
- Installation timelines depend on the system size, site conditions, and weather factors (such as road bans and spring thaw).

Inspections and Utility Interconnection:

- Timeline: 2-6 weeks

- This includes scheduling final inspections and working with utilities to complete the interconnection process.

7. Firm's qualifications, certifications (e.g., NABCEP), and references for at least three similar commercial or municipal solar projects.

Company Information

- Legal Name: Ethos Green Power Cooperative
- Address: 203 Power Drive, Viroqua WI 54665
- Primary Contact: Katherine Lewiston; info@ethos.green; (608) 637-3797
- DUNS Number: 118627428
- NABCEP Certification: PV-030922-013677
- Electrical Contractor License: 1508578
- Master Electrician License: 1453542

Similar Projects

Since 2015, Ethos has installed and commissioned over 6 megawatts of solar generating capacity in the Driftless Region, with an additional 1+ megawatts awaiting activation. A few notable projects may be of particular interest to the City of Black River Falls:

1. Village of Viola Municipal Electric Utility Project, Viola, WI

Ethos consulted with the Village of Viola on the conception of and application for a federal DOE grant that ultimately funded their solar + BESS project. This system includes a **500 kW ground-mounted array on Sinclair SkyRack 2.0 racking, paired with a 440 kWh ELM Microgrid battery**. Ethos ensured compliance with DOE grant guidelines, carefully procuring all materials in accordance with ARRA/BAA requirements. Reference: Jeff Liska - 608-606-5200

2. Trempealeau Public Library, Trempealeau, WI

Ethos installed a **32.4 kW array for Trempealeau Public Library**, completed in 2023. The Ethos team worked with then librarian, Jessica Schoonover, to access as many grants and incentives as possible to minimize the library's out of pocket costs. Reference: Jessica Schoonover, 608-534-6197; jessica@wrlsweb.org

3. Lawton Memorial Library, La Farge, WI

Ethos installed 11.2 kilowatts of solar power on their roof, with a grant from Solar for Good. And with the addition of a Tesla Powerwall battery, they created a safe place in times of real need.

Relevant Equipment and Personnel Experience

Equipment: Ethos owns and operates a Rambo 300 pile-driving machine, customized for use with our Case Trackloader and Sinclair Skyrack 2.0 c-piles.

Sinclair Expertise: As early adopters of Sinclair's racking system, Ethos began partnering with Kyle Sinclair, its owner, in 2020. We are one of their **top five preferred installers nationwide** and feature prominently in their installation guide. Over the past five years, Sinclair's racking has been our exclusive ground-mounted solution, making our crew leads among the most skilled Sinclair installers in the country.

Personnel:

- An **in-house Master Electrician** and two Journeymen support our team of electrical apprentices.
- Our Project Management Coordinator, with over **12 years of government project management experience**, has successfully led lock and dam, as well as lake dredging projects, along the Mississippi. He oversees three project managers, one of whom is dedicated exclusively to commercial and industrial projects.
- Our Senior Designer, with over nine years at Ethos, holds a **NABCEP PV Installation Professional** credential and multiple BESS certifications.

Financial Health and Solar Community Standing

• Capital and Inventory:

We have a significant line of credit with WCCU, our local credit union, to support cash flow for large projects and equipment purchases. We also maintain a robust inventory and a well-balanced balance sheet.

• Vendor Relationships:

Ethos has established excellent relationships with vendors and negotiates project-by-project funding or payment terms as needed. Many vendors have established

distribution networks in Madison, helping aid in fast equipment procurement to meet project deadlines.

- **Amicus Solar Cooperative Membership:**

As the first Wisconsin company to join the Amicus Solar Cooperative, Ethos benefits from a network of 81 high-quality solar installers across the nation. This partnership provides access to pooled resources, education, buying power, and invaluable problem-solving support from both smaller and larger member companies. Click the link [here](#) to learn more about Amicus Solar Cooperative eligibility requirements.

8. Certificate of liability insurance naming the City of Black River Falls as an additional insured.

Ethos is insured through West Bend Insurance Company. Our insurers have provided a Contractor's Blanket statement to provide additional insurance for the City of Black River Falls, should the City choose Ethos as their installer. Please see the statement as an additional attachment.

Conclusion

The City of Black River Falls is seeking solutions to the ever-evolving challenge of reducing emissions and increasing sustainability in a time of market volatility and cost inflation. While uncertainty abounds in today's world, Ethos stands ready to provide a cost-effective, proven solution in the form of ground-mounted solar power. If the City chooses Ethos, you don't just choose an installation crew; you choose a trusted local partner in renewable energy.

Thank you for your consideration!

EXHIBIT B
PROPOSING FIRM QUALIFICATION STATEMENT

Proposing Firm Qualification Statement:

I, Katherine Lewiston, have read the entire contents of the RFP, and certify that Proposing Firm has necessary purchasing contacts, equipment, storage facilities, experience, ability and capital to furnish the purposed products in the manner described and to perform the required work satisfactorily.

Authorized Signature: Katherine Lewiston Date: 11/20/25

Title of Signatory: Technical Sales Expert

I acknowledge that Proposing Firm possesses the following certifications: (Check appropriate boxes to indicate compliance.)

☒ Certification through NABCEP

Authorized Signature: Katherine Lewiston Date: 11/20/25

Title of Signatory: Technical Sales Expert

I certify that Proposing Firm agrees to abide by the SEIA Solar Business Code:

<http://www.seia.org/policy/consumer-protection/seia-solar-business-code>.

Authorized Signature: Katherine Lewiston Date: 11/20/25

Title of Signatory: Technical Sales Expert

Proposing Firm declares the following legal status in submitting this proposal:

- ☒ A corporation organized and existing under the laws of the State of Wisconsin
☐ A partnership Limited Liability Corporation, S Corp
☐ An individual doing business as _____

Ethos Green Power Cooperative 46-2979571
Company Name FEIN

203 Power Drive Viroqua WI 54605
Address City State Zip

Katherine Lewiston Katherine Lewiston, Technical Sales Expert
Proposer's Signature Name & Title



Ethos Green Power Cooperative
203 Power Drive | Viroqua, WI 54665
608-637-3797

WARRANTY

Solar PV & Battery Storage Systems – updated 03/19/2025

1.0 Parts, Materials and Equipment

The SOLAR PV SYSTEM and any BATTERY STORAGE SYSTEM is warranted by Installer to Client to be in Good Operating Order and free from defects in assembly and workmanship. **Materials, parts, and equipment are warranted through the manufacturer**, not by Ethos Green Power Cooperative. Details of those warranties are provided to the Client by the Installer, and any activation of those warranties is executed by the Installer.

1.1 Repairs

If a defect in parts, materials, or equipment arises during the manufacturer's warranty period, Installer will remedy the defect and, if necessary, replace the defective component within a reasonable time. Installer reserves the right to use new or factory-rebuilt parts in 'as new' condition or replace complete assemblies instead of individual parts. This Warranty does not entitle the Client to a refund or any other form of financial reimbursement.

All parts, equipment, labor, design and mobilization for repairs are covered by Installer for **two (2) years** from the installation date. After this two year period, parts and equipment will be replaced at no cost only if covered under the manufacturer's warranty. Additional labor, design, or mobilization costs may also apply.

If Installer determines a defect is likely to occur in a component, part, or workmanship of the SOLAR PV SYSTEM or BATTERY STORAGE SYSTEM, Installer may, at its discretion, preemptively repair or replace it.

2.0 Workmanship

Installer warrants that all design, engineering, and installation services, as well as all drawings and specifications provided under this Agreement, shall be free from defects in workmanship for **ten (10) years** from the Effective Date.

2.1 Repairs

If a defect in Workmanship arises during the warranty period, Installer will, at its sole expense, repair, rework, or replace the defective portion of the SOLAR PV SYSTEM and any BATTERY STORAGE SYSTEM within a reasonable time. This Warranty does not entitle the Client to a refund or any other form of financial reimbursement.

2.2 Exclusions

2.2.1 Internet Communications

The Workmanship warranty does not cover loss of SOLAR PV SYSTEM and any BATTERY STORAGE SYSTEM monitoring due to temporary lapse in internet connection, owner's choice to replace router, WIFI password resets, or other instances of connectivity issues not related to improper installation.

The Workmanship Warranty does not cover loss of monitoring functionality due to connectivity issues with battery monitoring apps or internet-based system controls.

Installer is not responsible for service, labor, or materials costs associated with internet or cellular issues.

2.2.2 Damage and Neglect

The Workmanship Warranty does not cover damage or loss resulting from force majeure events, including but not limited to natural disasters (such as hurricanes, tornadoes, floods, lightning strikes, earthquakes, and wildfires), acts of war, terrorism, government orders, labor strikes, or other unforeseen events beyond the control of Ethos Green Power Cooperative. Additionally, damage caused by external forces such as vandalism, accidents, unauthorized modifications, or improper adjustment to ground mount racking systems are not covered.

BATTERY STORAGE SYSTEMS are not covered under this Workmanship Warranty for damage caused by overcharging, excessive discharging, exposure to extreme temperatures, or improper ventilation.

2.2.3 Energy Output

The Workmanship Warranty does not warrant or guarantee a specified level of energy output by the solar panels and supporting equipment from the SOLAR PV SYSTEM, except to the extent such a guarantee may exist within a separate agreement.

The Workmanship Warranty does not guarantee a specified battery storage capacity or cycle life beyond manufacturer specifications for any BATTERY STORAGE SYSTEM.

3.0 Modification

In the event the SOLAR PV SYSTEM and any BATTERY STORAGE SYSTEM is materially altered or modified by Client, or any of Client's agents, successors, assignees, employees and invitees, without the prior written consent of Installer, this warranty shall terminate and be of no further force or effect with respect to that portion of the SOLAR PV SYSTEM so altered or modified, or affected by modification.

4.0 Obligations of Client

Client agrees to operate the SOLAR PV SYSTEM and any BATTERY STORAGE SYSTEM in accordance with all written instructions provided upon completion of work. Client further agrees to monitor system instrumentation where applicable and to notify Installer promptly upon discovering any suspected malfunction, damage, or defect.

Client is responsible for performing or ensuring the completion of all required maintenance tasks as specified in the documentation provided upon completion of work, including any manufacturer-provided documentation.

If Client fails to substantially comply with operating procedures, operating parameters, and SOLAR PV SYSTEM or any BATTERY STORAGE SYSTEM specifications recommended by the manufacturer, as reasonably updated from time to time, Client shall forfeit the warranty protection described above with respect to the consequences of such failure.

5.0 Effective Date and Term

The "Effective Date" for the commencement of the Warranties above shall be the date the SOLAR PV SYSTEM or any BATTERY STORAGE SYSTEM is placed into service.

6.0 Warranty Transfer

Subject to all terms and conditions of this Agreement, this Warranty may be transferred and assigned from Client to subsequent homeowners by Client providing timely notice to the Installer of such transfer and assignment. Client shall provide the Installer written notice containing the following information: (i) effective date to transfer and assignment; (ii) name of transferee/assignee; (iii) up-to-date phone number and email address of transferee/assignee; and a written representation that Client has informed the transferee/assignee of any Client responsibilities and obligations arising under this or any other Agreement with the Client.

The BATTERY STORAGE SYSTEM Warranty transferability is subject to manufacturer-specific policies.

7.0 Reserved Rights

Installer reserves the right to modify its products or warranty terms offered to future Clients. Installer is not obligated to offer any such changes or revised terms retroactively to the Client or the SOLAR PV SYSTEM or any BATTERY STORAGE SYSTEM. Client and Installer reserve all legal rights not specifically waived, if any, under this Agreement.

Installer reserved the right to charge fees for goods and services not specifically covered or mentioned in this labor warranty.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – CONTRACTOR'S BLANKET

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

- A. WHO IS AN INSURED (Section II)** is amended to include as an additional insured any person or organization whom you are required to add as an additional insured on this policy under a written contract or written agreement.

The written contract or written agreement must be:

1. Currently in effect or becoming effective during the term of this policy; and
2. Signed by all parties to the written contract or written agreement prior to the "bodily injury," "property damage," "personal injury and advertising injury."

- B.** The insurance provided to the additional insured is limited as follows:

1. That person or organization is only an additional insured with respect to liability for "bodily injury," "property damage" or "personal and advertising injury" caused in whole or in part, by:

- a. Your premises; or
- b. Your negligent acts or omissions in connection with "Your work" for that additional insured.

However:

- a. The insurance afforded to such additional insured only applies to the extent permitted by law; and
- b. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the written contract or written agreement to provide such additional insured.

2. The Limits of Insurance applicable to the additional insured are those specified in the written contract or written agreement or in the Declarations for this policy, whichever is less. These Limits of Insurance are inclusive and not in addition to the Limits of Insurance shown in the Declarations.

3. Except when required by written contract or written agreement, the coverage provided to the additional insured by this endorsement does not apply to:

- a. "Bodily injury" or "property damage" occurring after:

- (1) All work on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured at the site of the covered operations has been completed; or
- (2) That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as part of the same project.

- b. "Bodily injury" or "property damage" arising out of acts or omissions of the additional insured other than in connection with the general supervision of "your work."

4. The insurance provided to the additional insured does not apply to "bodily injury," "property damage," "personal injury and advertising injury" arising out of an architect's, engineer's, or surveyor's rendering of or failure to render any professional services including;

- a. The preparing, approving, or failing to prepare or approve maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; and
- b. Supervisory, or inspection activities performed as part of any related architectural or engineering activities.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of, or the failure to render, any professional architectural, engineering or surveying services.

- C. As respects the coverage provided under this endorsement, Paragraph **4.b. SECTION IV – COMMERCIAL GENERAL LIABILITY CONDITIONS** is amended with the addition of the following:

4. Other insurance

b. Excess insurance

This insurance is excess over:

Any other valid and collectible insurance procured by or on behalf of the additional insured whether primary, excess, contingent or on any other basis unless a written contract specifically requires that this insurance be either primary or primary and noncontributing. Where required by written contract, we will consider any other insurance procured by the additional insured for injury or damage covered by this endorsement to be excess and noncontributing with this insurance.

If no written contract specifically requires primary or noncontributory coverage, then this insurance is excess and as a condition of coverage, the additional insured shall be obligated to tender the defense and indemnity of every claim or suit to all other insurers that may provide coverage to the additional insured, whether on a contingent, excess or primary basis.

When this insurance is excess, we will have no duty under Coverage **A.** and Coverage **B.** to defend the insured against any "suit" if any other insurer has a duty to defend the insured against that "suit". If no other insurer defends, we will undertake to do so, but we will be entitled to the insured's rights against all those other insurers.



Cameron Olson, Owner/Operator
Brandon Olson, Owner/Operator
Olson Solar Energy, LLC

Main:
1447 Oak Forest Dr
Onalaska, WI 54650

Satellite(s):
1003 Vernon St • Altoona WI
226891 Rib Mountain Dr • Wausau WI



Olson Solar Energy, LLC solar energy installation and electrical contracting company, is based in Onalaska WI and also has satalitte offices in located in Altoona and Wausau and brings more than seven years of professional solar design, installation and commissioning to your program. Our company was started by twin brothers and Wisconsin natives Brandon and Cameron Olson in 2017.

We anticipate our proposal will help your organization meet the goals of renewable energy and resiliency solution installation. We want to partner with organizations that are committed to helping facilitate, educate and motivate residential and commercial properties to invest in photovoltaic systems that are both safe and financially responsible.

Olson Solar Energy specializes in solar sales and certified professional installations, storage systems sales and installations, solar service, battery(storage) service, vehicle charging stations, smart breaker panels and micro-grid solutions.

COR *Brandon Olson*



OLSON SOLAR ENERGY

www.olsonsolarenergy.com

TEAM LEADERS

Program
Development,
Management
and Reporting.



CAMERON OLSON

OWNER/OPERATOR, OLSON SOLAR ENERGY

Cameron Olson – part owner, Chief Executive Officer and officer manager: has developed different reporting methods used by Olson Solar Energy to ensure customer performance and satisfaction. He brings more than twelve years of management experience.

Installation and
Operations
Team
Management



BRANDON OLSON

OWNER/OPERATOR, OLSON SOLAR ENERGY

Brandon Olson – part owner, Chief Operations Officer. After completing a PBC installer class and OSHA 30 practical training requirements, Brandon completed further training and holds a NABCEP PV Professional certification.

NABCEP PV Professional certificate
PV-011521-027034 exp 03/15/2027

Installation
Scheduling
and Team
Management



DAVE GNEWIKOW

SOLAR FOREMAN, OLSON SOLAR ENERGY

Dave Gnewikow – Solar Foreman: Dave brings fifteen years experience in construction and construction management to the renewable focus at Olson Solar Energy. Dave completed further OSHA 10, Fall Protection and renewable training and holds a NABCEP PV Associate certification.



OLSON SOLAR ENERGY





OLSON SOLAR ENERGY

Tom Shock – Master Electrician with more than 30 years of solar electrical experience. Tom joined Olson Solar Energy in 2020. Tom continues to develop further training and has held his NABCEP PV Professional certification for several years.

WI Master Electrician ID 1097315 exp 6/30/2025
NABCEP PV Pro 042013-120 exp 06/03/2025

Andy Wettstein - Master Electrician... With over 30 years in electrical contracting. Andy has done work on projects big and small in the Residential, industrial and commercial world. Andy joined Olson Solar in 2023 to help continue their Growth in the solar and other aspects of electrical Contracting

WI Master Electrician ID 879234 exp 6/30/2027

Emily Windsor - Design Manager; A graduate of Western Technical College with a Building Science and Energy Management degree. At WTC she learned a lot about the growing renewable energy industry which led to her career at Olson Solar Energy.

TEAM LEADERS

Master
Electrician,
Electrical
Contractor
Management.



TOM SHOCK

MASTER ELECTRICIAN, OLSON SOLAR ENERGY

Master
Electrician,
Electrical
Team
Management.



ANDY WETTSTEIN

MASTER ELECTRICIAN, OLSON BROS ELECTRIC

Design and
Permitting
Management



EMILY WINDSOR

DESIGN MANAGER, OLSON SOLAR ENERGY

COMMERCIAL PROJECT EXPERIENCE

1. RUSK COUNTY COMMUNITY LIBRARY FOUNDATION (50kw installed 2022/2023)

418 Corbett Ave W
Ladysmith, WI 54848
23.7kw AC System

Contact: Dan Bale
balel@icloud.com
(651) 386-4243



2. HEGG MILL LLC (116kw installed Summer 2023)

N23395 US-53
Ettrick, WI 54627
100 kw AC System

Contact: Travis Thompson
heggmill@gmail.com
(608) 525-4545



3. CASHTON ELEMENTARY SCHOOL (61kw DC - installed Fall 2021)

540 Coe St
Cashton WI 54619
50kw AC System

Contact: Khris Kleba
kleba.khris@cashton.k12.wi.us
(608) 654-5131



4. MENOMONIE AREA SCHOOL DISTRICT (114kw DC - Installed Summer 2022)

920 21st Street SE
Menomonie, WI 54751
100kw AC System

Contact: Kevin Tomaszewski
kevin_tomaszewski@msd.k12.wi.us
(715) 232 1642ext 11063



OLSON SOLAR ENERGY

5. OAKWOOD VILLAGE PRAIRIE RIDGE (100kw Installed Fall 2023)

5815 American Parkway
Madison, WI 53718
84.4kw AC System

Contact: Wade Little
wade.little@oakwoodvillage.net
(608) 230-4264



6. FAMILY VISION CENTER (58kw DC - Installed Spring 2022)

3424 Mormon Coulee Rd
La Crosse, WI 54601
49.76 AC System

Contact: Kyle Wonderling
kyle@wifamilyvision.com
(608) 788-4300



7. RIVERS AND BLUFFS ANIMAL SHELTER (24kw DC - Installed Fall 2022)

460 Cliffwood Dr
Prairie du Chien WI 53821
18.79 AC System

Contact: Jill Cipra
jbcipra@hotmail.com
(608) 326-4870



OTHER COMPLETED SYSTEMS >20kw:

Jereczek Homestead Dairy LLC (Dodge WI) 54kw DC - Installed Fall 2022

Solis Circle Affordable Housing (Altoona WI) 54kw DC - Installed Spring 2023

Allegiant Properties Village Manor (Houston MN) 51KW - Installed Spring 2023

Rein Farms (Lanesboro MN) 51kw DC - Installed Fall 2022

Borchardt Farms (Edgar WI) 48kw DC - Installed Fall 2022

www.olsonsolarenergy.com

EXHIBIT B
PROPOSING FIRM QUALIFICATION STATEMENT

Proposing Firm Qualification Statement:

I, Cameron J Olson, have read the entire contents of the RFP, and certify that Proposing Firm has necessary purchasing contacts, equipment, storage facilities, experience, ability and capital to furnish the proposed products in the manner described and to perform the required work satisfactorily.

Authorized Signature:  Date: 04/01/25

Title of Signatory: Chief Executive Officer, Olson Solar Energy LLC

I acknowledge that Proposing Firm possesses the following certifications: (Check appropriate boxes to indicate compliance.)

☒ Certification through NABCEP

Authorized Signature:  Date: 04/01/25

Title of Signatory: Chief Operations Officer, Olson Solar Energy LLC

I certify that Proposing Firm agrees to abide by the SEIA Solar Business Code:

<http://www.seia.org/policy/consumer-protection/seia-solar-business-code>.

Authorized Signature:  Date: 04/01/25

Title of Signatory: Chief Executive Officer, Olson Solar Energy LLC

Proposing Firm declares the following legal status in submitting this proposal:

☐ A corporation organized and existing under the laws of the State of _____

☒ A partnership Limited Liability Corporation, S Corp

☐ An individual doing business as _____

Olson Solar Energy LLC 83-3088304
Company Name FEIN

1447 Oak Forest Dr Onalaska WI 54650
Address City/State/Zip Code

 Cameron Olson, CEO
Proposer's Signature Name & Title



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

5/9/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Coverra Insurance Services, Inc. 3803 Creekside Lane Holmen WI 54636		CONTACT NAME: Tina Rouleau PHONE (A/C, No, Ext): 608-790-9716 E-MAIL ADDRESS: trouleau@coverrainurance.com FAX (A/C, No): 608-269-2130	
		INSURER(S) AFFORDING COVERAGE	NAIC #
		INSURER A : WEST BEND MUT INS CO	15350
		INSURER B : HARTFORD STEAM BOIL INSPEC INS CO CT	29890
		INSURER C :	
		INSURER D :	
		INSURER E :	
		INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** 1268803768 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☒ PROJECT ☐ LOC OTHER:			B092312	5/20/2024	5/20/2025	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
A	☒ AUTOMOBILE LIABILITY ☒ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☒ HIRED AUTOS ONLY ☒ NON-OWNED AUTOS ONLY			B092312	5/20/2024	5/20/2025	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	☒ UMBRELLA LIAB ☒ OCCUR ☐ EXCESS LIAB ☐ CLAIMS-MADE DED RETENTION \$			B092312	5/20/2024	5/20/2025	EACH OCCURRENCE \$ 2,000,000 AGGREGATE \$ \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	B092441	5/20/2024	5/20/2025	☒ PER STATUTE ☐ OTH-ER E.L. EACH ACCIDENT \$ 500,000 E.L. DISEASE - EA EMPLOYEE \$ 500,000 E.L. DISEASE - POLICY LIMIT \$ 500,000
A B	Equipment leased/rented f/Others Cyber Liability			B092312 01CY0005513823	5/20/2024 2/1/2024	5/20/2025 2/1/2025	Limit \$150,000 Aggregate Limit \$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER**CANCELLATION**

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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NABCEP®

Raising Standards. Promoting Confidence.



PV Installation Professional

Certification # PV-011521-027034

Expires 03/15/2027

To verify current status visit www.nabcep.org

The North American Board of Certified Energy Practitioners

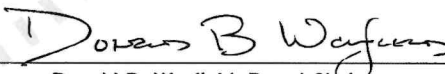
does hereby recognize that

BRANDON OLSON

has satisfied the requirements and standards for the

PV Installation Professional

established by the NABCEP Board of Directors.


Donald B. Warfield, Board Chairman

NABCEP®

Raising Standards. Promoting Confidence.



PV Installation Professional

**The North American Board of
Certified Energy Practitioners**

does hereby recognize that

THOMAS SHOCK

has satisfied the requirements and standards for the

PV Installation Professional

established by the NABCEP Board of Directors.

Certification # 042013-120

Expires 06/03/2028

To verify current status visit www.nabcep.org

A handwritten signature in black ink that reads "Donald B. Warfield".

Donald B. Warfield, Board Chairman

Diversity and Inclusion Plan

Introduction: Olson Solar Energy is committed to fostering an inclusive workplace where all employees feel valued, respected, and supported. We recognize that diversity in backgrounds, experiences, perspectives, and identities strengthens our organization and enhances innovation and productivity. Our Diversity and Inclusion Plan outlines strategies and initiatives to create a culture that celebrates diversity, promotes equity, and ensures inclusion at all levels of the organization.

1. Leadership Commitment:

- Senior leadership will demonstrate visible and unwavering commitment to diversity and inclusion through regular communication, allocation of resources, and leading by example.
- Establish clear diversity and inclusion goals aligned with the company's mission and values, with measurable objectives and timelines.

2. Recruitment and Hiring:

- Implement bias-aware recruitment and hiring practices to attract diverse talent.
- Collaborate with diverse professional organizations and networks to expand outreach efforts.
- Establish diverse hiring panels to mitigate unconscious biases during the selection process.
- Implement regular diversity training for hiring managers and interviewers.

3. Training and Education:

- Develop and deliver diversity, equity, and inclusion training programs for all employees, focusing on raising awareness, building empathy, and fostering cultural competence.
- Offer ongoing learning opportunities, including workshops, seminars, and guest speaker series, to promote understanding of diverse perspectives and experiences.
- Provide resources and support for employees to engage in self-directed learning and personal growth related to diversity and inclusion.

4. Employee Resource Groups (ERGs):

- Support the establishment and growth of Employee Resource Groups (ERGs) representing diverse communities within the organization.
- Provide funding, resources, and leadership guidance to empower ERGs in organizing events, initiatives, and advocacy efforts.
- Encourage participation in ERGs at all levels of the organization and recognize their contributions to fostering inclusion.

5. Mentorship and Sponsorship Programs:

- Implement mentorship and sponsorship programs to support the professional development and advancement of underrepresented employees.
- Pair employees from diverse backgrounds with experienced mentors who can provide guidance, advice, and support in navigating career opportunities and challenges.
- Advocate for sponsorship of high-potential diverse talent by senior leaders to ensure equitable access to leadership opportunities.

6. Workplace Policies and Practices:

- Review and revise workplace policies and practices to ensure they are inclusive and equitable, addressing potential biases and barriers to participation and advancement.
- Establish procedures for reporting and addressing discrimination, harassment, and microaggressions, with transparent and confidential channels for resolution.
- Provide accommodations and support for employees with diverse needs, including flexible work arrangements, parental leave, and accessibility accommodations.

7. Accountability and Measurement:

- Establish metrics and key performance indicators (KPIs) to track progress towards diversity and inclusion goals.
- Conduct regular assessments and surveys to gather feedback from employees on their experiences and perceptions of diversity and inclusion within the organization.
- Hold leaders and managers accountable for promoting diversity and inclusion through performance evaluations and recognition programs.

8. Community Engagement and Partnerships:

- Partner with external organizations, community groups, and educational institutions to promote diversity and inclusion initiatives and address broader societal challenges.
- Participate in community events, sponsorships, and volunteer opportunities that support diversity, equity, and inclusion.
- Share best practices and lessons learned with other organizations to collectively advance diversity and inclusion efforts.

Conclusion: Olson Solar Energy is committed to building a diverse and inclusive workplace where every individual feels valued, empowered, and supported to reach their full potential. By implementing the strategies outlined in this Diversity and Inclusion Plan, we will create a culture that fosters innovation, drives performance, and reflects the diverse communities we serve.



Brandon Olson

Chief Operations Officer

Olson Solar Energy | Olson Brothers Electric

o (608) 780-2347

m (608) 792-6312

brandon.olson@olsonsolarenergy.com



Onalaska | Eau Claire | Wausau | Rochester | Appleton



Onalaska | Eau Claire

****MEMO****

From:

Cameron J Olson

Co-Owner / CEO

608.792.6415

cameron.olson@olsonsolarenergy.com

RE:

DAVIS BACON ACT COMPLIANCE

Olson Solar Energy, LLC will do the following to support the Davis Bacon act when required:

- Meet all wage requirements for employees assigned to do work on the projects requiring compliance with the Davis Bacon Act.
- Will maintain records of supporting the wages and time for each employee when assigned to projects requiring compliance.
- Records will be available upon request to verify compliance.

CO

Hello, Black River Falls City Hall

We are excited to hear that you are considering solar!
Thank you for including Olson Solar Energy in your decision- making process.



OUR STORY

Olson Solar Energy was founded and is owned and operated by twin brothers Cameron and Brandon Olson. The Olsons hold a true passion for solar energy and value a strong work ethic and excellent customer service.

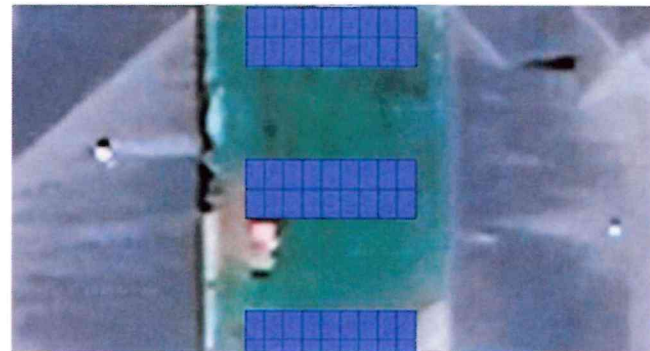
THE OLSON SOLAR ENERGY ADVANTAGE

- Our systems are designed and installed by skilled professionals, with specific attention given to each owner's preferences and project requirements.
- We work with the highest quality components and materials, as well as an industry leading 25-year warranty on our workmanship.
- We maintain highly reputable relationships with local utility providers as well as municipalities and other governing authorities by ensuring each system is installed within all proper procedural guidelines.
- We are local. Our company owners, sales associates, electricians, installation and tech service crews each live and work in the communities we serve.

Summary

44,417

kWh Produced Annually



Solar Design for:

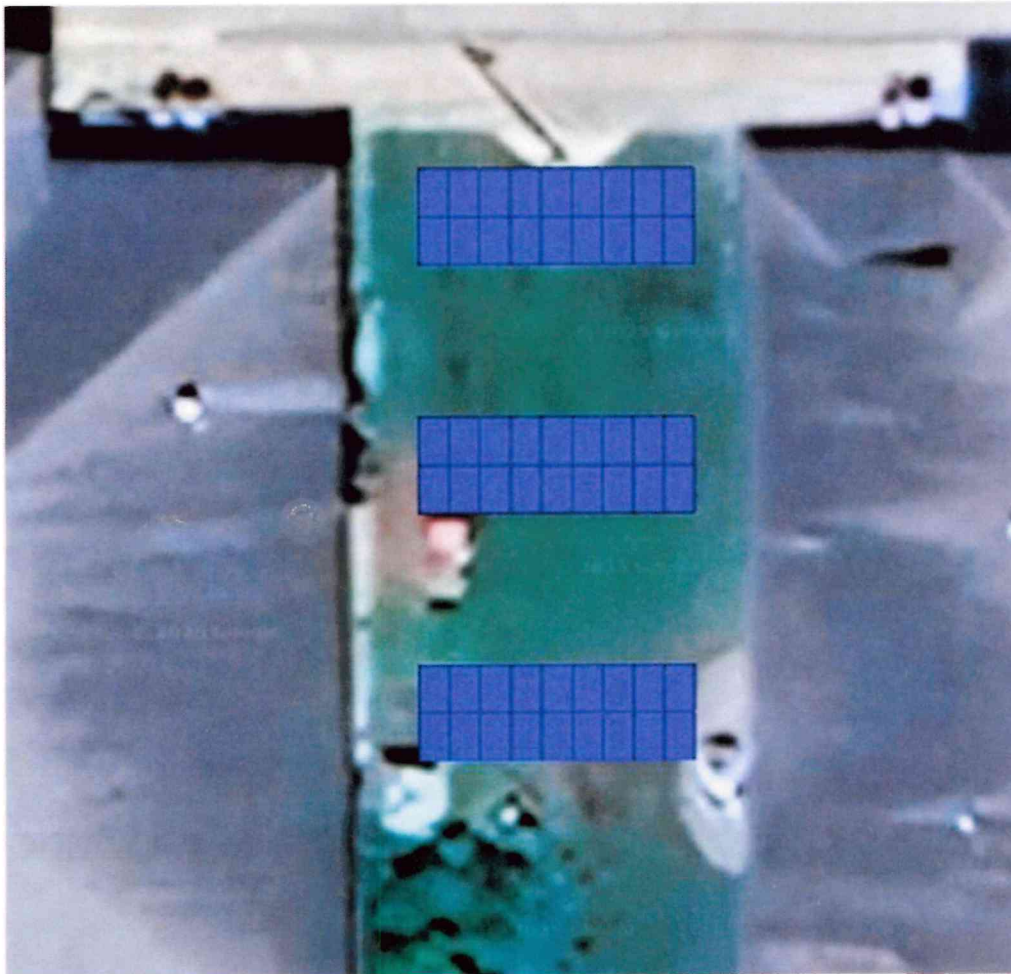
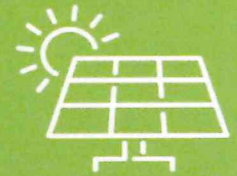
101 South Second St. Black River Falls, WI 54615

Booker Bredlau

COMMERCIAL SALES REPRESENTATIVE

608.816.0563

What is the solution?



54

0830 - VSUN 600W N Solar Panels
SOLAR PANELS

54

1020 - EN-IQ8P-3P-72-E-US
INVERTERS

44,417

kWh Energy Produced

32.4

KW DC System



OLSON SOLAR ENERGY

Black River Falls City Hall

[illegible]

Final Costs	
Total System Cost Today	\$ 74,462.68
Total System Cost per Watt	\$ 2.30
Estimated Focus on Energy*	\$ (3,820.00)
Estimated Federal Credit (30%)**	\$ (22,338.80)
Total Cost after Incentives	\$ 48,303.87
Total Cost per Watt after Incentives	\$ 1.49

12/17/2025 | All Estimates valid for 30 days.

*Incentives based on third party funds and may be depleted, are not guaranteed.

**** Always consult a tax professional regarding federal tax credit eligibility.**



Investment analysis data



Black River Falls City Hall
101 South Second St. Black River Falls, WI 54615

Proposed Net Investment	\$ 48,303.87
--------------------------------	---------------------

Your Olson Solar Energy Estimate minus estimated incentives

Utility Provider	Black RvrFls Municipal
Current Price Per Watt	\$ 0.1195
Annual kWh Produced	44417
Payback (years)	10
25 Year Net Savings	\$ 99,656.24

Interest Rate†	8.74%
Years of loan	12
Monthly Payment	\$542.66

†Estimated interest rate for common solar loan. Consult your preferred lender for actual rate and payment terms.

Increase in property value	\$ 31,397.52
-----------------------------------	---------------------

Year	Annual kWh Produced	Annual Value	Accumulated Value	Savings	POTENTIAL FINANCE OPTIONS		
					Finance Monthly Payment	Monthly +/- Difference of Going Solar	Weekly +/- Difference of Going Solar
0	0	\$ -	\$ -	\$ (48,303.87)	\$ -		
1	44417	\$ 4,248.49	\$ 4,248.49	\$ (44,055.39)	\$ 542.66	\$ (188.62)	\$ (44.91)
2	44150	\$ 4,349.68	\$ 8,598.17	\$ (39,705.70)	\$ 542.66	\$ (180.19)	\$ (42.90)
3	44009	\$ 4,465.84	\$ 13,064.01	\$ (35,239.86)	\$ 542.66	\$ (170.51)	\$ (40.60)
4	43868	\$ 4,585.09	\$ 17,649.10	\$ (30,654.77)	\$ 542.66	\$ (160.57)	\$ (38.23)
5	43728	\$ 4,707.54	\$ 22,356.64	\$ (25,947.23)	\$ 542.66	\$ (150.37)	\$ (35.80)
6	43588	\$ 4,833.25	\$ 27,189.88	\$ (21,113.99)	\$ 542.66	\$ (139.89)	\$ (33.31)
7	43449	\$ 4,962.31	\$ 32,152.20	\$ (16,151.68)	\$ 542.66	\$ (129.14)	\$ (30.75)
8	43310	\$ 5,094.83	\$ 37,247.02	\$ (11,056.85)	\$ 542.66	\$ (118.10)	\$ (28.12)
9	43171	\$ 5,230.88	\$ 42,477.90	\$ (5,825.97)	\$ 542.66	\$ (106.76)	\$ (25.42)
10	43033	\$ 5,370.56	\$ 47,848.46	\$ (455.41)	\$ 542.66	\$ (95.12)	\$ (22.65)
11	42895	\$ 5,513.98	\$ 53,362.44	\$ 5,058.57	\$ 542.66	\$ (83.17)	\$ (19.80)
12	42758	\$ 5,661.22	\$ 59,023.67	\$ 10,719.79	\$ 542.66	\$ (70.90)	\$ (16.88)
13	42621	\$ 5,812.40	\$ 64,836.07	\$ 16,532.20	\$ 542.66	\$ (58.30)	\$ (13.88)
14	42485	\$ 5,967.62	\$ 70,803.68	\$ 22,499.81			
15	42349	\$ 6,126.97	\$ 76,930.66	\$ 28,626.79			
16	42213	\$ 6,290.59	\$ 83,221.25	\$ 34,917.38			
17	42078	\$ 6,458.57	\$ 89,679.82	\$ 41,375.95			
18	41943	\$ 6,631.04	\$ 96,310.87	\$ 48,006.99			
19	41809	\$ 6,808.12	\$ 103,118.98	\$ 54,815.11			
20	41675	\$ 6,989.92	\$ 110,108.91	\$ 61,805.03			
21	41542	\$ 7,176.58	\$ 117,285.49	\$ 68,981.62			
22	41409	\$ 7,368.23	\$ 124,653.71	\$ 76,349.84			
23	41277	\$ 7,564.99	\$ 132,218.70	\$ 83,914.83			
24	41145	\$ 7,767.00	\$ 139,985.70	\$ 91,681.83			
25	41013	\$ 7,974.41	\$ 147,960.11	\$ 99,656.24			

12/17/2025 | All Estimates valid for 30 days.

*Incentives based on third party funds and may be depleted, are not guaranteed.

** Always consult a tax professional regarding federal tax credit eligibility.

Investment analysis summary



Black River Falls City Hall
101 South Second St. Black River Falls, WI 54615

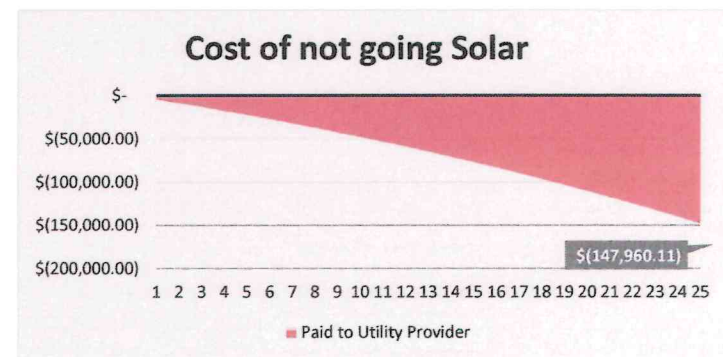
YOUR ESTIMATED SAVINGS

\$ 99,656.24	25 YEAR NET SAVINGS
\$ 48,303.87	Net Investment
10	Payback (yrs)
\$ 31,397.52	Increase in Property Value**

FINANCE ESTIMATE

8.74%	Estimated Interest Rate
12	Loan term (yrs)
\$ 542.66	Estimated Monthly Payment
\$ (188.62)	First Year monthly +/- Difference of Going Solar

If you choose to seek a financing for your solar system, compare this number to your current monthly electric utility bill to realize instant savings!



Savings calculations based on current utility price per watt and include a national average of a 3% annual rate increase.

*** Based on a Lawrence Berkeley National Laboratory Study, 65% of the cost of solar is recovered when a home is sold.*

12/17/2025 | All Estimates valid for 30 days.

*Incentives based on third party funds and may be depleted, are not guaranteed.

** Always consult a tax professional regarding federal tax credit eligibility.

How much solar energy will be produced?

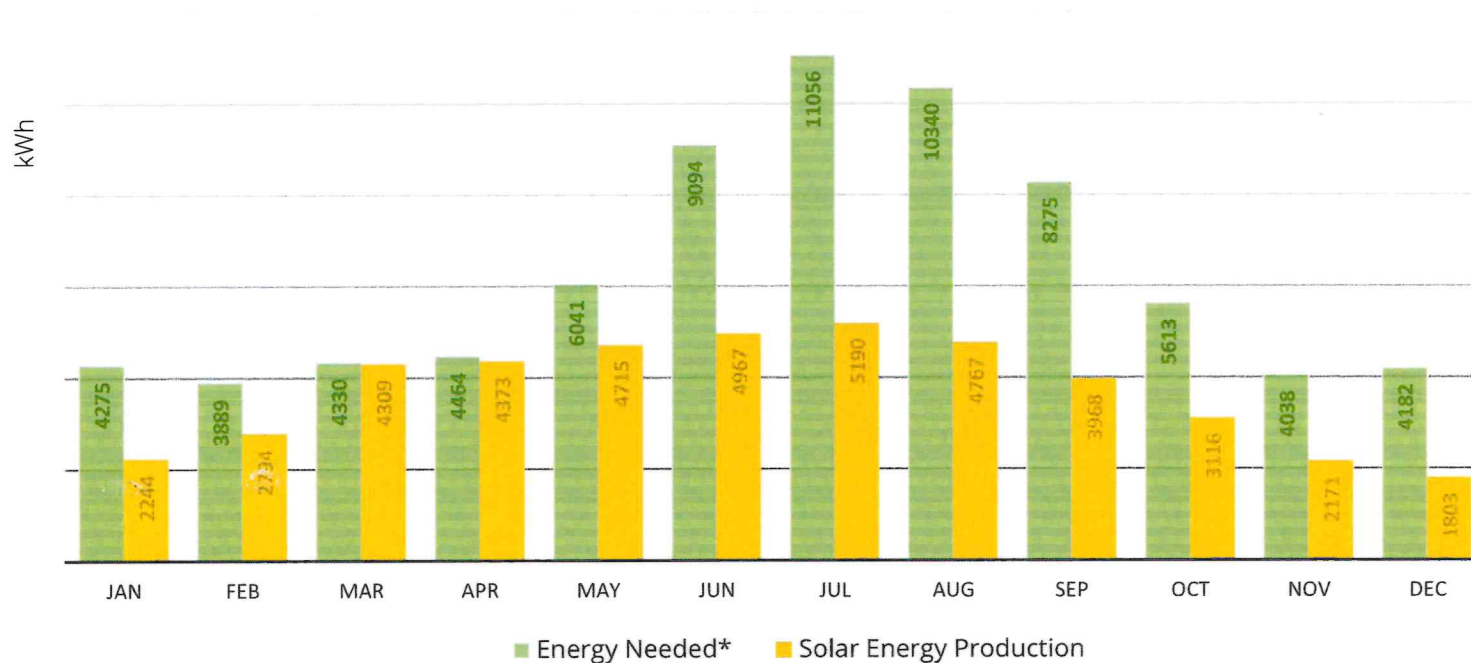


44,417

kWh Energy Produced
Annually by Solar

59%

of your kWh Energy Current Annual
Usage* Any remaining will be provided
by the grid



*Energy Needed: property electric usage as provided by customer

Beyond the gold



Over a 25 year period of using solar energy you will have saved:



15,995

TREES



70,678

GALLONS OF GAS



1,341,988

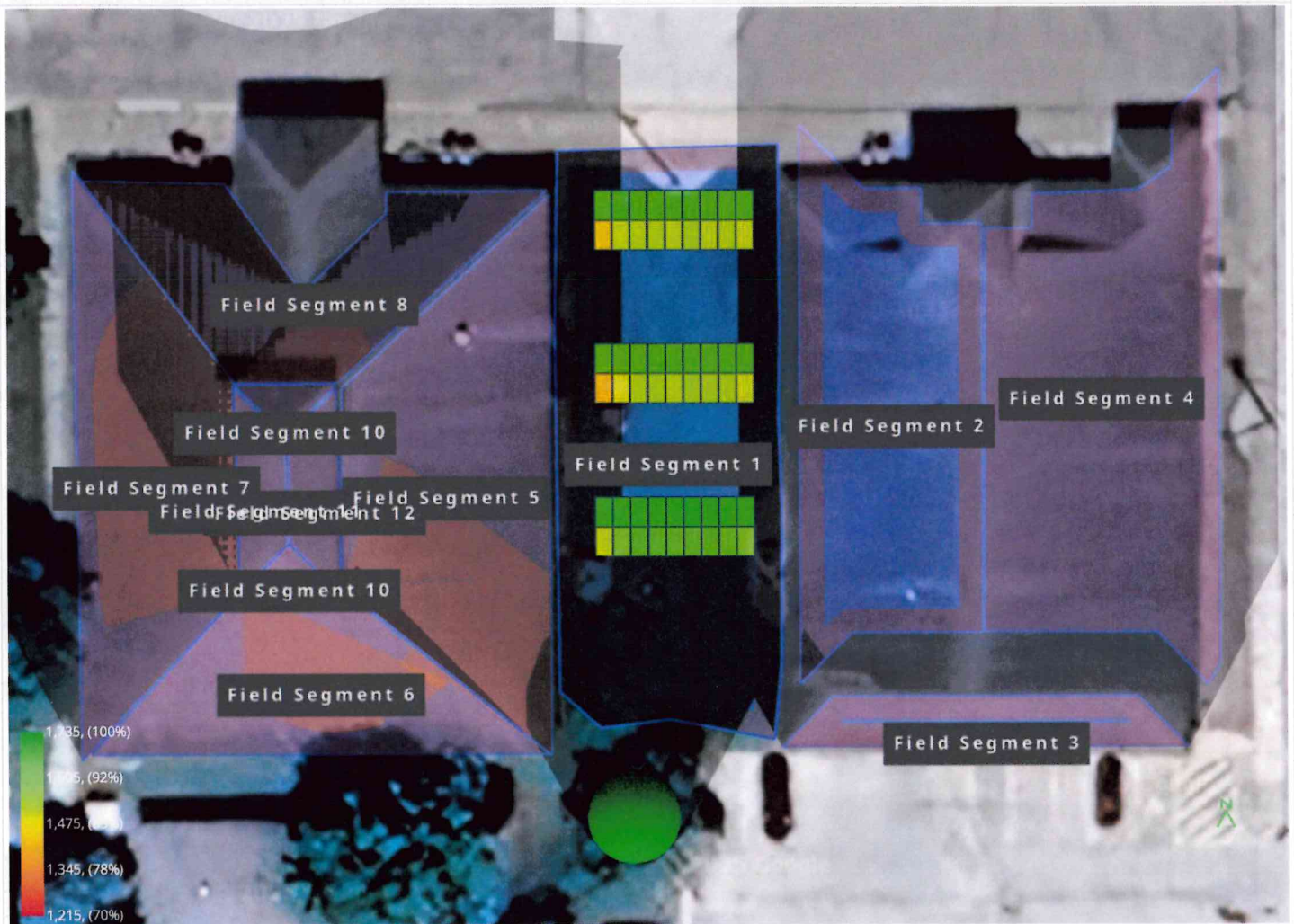
MILES DRIVEN



OLSON SOLAR ENERGY

32.4 kW Black River Falls - City Hall, 101 South Second St. Black River Falls, WI 54615

Shading Heatmap



Shading by Field Segment

Description	Tilt	Azimuth	Modules	Nameplate	Shaded Irradiance	AC Energy	TOF ²	Solar Access	Avg TSRF ²
Field Segment 1	Module: 33.0°	Module: 180.0°	54	32.4 kWp	1,579.3kWh/m ²	44.4 MWh ¹	99.6%	91.4%	91.0%
Totals, weighted by kWp			54	32.4 kWp	1,579.3kWh/m ²	44.4 MWh	99.6%	91.4%	91.0%

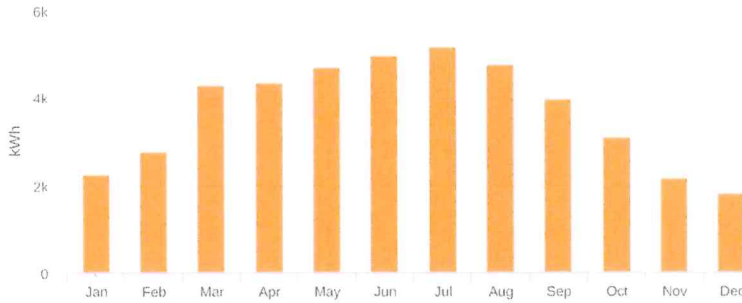
¹ approximate, varies based on inverter performance

² based on location Optimal POA Irradiance of 1,735.1 kWh/m² at 38.9° tilt and 182.8° azimuth

Solar Access by Month

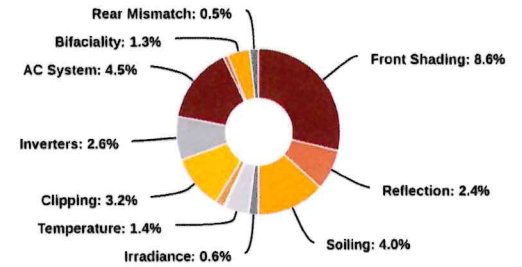
Description	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
Field Segment 1	83%	89%	92%	94%	94%	95%	95%	94%	92%	90%	86%	75%
Solar Access, weighted by kWp	82.8%	89.2%	92.1%	93.8%	94.5%	94.5%	95.0%	94.0%	92.3%	90.3%	86.4%	75.2%
AC Power (kWh)	2,244.6	2,794.3	4,308.9	4,372.6	4,715.2	4,967.4	5,189.8	4,766.8	3,968.0	3,116.0	2,170.5	1,803.2

Monthly Production

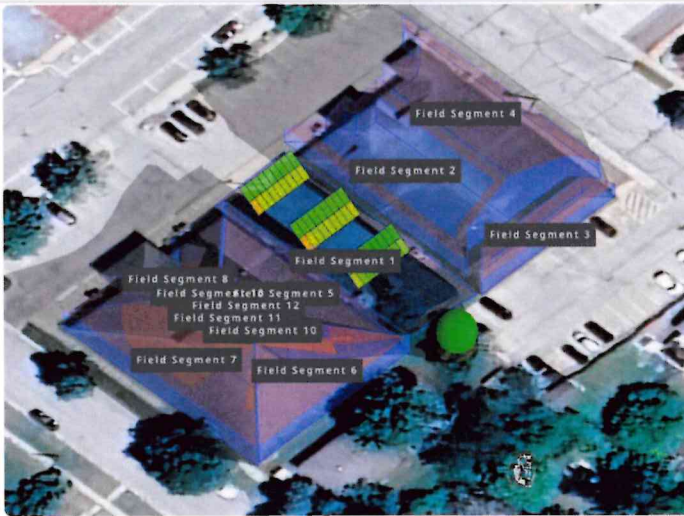


Month	GHI (kWh/m ²)	POA (kWh/m ²)	Shaded (kWh/m ²)	Nameplate (kWh)	Grid (kWh)
January	51.2	94.7	78.4	2,325.2	2,244.6
February	72.5	112.6	100.4	3,007.3	2,794.3
March	128.8	169.3	155.9	5,071.7	4,308.9
April	148.4	165.8	155.5	5,091.3	4,372.6
May	175.3	175.2	165.5	5,454.6	4,715.2
June	189.3	182.8	172.8	5,718.9	4,967.4
July	199.2	194.9	185.1	6,108.7	5,189.8
August	169.0	181.6	170.7	5,596.0	4,766.8
September	126.5	154.5	142.6	4,646.4	3,968.0
October	85.0	124.8	112.7	3,449.7	3,116.0
November	52.4	88.8	76.7	2,287.3	2,170.5
December	42.5	83.8	63.0	1,867.0	1,803.2

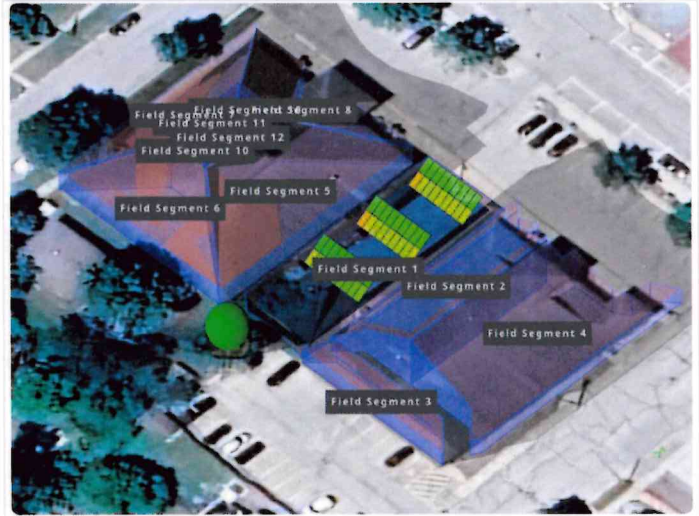
Sources of System Loss



Southwestern Angle



Southeastern Angle



32.4 kW Black River Falls - City Hall, 101 South Second St. Black River Falls, WI 54615

Report

Project Name Black River Falls - City Hall

Project Address 101 South Second St. Black River Falls, WI 54615

Prepared By Booker Bredlau
booker.bredlau@olsonsolarenergy.com



System Metrics

Design	32.4 kW
Module DC Nameplate	32.40 kW
Inverter AC Nameplate	25.65 kW Load Ratio: 1.26
Annual Production	44.42 MWh
Performance Ratio	79.3%
kWh/kWp	1,370.9
Weather Dataset	TMY, 0.04° Grid (44.29,-90.86), NREL (psm3)
Simulator Version	ad4598d5d4-498ca88566-b96fe3eb39-bc453ca460

Project Location

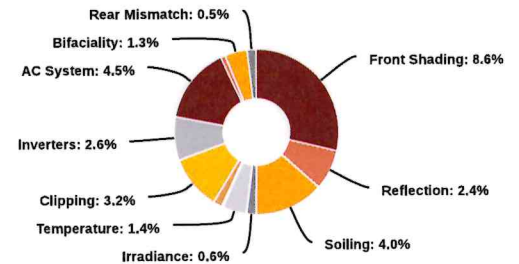


Monthly Production



Month	GHI (kWh/m ²)	POA (kWh/m ²)	Shaded (kWh/m ²)	Nameplate (kWh)	Grid (kWh)
January	51.2	94.7	78.4	2,325.2	2,244.6
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May	175.3	175.2	165.5	5,454.6	4,715.2
June	189.3	182.8	172.8	5,718.9	4,967.4
July	199.2	194.9	185.1	6,108.7	5,189.8
August	169.0	181.6	170.7	5,596.0	4,766.8
September	126.5	154.5	142.6	4,646.4	3,968.0
October	85.0	124.8	112.7	3,449.7	3,116.0
November	52.4	88.8	76.7	2,287.3	2,170.5
December	42.5	83.8	63.0	1,867.0	1,803.2

Sources of System Loss



Annual Production

	Description	Output	% Delta
Front Irradiance (kWh/m ²)	Annual Global Horizontal Irradiance	1,440.1	
	POA Irradiance	1,728.5	20.0%
	Shaded Irradiance	1,579.3	-8.6%
	Irradiance after Reflection	1,541.5	-2.4%
	Irradiance after Soiling	1,479.1	-4.0%
	Total Front Collector Irradiance	1,478.9	0.0%
Rear Irradiance (kWh/m ²) Supported only for fixed tilt racking	Global Incident Irradiance on Surface	805.0	-
	Surface Reflected Irradiance after Albedo	161.0	-80.0%
	Conversion from Surface Area to Collector Area	349.9	
	Surface Irradiance in Collector Plane	79.9	-77.2%
	Surface Irradiance in Collector Plane	79.9	
	Unshaded Irradiance on Rear Side	27.8	
	Beam Effective	1.5	
	Total Unshaded Irradiance on Rear Side	109.1	
	Shaded Irradiance on Rear Side	103.6	-5.0%
	Total Rear Collector Irradiance	103.6	
	Effective Rear Collector Irradiance	82.9	-20.0%
	Total Collector Irradiance	1,561.8	
	Nameplate	50,624.0	
	Output at Irradiance Levels	50,336.2	-0.6%
Energy (kWh)	Output at Cell Temperature Derate	49,610.1	-1.4%
	Output after Electrical Mismatch	49,566.0	-0.1%
	Output after Rear Mismatch	49,303.8	-0.5%
	Optimal DC Output	49,303.8	-0.5%
	Constrained DC Output	47,732.0	-3.2%
	Inverter Output	46,504.5	-2.6%
	Energy to Grid	44,417.3	-4.5%
Temperature Metrics			
	Avg. Operating Ambient Temp	10.8 °C	
	Avg. Operating Cell Temp	19.9 °C	
Simulation Metrics			
	Operating Hours	4319	
	Solved Hours	4319	

Condition Set

Description	Condition Set 1											
Weather Dataset	TMY, 0.04° Grid (44.29,-90.86), NREL (psm3)											
Solar Angle Location	Meteo Lat/Lng											
Transposition Model	Perez Model											
Temperature Model	Sandia Model											
Temperature Model Parameters	Rack Type			a		b		Temperature Delta				
	Fixed Tilt			-3.56		-0.075		3°C				
	Flush Mount			-2.81		-0.0455		0°C				
	East-West			-3.56		-0.075		3°C				
	Carport			-3.56		-0.075		3°C				
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D
	10	10	2	2	2	2	2	2	2	8	10	10
Albedo	J	F	M	A	M	J	J	A	S	O	N	D
	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Rear Mismatch Loss	10%			Rear Shading Factor					5%			
Module Transparency	0%											
Irradiation Variance	5%											
Cell Temperature Spread	4° C											
Module Binning Range	-2.5% to 2.5%											
AC System Derate	0.50%											
Module & Component Characterizations	Type	Component						Characterization			Bifacial	
	Module	VSUN600N-144BMH (Vsun)						Spec Sheet Characterization, PAN			True	
	Inverter	IQ8P-3P-72-E-US (208V) (Enphase Energy Inc.)						Spec Sheet			N/A	

Components

Component	Name	Count
Inverters	IQ8P-3P-72-E-US (208V) (Enphase Energy Inc.)	54 (25.65 kW)
AC Panels	6 input AC Panel	1
AC Home Runs	12 AWG (Copper)	1 (239.8 ft)
AC Branches	1/0 AWG (Aluminum)	6 (1,071.1 ft)
Module	Vsun, VSUN600N-144BMH (600W)	54 (32.40 kW)

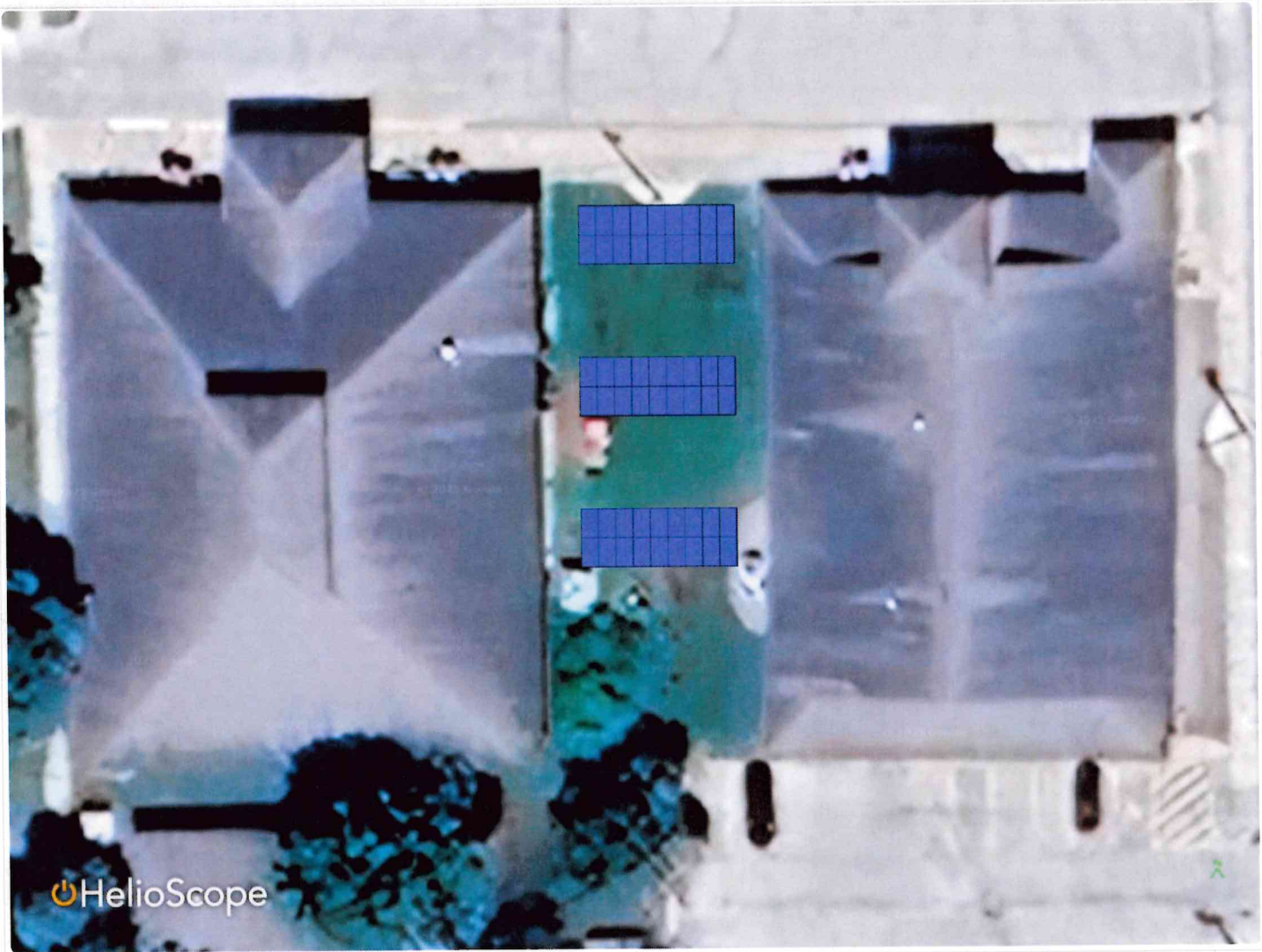
Wiring Zones

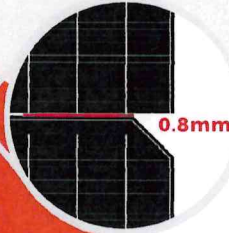
Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	1-1	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1	Fixed Tilt	Portrait (Vertical)	Module: 33°	Module: 180°	20.0 ft	2x1	27	54	32.40 kW
Field Segment 2	Flush Mount	Portrait (Vertical)	26°	270°	20.0 ft	2x1			0
Field Segment 3	Flush Mount	Portrait (Vertical)	26°	180°	20.0 ft	2x1			0
Field Segment 4	Flush Mount	Portrait (Vertical)	20°	90°	20.0 ft	2x1			0
Field Segment 5	Flush Mount	Portrait (Vertical)	20°	90°	20.0 ft	2x1			0
Field Segment 6	Flush Mount	Portrait (Vertical)	26°	180°	20.0 ft	2x1			0
Field Segment 7	Flush Mount	Portrait (Vertical)	26°	270°	20.0 ft	2x1			0
Field Segment 8	Flush Mount	Portrait (Vertical)	20°	0°	20.0 ft	2x1			0
Field Segment 10	Flush Mount	Portrait (Vertical)	26°	180°	20.0 ft	2x1			0
Field Segment 10	Flush Mount	Portrait (Vertical)	26°	0°	20.0 ft	2x1			0
Field Segment 11	Flush Mount	Portrait (Vertical)	26°	270°	20.0 ft	2x1			0
Field Segment 12	Flush Mount	Portrait (Vertical)	26°	90°	20.0 ft	2x1			0

Detailed Layout2





Micro Gap - Cell gap reduced to 0.8mm

VSUN610N-144BMH

VSUN610N-144BMH

VSUN600N-144BMH

VSUN590N-144BMH

VSUN605N-144BMH

VSUN595N-144BMH

VSUN585N-144BMH

610W

Highest power output

23.61%

Module efficiency

1.0%

First-year degradation warranty

0.40%

Annual degradation over 30 years

KEY FEATURES

TOPcon TOPcon technology



Higher output power



MBB technology with Circular Ribbon



Positive tolerance offer



Bifacial cells, converting more sunlight into electricity



Better shading tolerance



Better temperature coefficient



Excellent PID Resistance



Lower LCOE



UL 61730 & CSA 61730
IEC 61215 & IEC 61730

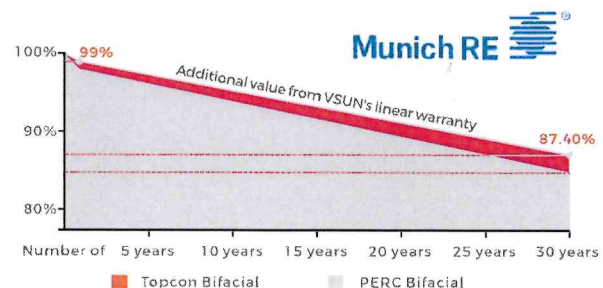
ABOUT VSUN

Invested by Fuji Solar, VSUN SOLAR is a solar solution provider with headquartered in Tokyo, Japan that offers reliability, high efficiency solar products and technology globally. VSUN is rated as BNEF Tier 1 PV module manufacturer, PVEL Lab "Best performer" and EcoVadis "Bronze Award".

PRODUCT CERTIFICATION



WARRANTY



Electrical Characteristics at Standard Test Conditions(STC)

Module Type	VSUN610N-144BMH	VSUN605N-144BMH	VSUN600N-144BMH	VSUN595N-144BMH	VSUN590N-144BMH	VSUN585N-144BMH
Maximum Power - Pmax (W)	610	605	600	595	590	585
Open Circuit Voltage - Voc (V)	53.34	53.12	52.9	52.69	52.48	52.25
Short Circuit Current - Isc (A)	14.13	14.08	14.03	13.98	13.93	13.88
Maximum Power Voltage - Vmpp (V)	45.32	45.12	44.92	44.71	44.5	44.29
Maximum Power Current - Imp (A)	13.46	13.41	13.36	13.31	13.26	13.21
Module Efficiency	23.61%	23.42%	23.23%	23.03%	22.84%	22.65%

Standard Test Conditions (STC): irradiance 1,000 W/m²; AM 1.5; module temperature 25°C. Pmax Sorting : 0~5W. Measuring Tolerance: ±3%.

Remark: Electrical data do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types.

Electrical Characteristics with different rear side power gain(reference to 605 front)

Pmax (W)	Voc (V)	Isc (A)	Vmpp (V)	Imp (A)	Pmax gain
635	53.12	14.78	45.12	14.08	5%
666	53.12	15.49	45.12	14.75	10%
726	53.20	16.90	45.04	16.09	20%
756	53.20	17.60	45.04	16.76	25%

Material Characteristics

Dimensions	2278×1134×35mm (L×W×H) 89.69×44.65×1.38 inches (L×W×H)
Weight	28.8kg / 63.49lbs
Frame	Silver anodized aluminum profile
Front Glass	AR-Coating toughened glass, 3.2 mm
Back sheet	Transparent white-mesh backsheet
Cells	12×12 pcs mono solar cells series strings
Junction Box	IP68, 3 diodes
Cable	Potrait: 1900 mm (cable length can be customized) , 1×4 mm ² or 12AWG

System Design

Maximum System Voltage [V]	1500
Series Fuse Rating [A]	30
Bifaciality	80%±10%
Fire Rating	Class C for IEC and TYPE 1 for US
Protection Class	Class II
Temperature Range	-40 °C to + 85 °C
Maximum Surface Load	+5400/-2400 Pa +113/-50 psf
Application class	class A
Withstanding Hail	Maximum diameter of 25 mm with impact speed of 23 m/s

Packaging

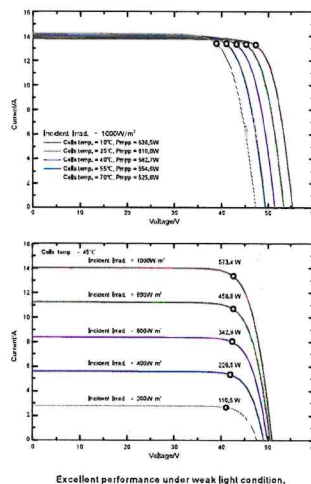
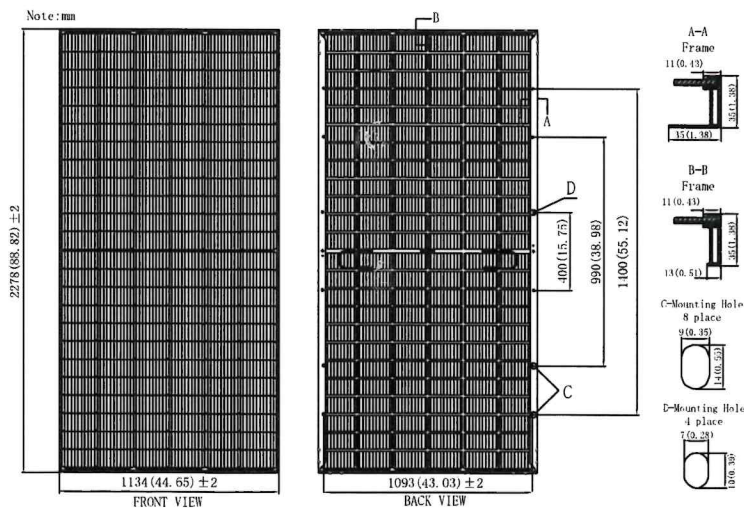
Dimensions(L×W×H)	2310×1125×1253mm / 90.94×44.29×49.33inches
Quantity per pallet	31 pcs
Container 20'	155
Container 40'	310
Container 40'HC	620

Temperature Characteristics

NOCT	45°C(±2°C)
Voltage Temperature Coefficient	-0.26%/°C
Current Temperature Coefficient	+0.046%/°C
Power Temperature Coefficient	-0.30%/°C

Dimensions

IV-Curves





IQ8 Commercial Microinverters

The high-powered, smart grid-ready Enphase IQ8P-3P and IQ8H-3P Microinverters are specifically designed for 208 V three-phase interconnection for small commercial solutions.

Each microinverter integrates with the IQ Gateway Commercial 2 and the Enphase App monitoring and analysis software.

With simplified design, improved energy harvesting, and advanced monitoring, microinverters offer true peace of mind during operation and maintenance.



The IQ Series Microinverters extend the reliability standards set forth by previous generations and undergo over a million hours of power-on testing, enabling Enphase to provide an industry-leading warranty of up to 25 years.*

* 25-year warranty is valid, provided an Internet-connected IQ Gateway is installed.

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Easy to install

- Lightweight and compact with plug-and-play connectors
- Power line communication (PLC) between components
- Faster installation

High productivity and reliability

- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

Smart Grid Ready

- Complies with the latest advanced grid support
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) and IEEE 1547 (UL 1741-SB) requirements

IQ8 Commercial Microinverters

INPUT DATA (DC)		I08P-3P-72-E-US		I08H-3P-72-E-US	
Commonly used modules for pairing ¹	W	380-640		320-540	
Module compatibility ¹		54-cell/108 half-cell, 60-cell/120 half-cell, 66-cell/132 half-cell and 72-cell/144 half-cell			
Maximum input DC voltage	V			63	
Peak power tracking voltage	V	35.5-53		28.5-45	
Operating range	V			16 - 63	
Min./Max. start voltage	V			21/63	
Max. DC continuous current (module I _{mp})	A			14	
Max. input DC short-circuit current	A			25	
Max DC short circuit current (module I _{sc})	A			20	
Overvoltage class DC ports				II	
DC port backfeed current	A			0	
PV array configuration		1 x 1 ungrounded array; no additional DC side protection required; AC side protection requires max 20A per branch circuit			
OUTPUT DATA (AC)		I08P-3P-72-E-US		I08H-3P-72-E-US	
Peak output power	VA	480		384	
Maximum continuous output power	VA	475		380	
Nominal (L-L) voltage/range ²	V	208/183-229	220/198-242	208/183-229	220/198-242
Maximum continuous output current	A	2.28	2.16	1.83	1.73
Nominal frequency	Hz			60	
Extended frequency range	Hz			47-68	
Maximum microinverters per 20A 3 Phase branch circuit ³		12	12	15	15
Overvoltage class AC port				III	
Power factor setting				1.0	
Power factor (adjustable)		0.85 leading ... 0.85 lagging			
EFFICIENCY		I08P-3P-72-E-US		I08H-3P-72-E-US	
Peak efficiency	%	97.8		97.7	
CEC weighted efficiency	%	97.5		96.5	
MECHANICAL DATA					
Ambient temperature range		-40°C to +65°C (-40°F to +149°F)			
Relative humidity range		4% to 100% (condensing)			
DC connector type ⁴		Enphase EN4 bulkhead; ECA-EN4-S22-12 : EN4 (TE PV4-S SOLARLOK) 150 mm/5.9" to Staubli MC4 adapter cable pair (Default supply) ⁵			
Dimensions (H x W x D)		265 mm x 200 mm x 35 mm (10.4" x 7.9" x 1.4") without bracket			
Weight		1.6 kg (3.5 lb)			
Cooling		Natural convection			
Approved for wet locations		Yes			
Enclosure		Class II double-insulated, corrosion resistant polymeric enclosure			
Environmental category/UV exposure rating		Outdoor—NEMA Type 6/IP67			
FEATURES					
Communication		Power line communication (PLC)			
Monitoring		Enphase App monitoring and analysis software. Both options require installation of an IQ Gateway Commercial 2.			
Compliance		CA Rule 21 (UL 1741-SB), UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01. This product is UL-Listed as PV rapid shutdown equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 rapid shutdown of PV systems for AC and DC conductors, when installed according to manufacturer's instructions.			

(1) Pairing PV modules with wattage above the limit may result in additional clipping losses. See the compatibility calculator at <https://link.enphase.com/module-compatibility>. (2) Nominal voltage range can be configured if required by the utility. (3) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area. (4) Enphase IQ8P-3P and IQ8H-3P Microinverter bulkhead and adapter cable male, female DC connectors must only be mated with the identical type and manufacturer brand of male/female connector. (5) Qualified per UL subject 9703.

IQ8P-3P-H-DSH-00236-2.0-EN-US-2023-11-16

Revision history

REVISION	DATE	DESCRIPTION
DSH-00236-2.0	November 2023	Updated the specifications.
DSH-00236-1.0	October 2023	Initial release.
		Previous releases.

GROUND FIXED TILT



GROUND FIXED TILT (GFT) represents the culmination of knowledge acquired over 15 years of experience providing durable ground-mount solutions. A synergy of steel components and aluminum parts deliver performance with the lowest system cost. Installation savings are captured through efficiently engineered components, pre-assembled braces, kitted hardware and integrated bonding for optimized construction sequencing. Developed to set the standard on utility-scale installations, GFT has evolved into DGFT to accommodate a single array within a backyard delivering engineered cost savings to meet your project needs.



NOW FEATURING

DGFT

SCALABLE TO ANY SIZE PROJECT

FEWER STEPS • LESS PARTS • BEST SERVICE • QUALITY PROVIDER

GROUND FIXED TILT



SIMPLE DESIGN STANDARD COMPONENTS

- Designed to meet a variety of ASCE wind, exposure, and snow conditions by simply increasing or decreasing the number of foundations within a table
- Standard components mount both 60 cell & 72 cell modules
- Configure GFT tables up to 2x30 in portrait to meet string size or other design constraints
- Standard 20° & 30° tilt options with custom tilt angles for projects greater than 1 MW

STRAIGHT-FORWARD INSTALLATION LESS PARTS & FEWER STEPS

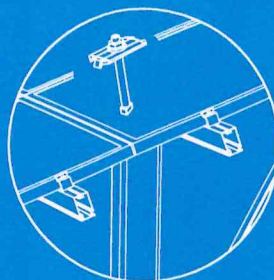
- Single post configurations with driven or cast-in-place foundation options
- Pre-assembled braces and kitted hardware
- Pre-punched mounting holes yield maximum installation adjustability
- Industry standard SOLARMOUNT module mounting hardware
- Snap-on wire management clips
- Internal splices provide continuous beam spans with a finished appearance
- Compact components allow for assembly by two people

EXPEDITED PERMITTING DOCUMENTATION AT YOUR FINGERTIPS

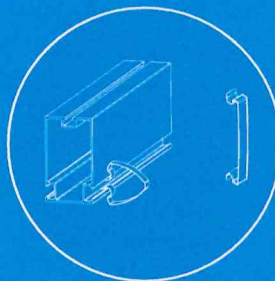
- State-specific certification letters with table designs sealed by a Professional Engineer
- Detailed standard construction drawings
- Critical connections with positive stops eliminate concerns during inspection
- SOLARMOUNT integrated bonding hardware with UL2703 certification

UL2703 ELECTRICAL
BONDING &
GROUNDING

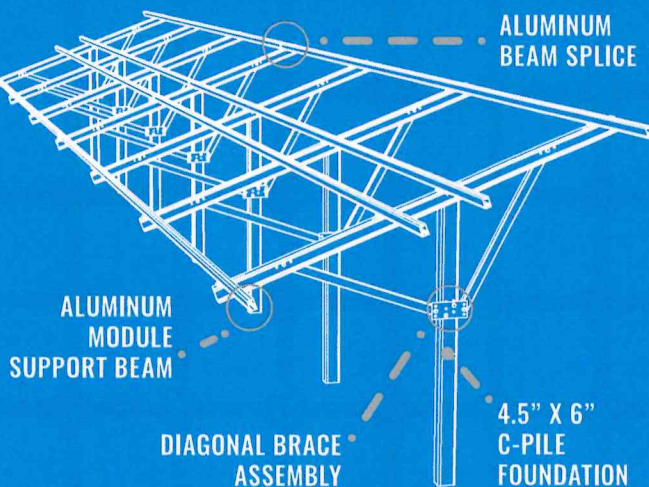
STANDARD SOLARMOUNT
MODULE CLAMPS
W/ INTEGRATED BONDING



SNAP-ON
WIRE MANAGEMENT



ALUMINUM
BEAM SPLICE



UNIRAC CUSTOMER SERVICE MEANS THE HIGHEST LEVEL OF PRODUCT SUPPORT



UNMATCHED
EXPERIENCE



CERTIFIED
QUALITY



ENGINEERING
EXCELLENCE



BANKABLE
WARRANTY



DESIGN
TOOLS



PERMIT
DOCUMENTATION

ON-TIME DELIVERY

No waiting. Our goal is simple: Consistently deliver solutions and services correctly, efficiently and dependably to exceed your expectations. Our world-class operations provide a 99% on-time delivery to help you meet your commitment dates.

CERTIFIED QUALITY PROVIDER

Unirac is the only PV mounting vendor with ISO certifications for 9001:2015, 14001:2015 and OHSAS 18001:2007, which means we deliver the highest standards for fit, form, and function. These certifications demonstrate our excellence and commitment to first class business practices.

BANKABLE WARRANTY

Unirac has the financial strength to back our products and reduce your risk. Have peace of mind knowing you are receiving products of exceptional quality. GFT is covered by a twenty (20) year limited product warranty on all parts.

PROTECT YOUR REPUTATION WITH QUALITY RACKING SOLUTIONS BACKED BY ENGINEERING EXCELLENCE AND A SUPERIOR SUPPLY CHAIN

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