

Bid Document
Solar Electric System Installations for:

Greater Bayfield Waste Water Treatment Plant Commission (GBWWTPC)

Date Bid Document released: March 5, 2019
Response Due: April 19, 5:00pm, 2019

Section 1: Background and Objectives

The Greater Bayfield Waste Water Treatment Plant Commission (Owner) seeks proposals for a solar electric photovoltaic (PV) systems totaling 100 kilowatts (total ac rated inverter capacity) installed at their waste water treatment plant (WWTP) located in Bayfield, WI. The PV systems shall be fully installed, tested and operational no later than October 30, 2019. An earlier project completion date is preferred. The site is in the electric service territory of Xcel Energy.

The objective of this bid document is to identify the most qualified PV installer (under the selection criteria herein) to design, specify, supply, install, commission, and perhaps maintain the PV system including all switchgear. The Owner's primary goals for the PV system is: maintenance-free 30-year operations, with no downtime and reliable electric bill savings.

Niels Wolter of Madison Solar Consulting is supporting the Owner's contractor selection process. Communications regarding this bid document should be with Niels Wolter whose contact details follow:

Niels Wolter
dba Madison Solar Consulting
2734 Kendall Ave.
Madison WI, 53705
niels.solar@gmail.com
608.216 4452

Project Schedule

Activity	Date
Request for Proposals issued	March 5, 2019
RSVP for bidder's site visit	March 22, 2019, by 5 pm
Bidder questions due	March 22, 2019, by 5 pm
Mandatory Bidder Site Visit	April 3 th (details about the site visit provided by March 22 st)
Proposals due (emailed to Owner and Niels Wolter)	April 19, 2019, 5:00 pm
Contractor Selected	May 3, 2019
Systems commissioned, utility interconnected, and fully operational	October 30, 2019

Section 2: Solicitation Process

Each respondent must demonstrate that they satisfy the minimum requirements described in Section 3 in order to be an eligible respondent. The response must meet the requirements in Section 4 and must adequately address all questions that may arise during the bidding process.

Responses must be submitted electronically, signed by an authorized officer or an agent of the respondent. Niels Wolter and the Owner (email address: cityclerk@cityofbayfield.com) must both receive an electronic PDF copy of the respondent's package no later than April 19th, 2019 at 5:00pm. Responses submitted after this date cannot be accepted, and responses that are incomplete or do not conform to the requirements of this bid document will not be considered.

A mandatory bidder site visit will be held April 3rd, 2019. Interested bidders must RSVP for the site visit, by contacting Niels Wolter before 5 pm on March 22nd, 2019. Detailed information about the site visit will be provided to bidders that RSVP'd. The site visit will be coordinated with other area PV projects listed in Section 3.

Section 3: Minimum Project Requirements That Must be Included in Proposals

Proposals submitted in response must respond to each of the areas identified herein, including obligations of each party as envisioned by the respondent. Proposals must provide sufficient information to enable the Owner to understand the overall proposal and the services to be provided. The Owner reserves the right to deem any proposal as non-responsive and to give it no further consideration. The Owner also reserves the right to request clarification and/or additional information from any respondent.

1. General Assumptions

Assume that:

- The PV array is fixed (i.e., non tracking)
- The bottom of PV array is 4' or more above the ground level
- The site has 480/277 volt, 3 phase, wye connection electric service (Appendix 1)
- The PV system will be owned by the GBWWTPC (Owner)

The Owner's PV system is expected to be funded by a Focus on Energy RECIP grant in the amount of: \$56,408.80. Award notification will be on March 29, 2019 and this project moving forward is likely contingent upon receiving this funding.

The Owner's project is part of a larger effort by Cheq Bay Renewables and the Bayfield/Washburn community to site six larger PV systems, with a total capacity of 530 kW ac on public buildings in Bayfield County in 2019. Other PV project sites include:

1. Washburn School District Elementary School, 100 kW ac and High School 100 kW ac, Focus on Energy, Office of Energy Innovation and Solar for Good funded
2. City of Washburn Waste Water Treatment Plant, ground mounted, 100 KW ac, Focus on Energy funded
3. Bayfield County, Jail 95 KW ac and Garage 35 kW ac, Focus on Energy funding expected

The Washburn/Bayfield community intends to coordinate the bidding of the Owner's project and the projects shown above as a group to achieve better pricing. However, at this time the Owner's

project and Bayfield County's project have not received Focus on Energy funding. The Owner and the Bayfield County sites applied for RECIP funding in February 2019 and awards will be announced on March 29, 2019. Bidders will be informed of the status of the individual projects as soon as the individual projects are informed.

The solar electric systems must:

- Be designed, specified and installed to maximize cost effective electric power production
- Be designed, specified and installed to minimize maintenance and repair needs over the systems' first 30 years
- Be designed for easy access for maintenance and repairs
- Be designed, specified and installed to minimize Xcel Energy's interconnection costs
- Be designed, specified, installed and planned to minimize system downtime
- Operate with the site's 100kW back-up generator (Cummins model GGHH-5786409, 3 phase wye-connection)
- Use solar electric modules that:
 - Are premium Bloomberg Tier 1 modules
 - High efficiency panels
 - Have a 25-year production guarantee with at least 80% to 83% power output retained after 25 years
 - Have at least a 10-year product warranty (greater than 10 years preferred)
 - Are on California's List of PV modules
- Use inverters (and if needed optimizers or similar) that:
 - Have at a minimum, a 10-year warranty (greater than 10 years preferred)
 - Are on California's List of PV inverters
 - Meet NEC 2017 including the rapid shutdown requirements for roof mounted arrays
 - Meet UL 1741 Supplement A (i.e., are smart inverters)
 - Record data and display over the internet via Ethernet connection
 - Measure and record minute-by-minute solar power output
 - Have the ability to display data via Ethernet port connected to the internet
 - Provide system fault notification, using emails and/or text messages, sent to the system's owner and maintenance provider
- Use racking systems:
 - With at least a 10-year product warranty (greater than 10 years preferred)

The PV system installations shall be led by a NABCEP Certified PV Installation Professional.

The installation contractor must provide the following to the Owner:

- A five-year PV system installation/workmanship warranty (ten year preferred)
- A binder (hard copy and electronic) that describes the PV systems, including:
 - Component specifications
 - Component warranties
 - Component installation, operation and maintenance guides and instructions
 - Monitoring system operation guide and instructions
 - Installation warranty
 - System electrical drawings
 - Completed interconnection application
 - Other relevant information

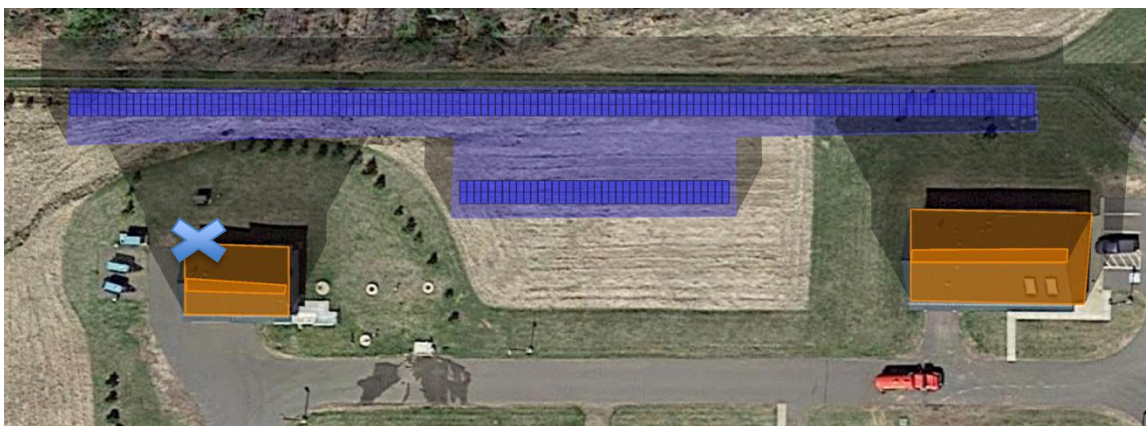
The installation contractor may be asked to provide:

- A five-year system maintenance contract (extendable for up to 30 years). The maintenance services, at a minimum, should include:
 - Training of the Owner's staff to correct easily remedied issues
 - Coordinating with Owner's staff to correct easy to remedy issues
 - Responding to fault notifications
 - Regular assessment of the system's output to identify issues
 - Making site visits for trouble-shooting, or otherwise, as needed
 - Annual system inspections, at a minimum
 - Communications with and reports to Owner's staff
 - Training Owner's staff to operate and maintain the PV systems at the end of the maintenance contract (if needed)

WWTP: 100 kW ac PV System



Google Earth site Image of the WWTP



Likely WWTP PV system siting. Blue "X" is location of electric meter and interconnection cabinet.

WWTP site address: 85025 Old San Road, Bayfield, WI 54814

Ground Mounted 100 kW ac

The PV system shall use fix-mounted racking, facing to the south and using the best array layout (tilt angle, row spacing, etc.) to maximize the system's annual solar generation. Any bushes/trees in the array area or shading the array will be removed by the Owner.

2. Code and Standards
 - Installation should meet or exceed all relevant building and electrical codes (including the 2017 National Electric Code)
 - Modules and racking must comply with wind uplift requirements per the American Society of Civil Engineers Standard for Minimum Design Loads for Buildings and Other Structures, and must be able to withstand design wind speeds of at least 120 mph (3-second gusts)
 - System installation must conform to Occupational Health and Safety Administration (OSHA) directives

3. Warranty and Service Contract Requirements
 - Please provide copies of manufacturer warranties on all relevant products as an attachment to your bid
 - Please provide a copy of the installation/workmanship warranty (showing a five-year minimum) as an attachment to your bid

4. Requested Installer Support Services

Beyond the standard design and installation services installer will:

 - Lead all permitting activities
 - Lead the Owner's applications for interconnection, including
 1. Be available to answer questions, provide additional information, etc., to Xcel Energy, if requested by the utility
 2. Attend the utilities' interconnection testing and/or commissioning of the system if requested by the utility
 3. Provide other standard procedures as needed for successful installation, commissioning and operation of the solar system

5. Disposal of Packaging Materials and Other Waste Streams
 - The contractor is required to properly dispose all packaging materials and other waste streams resulting from the installation. The contractor can use Owner's recycling systems for corrugated cardboard, plastic film and scrap steel.

6. Insurance Responsibility

The Contractor performing the installation and maintenance services must provide:

 - General Liability including Products and Completed Operations with a minimum limit of \$1,000,000 per occurrence naming GBWWTPC as an additional insured as respects all work done. The additional insured form should be a CG2010 or its equivalent to include completed operations for the additional insured – not just during ongoing operations.
 1. General Liability coverage should be primary and non-contributory
 2. General Liability limit should apply per project
 - Worker's Compensation coverage as required by Wisconsin Statutes for all employees engaged in the work. Certificates of Insurance are required for Contractor and all Sub-Contractors
 - Waiver of Subrogation on General Liability and Worker's Compensation
 - Auto liability- owned & non-owned, primary & non-contributory – Minimum \$1,000,000 CSL
 - All Insurance carriers must have at least an AVII rating in the Best guide
 - All policies must provide a 60 days written notice of cancellation
 - Umbrella Liability coverage, following form, with a minimum limit of \$2,000,000.

- Demonstrate access to payment and performance bonds in the bid amount for insuring complete and timely installation of the project.

7. Good Faith

Both parties agree to negotiate in good faith to adjust actual pricing as necessary for specific sites to accommodate unique site requirements. Price changes will be implemented via change-order based on mutual consent of both parties.

8. Completion date

- Contractor must have the PV system installed, inspected and commissioned by October 30th to satisfy the requirements of the Focus on Energy RECIP grant program. As per RECIP rules funding could be reduced by 25% if this deadline is not met. Contractor must notify the Owner by September 15, 2019, and as soon as possible after September 15th, of any issue(s) that may delay project's completion beyond the October 30th, 2019 date. If not, the contractor will reimburse the Owner of any loss of Focus on Energy funding for not meeting the project's completion date (i.e., October 30th, 2019).

Section 4: Bid Document Components

Please clearly number each section for our ease of evaluation.

1. Transmittal Letter - Please provide a statement signed by a party authorized to sign binding agreements for projects of the type contemplated herein -- the letter shall clearly indicate that the respondent has carefully read all the provisions in this Bid Document. Please include information as to your company's ability to meet the installation deadline, what could prevent your company from meeting the deadline, and what remedies your company could offer the Owner if the deadline is not met.
2. Product/technology description
Respondents shall:
 - a) Describe the solar electric system; including line drawings of the PV system and an initial drawing of the array.
 - b) State that the PV system and components will comply with all of the requirements of Section 3, or list the items that would not comply and state why.
 - c) Identify the proposed modules, inverters, and racking and how they best meet the needs of the Owner.
 - 1) Provide information about any potentially adverse effects.
 - d) Provide the specifications for all components (conduit, wiring, combiner boxes, connectors, disconnects, etc.) and installation practices to best ensure maintenance free 30-year PV system operations
 - e) For the solar electric system provide:
 1. The array orientation (azimuth and tilt angle from the horizontal), distance between rows and, distance from the base of the PV array to the ground level
 2. To what wind speed (3-second gust) will the array be designed to withstand
 3. Where and how the inverters will be located and mounted

4. The utility's metering needs and expected costs (if any)
 5. The expected utility interconnection fees and expected costs
 6. Other relevant project details
3. Provide the estimated total annual kWh output for the PV system. Please provide your estimates of snow, obstacle and array self-shading. Please state your assumptions and show your calculations.
 4. Warranties
Respondents shall provide the documentation and state clearly the warranty period and type for:
 - a) Modules
 - b) Inverters
 - c) Racking
 - d) Installation/workmanship (five year minimum)
 5. Provide the lead installer's name and their NABCEP PV installation professional certification number
 6. Describe the strategy for minimizing system downtime caused by PV system faults (for issues covered by the installation/workmanship warranty and component warranties). In particular describe:
 - a) Training and using Owner's personnel for simple procedures
 - b) When installation provider's staff will be sent to the site
 - c) Location of installation provider's maintenance staff, travel time and response time
 7. Describe your recommended inverter and module replacement strategy over the systems' anticipated 30-year minimum life. This could include purchasing extra components (how many), purchasing extended inverter warranties, or other.
 8. Pricing
Please note that pricing should include any site-specific conditions (e.g., hours of availability, scaffolding requirements for roof access, roof work safety requirements, parking, crane sites, etc.). The Owner will not approve change orders due to special or unforeseen work conditions.
 - a) Clarify any pricing assumptions inherent in your bid at the time of submittal
 - b) Provide total installed cost (do not deduct incentives) for the PV system
 - c) Until what date is this pricing honored
 - d) Breakout the pricing, for each of the systems as follows:
 - 1) Installed system cost (i.e., break out separately the: inverters, modules, racking, balance of system, labor, shipping, permit fees, equipment rental, administration, engineering, etc.)
 - 2) The recommended inverter and module replacement strategy (cost of extra components, extended warranties or other)
 9. Other pricing options, please provide:
 - a) Pricing if selected installation firm completes the Owner's PV projects concurrently with (please price each of the three options below separately):
 - 1) The two Washburn School District projects 200 kW ac total
 - 2) The two Washburn School District projects and the Washburn WWTP PV project, 100 kW ac

- 3) The two Washburn School District projects, the Washburn WWTP PV project, and the two County projects (130 kW ac)
- b) Pricing and specs of an independent PV monitoring system:
 - The site has wireless internet service
 - The monitoring system shall:
 - Also monitor the site's electricity use
 - Allow the Owner to easily connect the PV system and building monitoring systems, to flat screen monitors (which the Owner will provide) and the Owner's websites
 - Allow the Owner, staff, and members of the public shall to easily download historic solar production and building use data from the monitoring system
 - Meet the requirements of Renewable Energy Credit markets
 - c) Five-year PV system maintenance services (cost per year)
 - 1) Describe the types and terms of the maintenance service, and how it differs from the 5-year installation and workmanship warranty
 - d) Year 6 to 15-year maintenance services (cost per year)
 - 1) Describe the types and terms of the maintenance service
 - e) The cost of making the PV systems battery ready. The battery system should be able to provide ancillary and bulk energy grid support services as well as reducing the Owner's usage and demand charges. Please describe changes needed for the PV systems to be battery ready.
10. Project schedule and timing. Respondents shall submit a schedule indicating dates for the expected milestones, with each task referenced as well as a start and completion dates for the project (an example schedule is attached as Appendix 2).
 11. Construction contract form. Respondents shall provide a blank copy of their standard construction contract form. A document that generally follows the AIA-A101 Standard Form Agreement is preferred (but not required). The sample construction contract shall show the expected payment schedule. The final payment will be made after the Owner receives the Focus on Energy RECIP grant and the final payment amount will equal the amount of the Focus on Energy grant.
 12. References

Respondents shall provide three or more references for commercial projects (at least two of which was in excess of 100 kW ac) that have been completed by the bidder in the last 2 years. Please note any systems that included batteries. The details needed for each system:

 - a. Location of system (city, state and electric utility)
 - b. Size of system
 - c. Brief system description (including any battery systems)
 - d. Contact information (phone and email) for someone at the system site or responsible for the system and familiar with respondent's work

Section 5: Evaluation Criteria

The principal evaluation criterion includes the following:

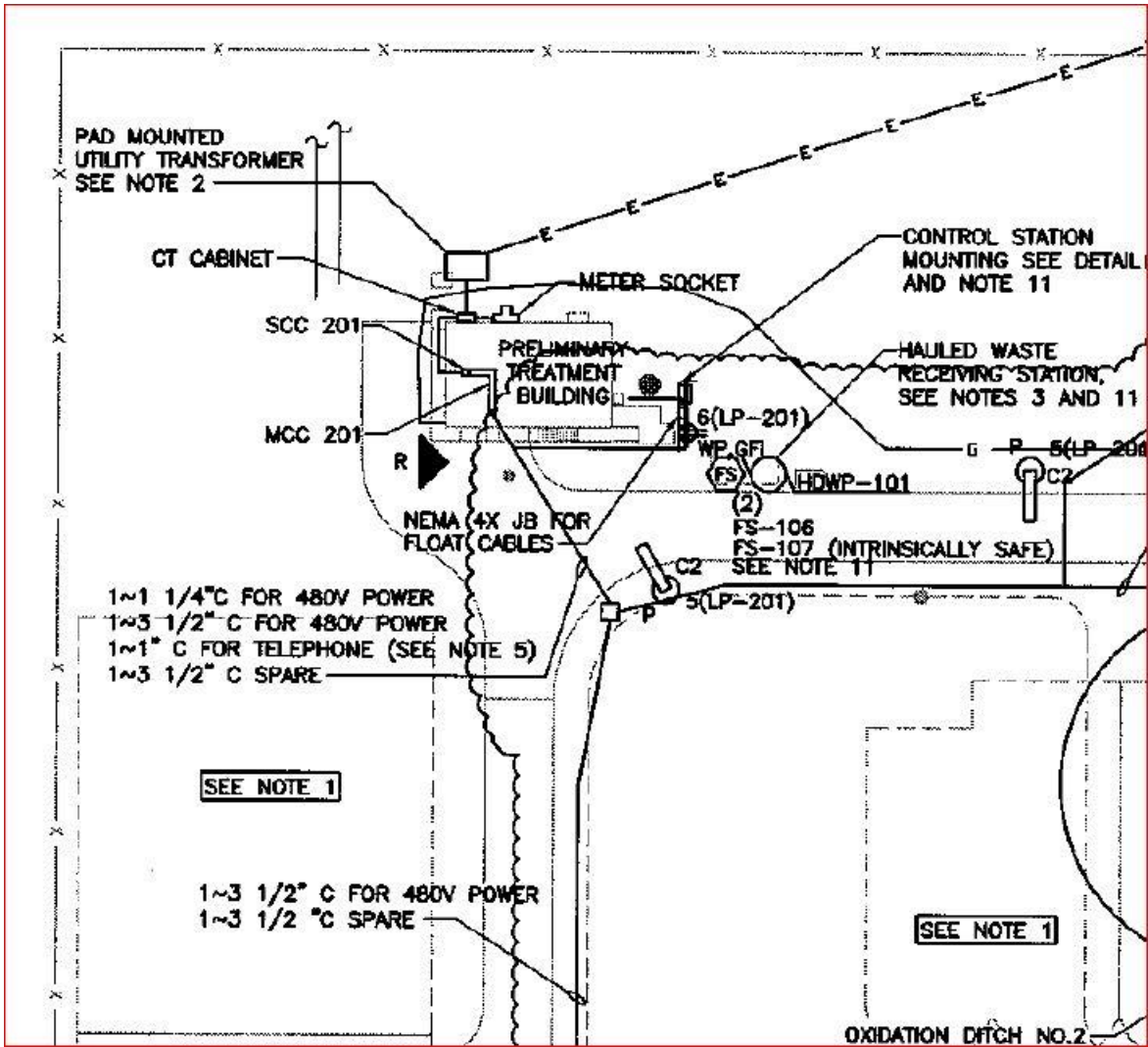
Criteria
1. System price
2. Likelihood that systems will be maintenance free with limited downtime
3. Ability to have the systems fully interconnected, commissioned, and placed in service on or before October 30, 2019
4. Prior experience in developing, designing and installing similar solar electric systems
5. Terms and quality of support and maintenance services
6. Overall quality of the response

The Owner reserves the right, at its sole discretion, to accept a response that does not satisfy all requirements but which, in the selection committee's sole judgment, sufficiently demonstrates the ability to produce, deliver, design, permit, install and satisfy the major requirements set forth in this document. The selection committee reserves the right to interview any or all respondents to this document, or to ask for additional information or clarifications. The Owner expects to complete its evaluation process to select qualified contractors, but reserves the right to change key dates and action as the need arises.

Section 6: General Rules

1. No Obligation – This bid document does not obligate the Owner to establish eligibility for any respondents, or to issue any subsequent bid documents or to enter into any agreements. The Owner reserves the right to cancel or re-issue this bid document at any time, and to solicit qualifications through any other appropriate method. The Owner further reserves the right to reject any and all bids or proposals, for any reason, and in its sole discretion.
2. Rejection of Proposals – The Owner's selection committee may reject any response that it deems to be incomplete, unresponsive, and inaccurate in its representation or which is unacceptable, for any reason.
3. Substitutions – Respondents may substitute or alter their responses subsequent to the submission date only if such changes are approved in writing to Madison Solar Consulting.
4. Cost of Proposal and Non Compensation – Each respondent is solely responsible for all costs associated with responding to this bid document. Neither the Owner nor Madison Solar Consulting will in any event reimburse any respondent for any costs associated with this bid document.
5. Delivery of Proposals - Each respondent is solely responsible for assuring a timely submittal of its response to Madison Solar Consulting and the Owner. Late responses will not be accepted. Proposals must be submitted electronically via email to Niels Wolter and the Owner at the addresses noted above.
6. Withdrawal of Proposal – Responses to this bid document may be withdrawn after submission by written request to Madison Solar Consulting.
Disposition of Proposals – All submittals and the information therein become the property of the Owner upon submittal. Proposals shall be returned only at the Owner's sole discretion.

Appendix 1. Electric Connection Schematic



Appendix 2. Example Project Schedule

Modify as appropriate

Activity	Date
Contractor Selected	May 3, 2019
Offer and finalization of contract negotiations	May 15, 2019
Execution and delivery of signed contract	
Commencement of design activities	
Building and electrical permit applications submitted (as appropriate)	
Building and electrical permit applications Approved (as appropriate)	
Interconnection Application submitted to the electric utility	
Interconnection Application approved by the electric utility	
Delivery of system components	
Construction begins	
Final inspection	
Utility interconnection testing	
Systems' commissioned, utility interconnected and fully operational	October 30, 2019