

CITY OF WASHBURN WASTE WATER TREATMENT PLANT

SOLAR PV

The solar installation at the City of Washburn's Waste Water Treatment Plant is part of a larger community project called the "Washburn/Bayfield Solar Project" developed by Cheq Bay Renewables. Besides the City of Washburn, it also involves the City of Bayfield, Bayfield County and the Washburn School District. All four site owners combined efforts to draw in a regional solar installer who might offer utility-scale pricing. Eagle Point Solar from Dubuque, Iowa filled that need and is installing all the area municipal projects totaling over 500kW of solar capacity.

Utility-scale pricing is important, not only to stretch tax-payer dollars, but because municipalities cannot use incentives like the Federal Investment Tax Credit for renewable energy because they don't pay taxes. An option, to use outside investors who monetize the tax credit and pass on savings to the municipality, is utilized in many other states, but currently not in investment-owned utility territory which is regulated by Wisconsin's Public Service Commission. Details regarding that are currently in Wisconsin's Dane County Circuit Court. Hopefully, this issue will be resolved soon and it will be easier for municipalities to install solar energy.

Bill Bailey, Cheq Bay Renewables for the City of Washburn



Drone photo by Jack Beagan

System overview

- Ground mounted, grid-tied PV installation
- Installed by Eagle Point Solar with electrical by Jolma Electric of Ashland
- Grid-tied to Xcel Energy with net metering

Technical specs

- 99 kW ac/124kW dc consists of 420, 295-watt solar modules manufactured by S-Energy, headquartered in South Korea with subsidiaries in the U.S. and Japan
- Modules Model SN295M-10
- AP Systems microinverters Model YC-1000, 4 modules per microinverter headquartered in Seattle, WA
- Ground mounted racking by Iron Ridge, Hayward, CA
- AP Factory and eGauge web-based monitoring
- Estimated generation is 147,600 kWh per year

Incentives

- WI Focus on Energy RECIP grant
- Eagle Point Solar community incentive
- WI State Trust Fund Loan Program at 4%

Costs

- Total cost including solar system and electrical: \$216,825
- Out of pocket costs after incentives: \$107,706
- Estimated payback of 13.5 years
- 25-year net present value at 4% discount rate: \$82,234

What is a microinverter?

Microinverters convert DC power to AC power at each module, or small group of modules, versus a string inverter that converts DC power from a large group of modules and is limited to the lowest performing module in the string. In a standard string inverter installation, if a tree shades a particular module, the whole string's production is reduced. If this same shading occurs on a module that has a microinverter, only that module is affected. Microinverters are relatively new in the solar marketplace, but are gaining acceptance.

Additional Information about the City of Washburn's involvement in the Washburn/Bayfield Solar Project developed by Cheq Bay Renewables can be found at www.cheqbayrenewables.org.