



CASE STUDY: Solar at Mid-State Technical College

PROJECT SUMMARY:

Mid-State partnered with the Midwest Renewable Energy Association (MREA) and several other technical colleges in an effort to help grow the local solar workforce through MREA's Solar Corps initiative. This initiative culminates in student participation in a high visibility installation on a public institution. As part of this partnership, we planned and installed a 50 kW DC system for the Stevens Point Campus. This campus is in downtown Stevens Point. We selected this location because it allows us to demonstrate our commitment to sustainable energy generation and community partnerships. This was also be a high-quality training experience for our students. We are proud to have partnered with the MREA on this project and feel that this system will continue to be a commercial roof training facility for future classes.

The system was designed by Renewable Energy Technician students during their Renewable Energy - Planning, Planning, Design and Project Management

course under the supervision of NABCEP certified instructors. Students were also be involved in the installation of the system. To help fund the project, we received grants from MREA's Solar on Schools initiative and Focus on Energy. We have allocated capital funding for this project to cover all the balance of system direct expenses of \$32,000.

The Solar array was installed on an EPDM flat roof utilizing a ballasted racking system. This is about 20% of the available roof space, thus providing opportunity for a larger array in the future. The system's inverter was also sized to allow additional solar panels to the system. This system size will generate around 55,500 kWh annually, representing 11% of the annual load. However, this facility has substantial demand charges, particularly in the summer peak times (\$13.90/kW peak), so the utility savings will be substantially greater than just energy offset.



"We are proud to have partnered with the MREA on this project and feel that this system will continue to be a commercial roof training facility for future classes."

-Statement from Mid-State Technical College



PROJECT PARTNERS:





SYSTEM AT A GLANCE:

- **Commissioned:** July 2020
- **System Size:** 50 kW DC
- **Expected Year 1 Performance:** 55,563 kWh
- **Array Tilt and Azimuth:** 10 degrees, 180 degrees
- **Racking:** Ironridge BX Ballasted System
- **Modules:** (135) PS M72 Bi-facial 370W
- **Inverters:** (1) SMA Sunny Tripower CORE1, 62 kW
- **Monitoring:** SMA Sunny Portal
- **Solar Installer:** Solar CBI, LLC
- **Total Billed System Cost:** \$40,500
- **Cash Grants, Rebates, Incentives::** \$8,500
- **Cost/Watt (Excluding Cash Grants):** \$.81
- **30-Year IRR:** 24.02%
- **Average Annual Savings:** \$7,382.00
- **30 Year Projected Cash-Flow:** \$253,318.00

**Total Billed Cost excludes Solar on Schools 50 kW in-kind grant valued at \$20,000.*

ENVIRONMENTAL BENEFITS:

In the first year the combined 252 kW DC system will offset CO₂ emissions equivalent to:



Electrical Usage of 7.5 Homes



109,633 Miles Driven by an Average Passenger Vehicle



48,691 Pounds of Coal Burned

ABOUT Mid-State Technical College:

Mid-State Technical College is one of 16 regional colleges in the Wisconsin Technical College System with campuses in Adams, Marshfield, Stevens Point, and Wisconsin Rapids. We offer associate degrees, technical diplomas, and certificates in a variety of high-demand career fields designed to meet local workforce needs. Mid-State has been training renewable energy professionals since 2008 and has trained hundreds of solar installers. We currently offer a two-year AAS Degree as a Renewable Energy Technician.

ABOUT MREA's Solar Corps:

The Solar Corps is a workforce development project that helps connect aspiring solar professionals with real work experience and opportunity. Solar installer is one of the fastest growing jobs in the U.S. And when it comes to jobs in solar, the Midwestern U.S. is in the running for the fastest growing region. As the need for qualified solar professionals grows, The Solar Corps works with colleges to connect students and recent graduates with real-work experience with solar contractors, and provides those contractors the opportunity to connect with qualified employees.



Learn more and access resources at:
midwestrenew.org/solar-on-schools