HOWL ADVENTURE CENTER

SOLAR PV

This was one of our best decisions of the entire project. The solar panels replaced an awning from our original plans to provide shade and rain protection on our south facing wall and outdoor customer space. Our building is very visible as people come in to Bayfield, and we wanted it to look interesting and inviting, and to have the solar awning be a focal point to spur thought and discussion about solar in our community and beyond. We have a lot of interest from our customers and it looks great! The cost was only 30% more than the cost of a plain awning. The incentives for businesses are impressive. The installation went well and it provides excellent shade and rain protection. Even without the incentives, it will pay for itself, provide electricity for many years, and outlast a simple awning, while being only slightly more expense up front. The output is compatible with our 3-phase power, and each panel has a micro-inverter of its own. We can easily see how much power we are generating on the internet because our micro-inverters communicate over wifi to their mothership. We would like to thank the solar community here, especially Bill Bailey and Gayle Chatfield of Cheq Bay Renewables, Bill Route and Karin Kozie for encouraging us, and John Johanning of Let It Shine Energy Services!

John & Mary Thiel, owners of Howl

System overview

- Awning style PV installation
- Installed by Let it Shine Energy Services with electrical by Anderson Electric
- Grid-tied to Xcel Energy with net metering

Technical specs

- 5.3 kW dc consists of 15, 355-watt solar modules manufactured by Seraphim
- Modules Model 6Ma-355W made in Mississippi
- 3-phase system, 5 modules per string per phase
- Inverted from DC to AC using Enphase IQ6 plus micro inverters
- Enphase Enlightened web-based monitoring
- Estimated generation is 6800 kWh per year

Incentives

- 30% Federal Investment Tax Credit for renewable energy
- MARCS accelerated depreciation for business
- Focus on Energy Prescription Grant paid for 12% of the system

Costs

- Total cost including solar system and electrical: $15,900
- Out of pocket costs after incentives: $5,700
- Estimated payback of 6.5 years
- 20 year annualized internal rate of return: 15.5%

What is a micro inverter?

Micro inverters convert DC power to AC power at each module versus a more common string inverter that converts DC power from a 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 micro inverter, only that module is affected. Micro inverters are relatively new in the solar marketplace, but are gaining acceptance and the Enphase micro inverters come with a 25 year warranty.