

PV for RVs: Introducing One of the Country's First RV Parks to Run on Solar Power

Solar levelized cost of electricity (LCOE) has dramatically declined over the last decade. Utility-scale PV LCOE dropped 85% between 2010 and 2020, roughly 17% annually. The trend continues as solar energy becomes even more cost-competitive with other forms of energy.

As the owner of the Glades Resort, an RV park in Moore Haven, Florida, Tom Tripoli noticed an opportunity to practice environmental stewardship and save money on his power costs by switching from traditional to renewable energy. So Tom went to work conducting research and doing due diligence and landed on SolarUtility Partners to develop a PV system that could meet his RV park's particular energy needs.

Now, the Glades Resort is one of the first RV parks in the country to be fully powered by a 1 Megawatt (MW) solar power station.



Overcoming Obstacles to Get Operational

Getting the PV system designed and ready for installation was complex, involving many moving targets and ambitious goals.

Moore Haven is located smack dab in the middle of the southern end of the Florida panhandle, where wind speeds can get very high, and hurricane season creates additional risks. This environment meant the PV installation required highly reliable solar panels and the correct solar structure to withstand potentially extreme weather conditions.

The Glades Resort also faced a high annual cost of electricity that feeds the power for RVs that use the park. In addition, the park's electrical system needed an upgrade to a three-phase power system. Due to this, the PV system required a highly customized design to deliver enough power for the Glades' needs and at the best value.

Then, SolarUtility Partners encountered a slight hiccup during the permitting process. One of the authorities having jurisdiction (AHJ) initially questioned the permit application because of the perceived size of the PV system. It took a little explaining from SolarUtility Partners to resolve what turned out to be a simple misunderstanding over the solar installation size that was much larger than ever what is a typical solar permit application.

The developers also obtained buy-in from residents. Even though the PV installation would be on private property, the developers didn't want the site to spoil the view of the lush vegetation and foliage for neighbors. So before breaking ground on the project, SolarUtility Partners surveyed neighbors and local residents to ensure the Glades wouldn't face opposition and recommended native vegetation that would create a visual barrier.

Both dealing with the AHJ and surveying residents highlight the importance of open communication and careful collaboration when developing larger PV projects. This general rule of thumb also applies to individuals who aren't immediate stakeholders, like neighbors and town residents.



Bringing the Project Together

SolarUtility Partners developed the highly-customized PV system design and drafted an interconnection plan and the three-phase upgrade to connect with Glades Electric Cooperative, the local distribution co-op.

The next step was procurement. SolarUtility Partners turned to Trina Solar's C&I Solutions for streamlined procurement of the major PV components, in this case, the modules, inverters, and trackers. Partnering with Trina C&I Solutions eliminated the need for SolarUtility Partners to deal with multiple suppliers, vendors, or distributors, which helped lower project soft costs.

For this project, Trina Solar provided 2,415 DUOMAX bifacial modules. Each module can provide up to 400W of power and harvest sunlight striking both the front and back face of the panel. Under the same conditions, bifacial

modules will produce more energy than mono facial modules with the same nameplate power. The DUOMAX module is also one of the industry's most reliable solar panels since they help reduce failures while improving system safety and performance. The panels' reliability and durability were crucial for a PV system that faced high wind speeds and hurricane risks.

With a complete development plan and all the major PV components procured, SolarUtility Partners then handed off the construction-ready project to SEMPower for the installation phase.

SolarUtility conducted PVSyst modeling and Energy Tool Base to determine the total project costs, energy production, and economics.

The modeling showed that the system had a shortened simple payback of 3.9 years, a 30-year levelized cost of electricity (LCOE) of \$0.014, and an internal return rate (IRR) of 23.55%.

Project Overview

- Customer: Glades Resort, Glades Electric Co-Op
- Location: Moore Haven, Florida
- Type: ground-mount, single-axis tracker
- Size: 1MW power station
- Modules: 2,415 modules DUOMAX 400W 144 Cell Monocrystalline Bifacial DEG15HC.20(II)
- Initiated: July 2020
- Completion: August 2021
- Warranty: 30-year Module Product Warranty

Trina Solar's C&I Solutions Streamlines

This complex project required an extremely customized design, so SolarUtility Partners turned to Trina Solar's C&I Solutions to make things easier and more efficient.

Trina's C&I Solution's innovative one-stop-shop model provides seamless and streamlined component procurement. Then, by engineering the design and handling the procurement process, Trina's C&I Solutions team ensures equipment interoperability and component optimization for faster, easier, and more efficient PV installations.

Want to learn more about how Trina Solar's C&I Solutions optimizes commercial solar projects? Reach out to the experts at Trina today.



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