

# HiQ Solar Case Study

## Solar Carports LLC, Sarasota, Florida



With well over 300,000 electric vehicles on the road now, a 70%+ growth rate, and growth predictions of four million EVs in the United States by 2024, it's not an overstatement to describe the rise of the electric vehicle as a transportation revolution. With that comes the need for infrastructure to support such a revolution, and that's where innovators such as Solar Carports LLC are stepping up. A Sarasota, Florida company active in all 50 states, Solar Carports is unique in offering customized yet affordable car-charging stations that are both scalable and retrofittable, serving both new construction and existing facilities. The company maintains a manufacturing center on each coast, in California and Virginia, reducing time and cost for customers, and by using domestic steel keeps everything "Made in USA". Satisfied customer's projects include a micro-grid installation in St. Petersburg, Florida for Duke Energy and Tesla, featuring a seven story parking structure outfitted with one of the world's largest battery systems.

With the rapid growth of EV adoption driving demand for carport charging, there is a corresponding need for more efficient solar charging technology that takes up less space on the project and less time to install, and is simpler to operate and maintain. Solar Carports LLC CEO Brad Carlson explains the reasons why.

"We'd reached the point in design flexibility and creativity where the most limiting factor was the solar power conversion system itself. Conventional inverters are large and heavy, and they need special mounting structures that take up space which could be used for vehicles, and also need protection from the elements in order to operate effectively long-term. In remote locations they can require considerable 'trenching' for power and communication cabling, which significantly adds to cost and installation time. Something more like a micro inverter in size and configuration but with the power of a large string inverter would be ideal for our application."





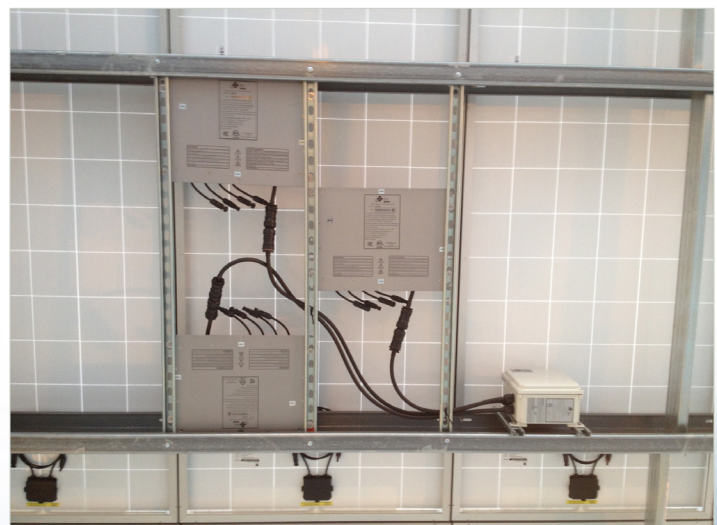
The ideal solution for Carlson’s application turned out to be HiQ Solar’s TrueString inverter, a compact 8 kW design uniquely suited for carport mounting. “It’s light, air cooled and enclosed in a NEMA6 rated enclosure, so there are no space restrictions to plan for, unlike other inverters which require about a foot of breathing space” explains Brad Carlson. “On carports, we can easily bolt them high in the structure, allowing us to customize our plans around power conversion right at the panel and in a very small space. It is almost mind-numbingly simple in concept and execution - there’s no internal wiring, it just requires ‘clicking’ the connections together.”

According to Carlson, installation of a HiQ system requires less than half the time of conventional string inverter systems. “With others we need two guys to lift everything into place and then pull in the wiring and communications; it takes a lot of staging and manhandling, often using scissor lifts on site. With HiQ we just bolt the inverters to the bottom of the canopy and run the snap-connector AC whip to the junction box. Our first ‘test case’ installation was a 100 kW system using nine inverters and we completed it in under five hours. And that included our learning curve! We expect to install upwards of 20 MW next year spread over several dozen major systems, and will be leveraging the blisteringly fast installation times built into the HiQ in order to achieve our goals.”

For Solar Carports, one of the biggest advantages with HiQ is the ability to send data over the AC line. Comments Brad Carlson, “this is a number one issue for us. With other systems, data has to make its way from inverter to inverter. With HiQ, everything goes back to the subpanel over the AC line. There’s no extra ‘pipe’ required, not category-rated cabling and no extra underground trenching. All you have to do is connect the Gateway to the subpanel, and you can even leave that outside in a small box right at the panel to keep everything contained within the structure. I can’t overemphasize the value of data over AC for simplifying installation and maintenance.” Another advantage is optimization and control. “Each string has its own MPPT, which is perfect” explains Carlson. “We’ve found other systems to be too complicated at the string level.”



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Brad Carlson



Solar Carports summarizes its value proposition and promise to customers as “prompt integration, unsurpassed durability, fewer maintenance issues and affordable customization.” With HiQ technology on board, the company is well equipped to keep delivering on it.

