



# Global Case Study

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AC Coupled Energy Storage System

Solis 1P Series



## Solis Inverters Help Support Paso Robles Home for Long-term Resiliency

Solar consultancy owner applies his day-to-day to building an off-grid powerhouse at his home.

### Background: A Rough Start in a New Home

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Mitchell M. Samuelian didn't realize when moving into his family dream home the hardships they were about to face. Between a \$1200 monthly electric bill and seemingly endless grid outages and weather events, Mitchell knew something had to be done and fortunately, given his expertise, he was well positioned to make a plan.

Mitchell is the CEO and Founder of NuConsult Services, LLC, a renewable energy consulting firm that specializes in supporting asset owners in various areas such as construction management, operations and maintenance (O&M), operational improvement, compliance, and safety in the renewable energy sector. NuConsult is actively managing multiple wind, solar, and battery storage construction projects, serving as an Owner's Representative, and is involved in the transition of over 1300 MW of solar projects to self-operations.



## Challenges & the Solution: Harnessing the Sun for Long-term Resiliency

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Not only was Mitchell concerned about his electrical bill, he was also concerned on ensuring his property could function properly independent from the grid. The property has a large well that supplies water to the home and, in the event of a grid outage, it would cease to function.

Fortunately, given his experience and that of his team, he was able to build an additional system to the Solis system that includes a smaller 2kW solar system with battery storage for the well. Both the Solis system and the smaller 2kW system are backed up by 24KW generator. The generator has an auto transfer switch to power both the home and the well simultaneously.



At 30 kW, the solar panel system is larger than your average residential system — it's as big as you can get before the utility provider would need to do an interconnection study. Samuelian oversized it to account for a guesthouse he's building on the property.

You won't find the solar panels on the roof. The system, from Erthos, is mounted flush against the ground. Samuelian, who is an angel investor in the company, says the earth-mount install eliminates the need for costly racking, absorbs heat from the ground to maintain more consistent temperatures, and protects from high winds.

Since building his custom system, he has not only offset almost his entire bill, but has had 62 grid related outages, 5 more than 24 hrs. (one even 3 days in duration) and has never lost power.

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“We wanted an inverter that had string level monitoring and the ability to work in parallel. Since we have 12 strings 3 Solis 10kw inverters with the ability to monitor 4 strings made sense, also Solis came very highly recommended for its ease of install and reliability from a coworker.”

## System Overview

- 50KW – DC
- 30KW – AC
- Size - 35ft x 88ft
- Design – Erthos
- Inverters - Solis 1P10-4G-US
- Monitoring System – Aderis Acuity
- Modules – Talsun 410W
- Installed cost \$79k
- Annual Production 74,886 Watts

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