CHEMEHUEVI TRIBE COMMUNITY CENTER

Solar Microgrid Increases Resiliency for Chemeuevi Tribe Community

A Solar 2 Capricorn FLX Weather Station is an important element of a solar microgrid installation at the Chemehuevi Tribe Community Center near Lake Havasu, Arizona. The project is a joint effort between University of California Riverside and California Energy Commission, who funded the project.

Environmental Factors Put Community at Risk

In a 2021 Tribal Energy Webinar, Chemehuevi Vice Chairman Glenn Lodge explained how extreme summer weather conditions, frequent power disruptions due to aging infrastructure, and distance from the main power grid put the community at risk. “On occasion, power will be out for up to three days, which is concerning especially for community members with medical conditions or tribal elders. Low-income and elderly residents come to the center for a place to sleep and shower, power their medical devices, or just stay cool during summer blackouts,” he said.

To mitigate this issue, a microgrid system that integrates the weather station, solar panels, battery storage, advanced data analytics, and smart energy management controls was installed at the community center, which serves as an emergency response cooling center during power disruptions.

Weather Station Helps Optimize Efficiency

Alfredo Martinez-Morales, Managing Director of the Southern California Research Initiative for Solar Energy, says the weather station “helps monitor some of the data that is important for us to perform efficiency calculations in terms of solar production as well as some of the predictions that we wanted to do as part of the project... This project has the dual benefit of providing an environmentally friendly power system for the tribe while

> *"I would definitely recommend the system due to its many features and expandability."*
>
> Henry Gomez, Research and Development Engineer, University of California Riverside

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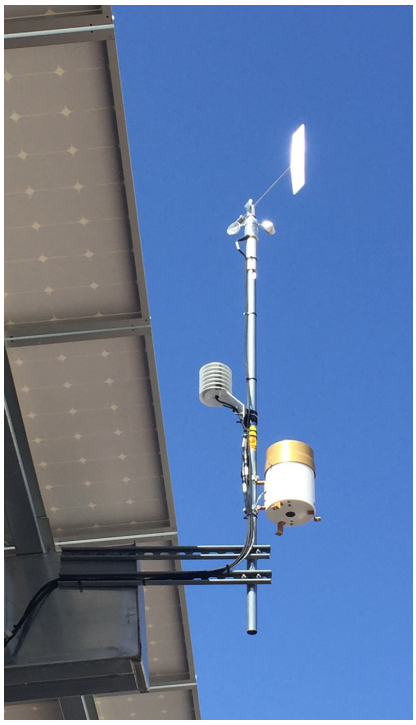

Mounted on the carport: The Solar 2 Capricorn FLX Weather Station includes sensors for:

- *Wind speed and direction*
- *Barometric pressure*
- *Temperature and humidity in a radiation shield*
- *Solar radiation*
- *Solar panel temp*

This system also includes the optional tipping bucket rain gauge.

Solar PV arrays on the carports at the Chemehuevi Community Center.

allowing researchers to study a system that could become a model for people in California and elsewhere."

Henry Gomez is Research and Development Engineer at University of California Riverside. In a follow up communication about the Weather Station with WeatherMaster™ Software he says, "The system has been performing as intended and have not had any issues at all. I would definitely recommend the system due to its many features and expandability that is has, but most important because of the level of support that was provided after the purchase . . . A lot of support went into this project that will lead me to not only continue using this company in future projects, but also recommend this company to anyone looking for weather stations."

Environmental monitoring is critical to optimizing the efficiency of solar panels. CWS offers three weather station models for solar project monitoring, all of which include key parameters of panel temperature, air temperature, and solar radiation. These weather stations interface with industrial monitoring and automation systems as well as web-based weather networks through the Weather MicroServer.

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