



CASINO ENTERTAINMENT

California rancherías look to microgrids for power during natural disasters

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As the deadly Butte fire ravaged the foothills of Amador and Calaveras counties last month, rooms at the Jackson Rancheria Casino Resort were transformed from guest rooms to cot-filled dormitories to accommodate hundreds of people evacuated from nearby communities. The fire scorched 71,000 acres, felling scores of power lines in its path.

Many homes and businesses went dark as firefighters battled to get the flames under control. But the lights stayed on and power kept flowing at the rancheria's hotel and casino because of a specialized network of generators and electrical equipment that gave the rancheria temporary energy independence from the regional power grid operated by Pacific Gas and Electric.

The Jackson Rancheria Band of Miwuk Indians, the tribe that runs the casino, is among a handful of California tribes experimenting with power setups known as microgrids. Essentially, these are small-scale energy distribution networks that allow owners to disconnect from the regional power grid and generate their own electricity.

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Microgrids have been around for years, often installed as a backup power option for military bases and universities. The concept is fairly new on tribal lands, but drawing interest because many California rancherías are in rural areas prone to fire, earthquakes and other natural disasters.

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The Ramona reservation in Riverside County was among the first in the state to install a microgrid. Systems also are being installed at the Bear River Band of Rohnerville Rancheria and the Blue Lake Rancheria, both in Humboldt County.

The Butte fire underscored the role microgrids can play in allowing tribal operations to be safe havens during natural disasters, said Rich Hoffman, chief executive officer of Jackson Rancheria. “It might be worthwhile for the Red Cross and tribes nationally to look into whether this can be duplicated around the country,” Hoffman said.

Microgrids can be powered by generators, batteries or renewable energy sources such as solar panels. Generally, they run in concert with the broader grid run by utilities. But in times of crisis, a flick of the switch allows a microgrid to operate as a sort of island, independent from the broader network. Often, microgrids are switched on at the utility’s request, when heat waves or other emergencies are stressing the distribution system.

The Butte fire marked the first time the Jackson resort operated its microgrid independently from PG&E for an extended period of time. As evacuees flooded in, the rancheria began moving cots into empty rooms and conference space, creating sleeping space for 400 people, Hoffman said. The resort’s RV parking lot became a temporary home to hundreds more.

PG&E approached the rancheria with the request to go offline, said Lance Campbell, lead electrician with Jackson Rancheria. The utility was struggling to keep power flowing as power lines fell, and taking the casino off grid would allow power to be allocated elsewhere. Campbell’s crew fired up two 1,600-kilowatt generators and two 1,500-kilowatt generators, plus smaller generators that helped power the casino, hotel and gas station.

The utility initially asked the rancheria to stay off grid for two days. “Then it turned out to be a week. And then things didn’t work out for them, so we stayed off the grid for 10 days,” said Campbell.

It marked the 14th time this year the rancheria was asked to go off grid, he said. Most of those requests came during heat waves when elevated energy demands taxed the grid.

Leaders at the Blue Lake Rancheria in Humboldt County said they decided to look into a microgrid after the magnitude-9 earthquake that rocked Japan in March 2011. The jolt sent tsunami waves coursing across the Pacific Ocean, and residents on California’s north coast were on alert for a devastating surge. More than 1,000 people evacuated from the Arcata area inland to the Blue Lake Rancheria’s casino parking lot, said Jana Ganion, energy director for the rancheria.

The waves that ultimately hit California were comparatively modest, but the incident solidified the notion that the rancheria – sitting at a 130-foot elevation – could provide a potential safe haven after earthquakes or wildfires.

The tribe worked with the California Energy Commission to develop a power generation system that can operate independently for as long as a month. The microgrid will be implemented in three phases, with the first phase operational next year.

The microgrid will provide a powerful replacement for the 1-megawatt generator the tribe has relied on in the past during power blackouts. In the past 12 years, PG&E has asked the rancheria to go offline nearly 50 times, said Ganion, mostly during heat spikes.

The first phase of the Blue Lake Rancheria microgrid will be operational next year, said Ganion, who works with the California Energy Commission. The tribe is contributing \$1 million to the project, along with other funding from the state and federal government, among others.

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The rancheria typically spends about \$480,000 a year in energy costs for the casino and other buildings the microgrid will power. Once it is operational, the microgrid is expected to save the tribe at least \$75,000 a year on energy purchases, said Ganion. That’s because the rancheria will be generating a larger portion of power from renewable resources, and will move from a secondary to primary customer rate with PG&E. The rancheria qualifies for the lower primary rate because it will be paying for upkeep of its transformers and other equipment.

Amber Beck, a spokeswoman for the California Energy Commission, said the Blue Lake Rancheria Tribe was the first tribe to ask the commission to fund a grant for a microgrid project. She said such systems will be key as the state looks to make its power grid more reliable in the years ahead.

“Investing in microgrid research and testing is critical to meeting California’s clean energy goals, wherever they are located,” she said.

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