



Microgrid control haiti

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Ten years ago, the Biohaus Foundation began installing a solar power system - initially on the roof of the children's hospital - with an 83 kW power output which made it one of the biggest in the country at the time. Gradually, the other surrounding building complexes such as the earthquake emergency hospital, schools and kindergartens were linked up to the children's hospital to form a dedicated power grid, cutting diesel consumption dramatically as each unit had previously had its own - often oversized - diesel generator.

The ingenious thing about this off-grid system is an mtu battery container that stores electricity during the day and ensures solar power is also available at night (with diesel generators ready to step in if more power is needed). The solar arrays with a total output of 830 kW, the mtu storage batteries and the diesel generators are all managed by the mtu microgrid control system or energy management system (EMS) that works to ensure the amount of power being generated is always in balance with demand. For example, it kicks the diesel gensets into action if the sun is not shining and battery power levels are too low to cope, then ensuring the batteries receive a charge, preparing them to go back on-stream.

Rolls-Royce employees have remote access to the microgrid at all times and are able to support the Haitians via remote maintenance links, giving their Haitian customers on-site advice and guidance when, say, a battery rack has to be replaced or, as was recently the case, needs to be re-activated.

"It is impressive and very encouraging for us Haitians to be able to secure and optimize the power supplies to our hospitals with the aid of modern communications despite the chaos that prevails in our homeland. Rolls-Royce's partners are extremely committed and helpful in this - and we now regard them as our friends," said Maxime G?n?c?, senior engineer on site. Willi Ernst, founder and chairman of the Biohaus Foundation, agreed: "We're delighted and impressed by the helpfulness and proficiency of the Rolls-Royce Power Systems technicians, who identify so strongly with our aid project in Haiti and support us to the best of their ability. That's international solidarity at its very best," he said.

mtu is a product and solution brand of Rolls-Royce, providing world-class power solutions and complete life-cycle support.

After a devastating earthquake hit Haiti last week, EarthSpark International temporarily de-energized its 100-kW community microgrid in Les Anglais to check for downed wires and await possible aftershocks. Allison Archambault, president of the nonprofit organization, was terrified that EarthSpark wouldn't be able to re-energize the microgrid if inspections revealed damage.

The 7.2 earthquake was so severe that it killed more than 2,200 people, destroyed an estimated 55,000 homes, and created strong quaking that reached more than one million people.



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Given the magnitude of the destruction Archambault realized it would be difficult to repair the microgrid if its distribution system required specialized tools. Landslides had made roads impassable.

Fortunately for the residents of the town, the microgrid, consisting of solar, storage and diesel, did re-energize, providing power to a cell tower. The electricity helped residents quickly hold funerals for those who had died in the earthquake and whose bodies couldn't be transported to morgues because of the blocked roads. And it allowed some of the microgrid's 2,000 customers to celebrate Patron Saint Day with music and cold drinks.

Not only did the Les Anglais microgrid power through the Aug. 14 earthquake, but a 95-kW EarthSpark microgrid in Tiburon, a small fishing town in the southern peninsula of Haiti, also survived the earthquake. Also operating through the disaster was a microgrid served by the Cooperative Electrique de l'Arrondissement des Coteaux that provides power to 1,200 people in Coteaux, Roche-?-Bateaux and Port au Piment. It was installed by the National Rural Electric Cooperative Association (NRECA), said Kate Tillotson, a spokeswoman for NRECA.

For EarthSpark's Archambault, Haiti's latest crisis has sparked interest in adding distributed energy resources (DER) closer to critical services such as the cell tower. With such resources, the organization wouldn't have to worry so much about losing power because of downed poles and wires.

"If we have more distributed energy, solar plus storage, throughout the grid, we're less reliant on any piece of infrastructure," she said. The organization is working to raise funds to add DERs to the microgrids.

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