

Zimbabwe microgrid energy storage

Tanganda Tea Company Limited, Zimbabwe's largest tea producer and one of the largest on the African continent, uses its own microgrids at Tingamira and Jersey sites for secure and environmentally friendly energy supply since July 2021. The system consists of a megawatt-class solar plant, a lithium-ion energy storage system, and three diesel generators. It was implemented by DHYBRID and its partner, South African renewable energy specialists Blockpower. In addition to tea and coffee, avocados, and macadamia nuts are grown on site.

"Sustainable production across the value chain is becoming increasingly important for companies like Tanganda. This includes a climate-friendly and reliable energy supply. Solar hybrid systems are an ideal solution for this: They minimise CO2 emissions and reduce operating costs at the same time," says Tom Fricke, Head of Energy Storage at DHYBRID.

The region in eastern Zimbabwe is remote and difficult to reach. By reducing diesel consumption and high transport costs, the investment in the new technology will pay for itself within three to four years. Compared to the previous energy supply, which relied on diesel generators and the unstable public power grid, CO2 emissions are reduced up to 6,000 tons per year.

DHYBRID's energy management system, the Universal Power Platform (UPP) controls all major components: the 2.6 MWp PV system, a lithium-ion storage system with 980 kWh capacity and an output of 1,000 kW as well as several diesel generators used for back-up supply.

The system is designed to be scalable and can be expanded at any time to include additional energy generators and storage. The integrated SCADA solution allows the overall microgrid to be monitored and controlled, further consumption levels are displayed in real time.

"Here in Africa, we often have to deal with very heterogeneous energy systems that are moreover growing gradually. For this, we need a technology-open and very flexible energy management system," says Kyle Bohnsack, Director of Blockpower. "DHYBRID's UPP is an ideal solution that we can leverage through our regional expertise."

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Web: <https://hollanddutchtours.nl/contact-us/>

Email: energystorage2000@gmail.com

WhatsApp: 8613816583346

