



Energy storage for backup power mali

In cooperation with the start-up Africa GreenTec, TESVOLT is supplying lithium storage systems for 50 solar containers with a total capacity of 3 megawatt hours (MWh), enabling a reliable power supply for 25 villages in Mali.

The 40-foot containers, each with a 37 to 45-kWp photovoltaic system and a 60-kWh battery storage system, supply electricity for EUR 0.20 per kilowatt hour (kWh). Until now, villagers had to pay up to EUR 1.50 per kWh of electricity, which came from diesel generators – or face having no electricity at all. TESVOLT storage systems can be used worldwide, even in demanding environments, and have a long lifespan thanks to the Active Battery Optimizer developed by TESVOLT.

An off-grid hybrid energy system at Fekola, a gold mine in Mali, Africa, has gone online incorporating solar PV, battery storage and the site's existing fossil fuel generators, project partners Baywa r.e. and Suntrace have said.

Malian mines produced 66.5 tonnes of gold in 2020, making it the third biggest producer on the African continent, according to the country's Ministry of Mines, Energy and Water. The Fekola mine is in operation 24 hours a day and so while it will continue to rely on six generators that run on heavy fuel oil, during the daythe project's solar array will allow for three of those to be shut down and the use of the other three greatly reduced.

The hybrid solution, which includes 30MW of solar PV and a 17MW / 15.4MWh battery energy storage system, has been integrated successfully with the existing power plant onsite and developers Baywa r.e. and Suntrace said the solar plant " is on course to be 100% complete by the end of June".

Baywa r.e. and Suntrace's partnership was awarded the US\$38 million project by the Fekola gold mine's owner and operator, B2Gold, which gave approval in late 2019 after the two German companies submitted technical and economic feasibility study work.

At the time that approval was granted, Energy-Storage.news reported that the batteries will be largely used to compensate for short-term fluctuations in solar power output during the day, rather than being used to store energy from the day's solar production for later use. Baywa r.e. said yesterday in a press release that it can allow up to 75% of the mine's daytime energy use to be covered by solar.

"Integrating such a large amount of solar into a small, isolated grid safely and reliably has been a major technical challenge and required the use of battery storage as well as a tailor-made control system. This was conceptualised in the early stages of the project and we ensured that our vision was implemented accordingly by the suppliers," Baywa r.e. project manager Thorsten Althaus said.



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" It is extremely rewarding to see how well this solution performs in reality and shows that the technology works and is just waiting to be applied on further projects. "

"We are very proud that B2Gold has entrusted Suntrace,together withBayWar.e. as Engineering and Procurement contractor, to support the development and implementation of this innovative project," Suntrace COO Martin Schlecht said.

"Thanks to excellent team work with B2Gold andBayWar.e., we were able to manage the completion despite the global challenges that the COVID-19 pandemic imposed on all of us. We are proud to jointly deliver a functioning project, well integrated with the mining operations, which reduces CO2emissions from power generation for the Fekola mine by roughly 20%."

In December 2019, energy solutions technology provider Wärtsiläwas revealed as the system integrator and supplier of the hybrid energy solution. Wärtsiläsaid then that it has done similar projects in the off-grid commercial and industrial space including at a goldmine in Burkina Faso. The hybrid incorporates Wärtsilä's GEMS software and controls platform, which uses AI to control and optimise the battery and other assets, as well as dispatching or drawing energy according to conditions such asgeneration and demand profiles and market opportunities.

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