Energy storage solutions democratic republic of the congo

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The Democratic Republic of the Congo (DRC) intends to conditionally reduce its greenhouse gas (GHG) emissions by at least 21% by 2030.2 While the DRC has historically been a low emitter, the country"s 2021-2023 National Sustainable Development Strategy includes plans to increase the use of renewables and improve energy access,3 partly through hydropower and solar electricity generation.

The DRC is also the world"s the largest producer of cobalt and third largest producer of copper. Both minerals are critical for clean energy technologies, and demand for these resources are projected to increase in response to the global energy transition. Data and multi-stakeholder dialogue will be key to support the country"s energy transition plans, inform sustainable transition pathways, support good governance of critical minerals and monitor climate commitments.

Data reported through the EITI can serve as an entry point to inform debate and policymaking related to the DRC"s domestic energy transition plans. The EITI process also seeks to improve governance of the DRC"s mining sector, given the importance of critical minerals used in low-carbon technologies. EITI data-driven forecasting can provide evidence for policymakers to manage risks and leverage opportunities.

Global equipment manufacturer Caterpillar has supplied hybrid energy solutions technology including 7.5MW of battery storage to the microgrid powering a gold mine in the Democratic Republic of the Congo (DRC).

Caterpillar"s Master Microgrid Controller, the company"s bi-directional power inverters and remote asset monitoring technologies have been integrated along with Caterpillar lithium-ion battery Energy Storage System (ESS) modules, to 36 Caterpillar diesel gensets and three hydroelectric power stations to the energy system at Kibali gold mine in DRC"s Haut-Uele province.

The project has been carried out by regional Caterpillar distributor Tractafric for customer Barrick Gold Corporation. Kibali was opened in 2013 and produced 808,000 ounces of gold last year. Caterpillar also supplies other equipment including haul trucks and water delivery systems to the mine.

The new grid stabilising equipment reduces the need for spinning reserve at the site, decreasing diesel consumption annually by around 3 million litres, as well as reducing its carbon dioxide emissions.

"The result is continuous, reliable power for the Kibali mine generated at the lowest unit cost rate through maximum renewable energy penetration. We are investigating options to improve on this blend," Barrick Gold"s chief engineer for Africa and the Middle East Rousseau Jooste said.

Jooste added that the project required "an exceptional collaborative effort" between the equipment supplier,

Tractafric and the on-site technical team at the mine, not least of all because the COVID-19 pandemic meant that "innovative remote technologies" had to be used to get the system commissioned.

It"s the latest in a series of global projects to use battery storage and related advanced energy equipment to reduce fuel costs, fuel import logistics, grid electricity costs and carbon footprints at gold mines and other mining sites.

Most recently covered by Energy-Storage.news have been the award of a contract to power station operator company EDL for a solar-plus-storage solution at a Rio Tinto bauxite mine in Queensland, Australia. Also in Australia, the energy storage arm of energy technology company W?rtsil? recently said its first battery project in the country will help reduce runtime and increase efficiency of dual fuel engines at a gold mine in the north.

Elsewhere, PV inverter company Sungrow"s energy storage division will supply inverters and battery storage to a gold mine in Egypt in a solar-plus-storage project by developer juwi. Further projects have been recently announced at two nickel mines in Australia and an ilmenite mine in Madagascar.