Grid stabilization accra

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In a significant move to address Ghana’s chronic power supply issues, the Millennium Challenge Corporation and Millennium Development Authority have enlisted SMEC, a renowned construction engineering company. This ambitious five-year initiative focuses on enhancing the operation and financial health of the Electricity Company of Ghana. By targeting technical losses and boosting the quality and reliability of electricity, the program aims to transform power distribution in Greater Accra and surrounding areas.

The project, valued at $316 million, encompasses extensive upgrades, including the construction of 1,400 km of low voltage (LV) distribution lines and the installation of 400 new transformers. According to a report by ESI Africa, these measures are expected to significantly reduce technical losses across Greater Accra.

Key components of the project include geographic information system mapping of distribution assets, an alternating current (AC) testing laboratory, and comprehensive rehabilitation and reinforcement of distribution systems. This overhaul will facilitate the connection of new traders and enhance overall electricity distribution efficiency.

A notable element is the construction of a state-of-the-art air-insulated switchgear bulk supply point (BSP) of 330/33 kV and a gas-insulated switchgear BSP of 161/33 kV with STATCOM. Additionally, the project features two primary substations, each equipped with 2x39MVA transformers and 33/11kV switchgear. A Meter Management System capable of controlling up to six million smart meters is also part of this extensive upgrade.

Employing root cause analysis and advanced power system modelling software, SMEC has ensured the most effective designs to tackle power loss challenges post-completion. The Pokuase BSP, the largest in Ghana and noted for its advanced online control and monitoring, boasts a 40kW roof-installed, grid-tied solar PV plant. Similarly, the Kasaoa BSP, one of the few gas-insulated switchgear substations in West Africa, is designed with a 60kW roof-installed, grid-tied solar PV plant.

The project also innovatively addresses the challenge of space. With 580 MW to be evacuated from Pokuase BSP, traditional towers would have required an 80-meter-wide wayleave. SMEC’s design and the undergrounding of some circuits have reduced the wayleave to just 30 metres, minimizing the impact on local communities and reducing financial expenditure on wayleave acquisition.

This is contained in the Multi-Year Major Tariff Review (2022-2027) proposals submitted to the country"s utility regulator Public Utilities Regulatory Commission (PURC) for consideration.

Making a case for its demand for a 48 per cent increment in transmission service charge, GRIDCo stated that

the "current tariff of 0.060398GHS/kWh does not adequately reflect the cost of GRIDCo"s operational activities.

"The tariff granted by PURC since July 2019 has depreciated in US Dollar terms from 1.0915 US Cents/kWh in 2019 to 0.8492 US Cent/kwh in March 2022 notwithstanding increases in Regulatory Asset Base over the years."

It noted that the cost of maintaining the legacy assets and upgrading the transmission infrastructure to reduce congestions within the NITS have become increasingly expensive over the years. It said the objective underpinning its Tariff Proposal is to obtain a cost-reflective tariff that would enable GRIDCo to improve the service levels and quality thresholds, and importantly enhance the company"s sustainability.

"A cost-reflective transmission tariff will ensure a reliable and stable NITS which will restore confidence in Ghana"s power system for sustainable economic development," GRIDCo said.

The power transmitter explained that should their proposed tariff be approved, they would be able to upgrade the existing low-capacity infrastructure to improve the power transfer capability of the NITS to eliminate congestion within transmission corridors as well as overloads at BSPs.