Tanzania energy storage market analysis

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Peak electricity demand in the country is expected to roughly quadruple by 2025 to 4,000MW. To help meet this demand, Tanzania is targeting installed capacity of 10 GW by 2025. Meanwhile, the country is aiming to nearly double electrification rates to 75% by 2033.

Tanzania is estimated to have 45 billion m3 of natural gas reserves, enough to cover the country"s domestic use and make Tanzania the next natural gas hub in Africa. Natural gas deposits in Tanzania are found at Songo Songo in Lindi region, Mnazi bay in Mtwara Region and Mkuranga in Coast Region. The reserves at Songo Songo and Mnazi bay are estimated at 30 and 15 billion m? respectively. A 232 km gas pipeline from Songo Songo Island to Dar es salaam has been constructed and is supplying natural gas for power generation and other industrial thermal processes.

There are nine thermal power plants in Tanzania converting natural gas to electricity: Ubungo I and II, Tegeta, Songas, Mtwara, Somanga, Kinyerezi I and II, and Dangote. Total production per year stands at approximately 650 MW. The Songas Project is currently producing around 200 MW of electricity using natural gas.

Some of the Dar es Salaam based industries using Natural Gas for thermal applications include Cement factories, Textiles, Breweries, Glass and Aluminum industry among others.

Tanzania hydropower capacity stands at 562 MW and estimates of potential capacity are as high as 4.7 GW. Most of the hydro power water source in Tanzania are rivers.

There are planned large hydro projects at Ruhudji (360 MW), Rumakali (22 MW), and Stieglers Gorge (2,100 MW). Small Hydro Power (smaller than 10 MW) so far has been only exploited up to 8 MW by Tanzania Electric Supply Company Limited (TANESCO) and private developers, whereas potential is estimated at 315 MW, and interest seems to be increasing. Studies also taking into account economic aspects highlight a variety of sites that could produce electricity at competitive cost to supply power to the national grid and through mini-grids to villages in the community.

The 222 MW Rumakali and 358 MW Rhuhudji projects are both located in the Njombe region in the southern highlands of Tanzania and could double the country"s total installed hydropower capacity from 562 MW to 1,142 MW. The Tanzanian government plans to start operating the Julius Nyerere Hydroelectric dam in June 2022, when the first of nine turbines go into operation. Work is 63% complete on the facility which will feed 2,115MW, a peak into Tanzanians national power grid.

In May 2021, the African Development Bank (AfDB) and the Government of Tanzania signed loan agreements totaling USD 140 million to finance the construction of the 50 MW Malagarasi hydropower plant in Western Tanzania. The funds will be used to construct the plant and an evacuation transmission line, as well

as to add 4,250 rural electrification connections, providing reliable renewable energy to households, schools, clinics and small and medium-sized enterprises in the Kigoma Region.

Solar energy investments in Tanzania are still at a small scale. To date, about 6 MW of Photovoltaic (PV) solar energy have been installed in Tanzania. The Government supports solar development within the country by removing VAT and import taxes on the main solar components such as panels, batteries, inverters and regulators. The President of Tanzania, Samia Suluhu Hassan has stated that the country has a goal of producing 6,000MW from renewable energy by 2025.

In 2019, the World Bank (WB) signed a grant agreement with the Government of Tanzania amounting to USD 4.5 million to finance the access to a sustainable water supply through improved solar pumping systems in 165 rural Tanzanian villages.

Curretly, five major suppliers of gas share the market namely BP Gas, Oryx Gas, Alpha, Mohan Gas and Pan African/TPDC which is piloting bottling and distribution of natural gas. In cities the LPG sector is growing; for instance, in Dar es Salaam City, where mostly middle-class families live, kiosks using LPG can be found less than a kilometer from each other. Less than 10 percent of all households in Tanzania also use LPG for their cooking. LPG has replaced the traditional use of charcoal and firewood.

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