Maldives solid-state batteries

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During the commemoration of STELCO"s 74th anniversary, Managing Director Hussain Fahmy highlighted the company"s significant strides in renewable energy development, aligning with the government"s ambition to achieve carbon neutrality in the Maldives by 2030.

Fahmy outlined plans to implement renewable energy initiatives across islands in Kaafu Atoll, Alifu Alifu Atoll, Alifu Dhaalu Atoll, and Vaavu Atoll. The initial phase aims to deliver 12 hours of electricity through battery storage, with plans for expansion to additional islands in the pipeline.

Furthermore, Fahmy announced STELCO"s commitment to bolstering its capacity to meet electricity demands in the Greater Male" Region under the Sixth Power Development Project.

This initiative involves the installation of hybrid generators, including models powered solely by diesel. The move underscores STELCO"s ongoing efforts to embrace environmentally sustainable practices, prioritising the integration of renewable energy sources into its operations.

Under the Accelerating Sustainable System Development Using Renewable Energy (ASSURE) project, supported by the Asian Development Bank (ADB), the Maldives is seeking contractors for the installation of 6 MWh capacity Flow Battery Energy Storage Systems (BESS) with Energy Management Systems (EMS) on 2 islands.

The BESS installations will support high penetration of renewable energy for the island grids and ensure the efficient operation of existing diesel generators required in a solar PV/Diesel hybrid generation mix. The BESS will be developed on an EPC (Engineering, Procurement, and Construction) basis with Operations and Maintenance support.

A pre-bid meeting will be held online, at 11:00 hours on 16th April 2024. Details are provided in the Bidding Documents. Interested developers shall submit applications for tender on or before 11:00 hours Maldivian Time on 14th May 2024. Interested parties can access bidding documents from: https://

The Maldives is adopting advanced low-carbon technologies to reduce emissions and diesel imports with the help of the Japan Fund for the Joint Crediting Mechanism.

The Maldives is an archipelago 750 kilometers (km) southwest of Sri Lanka with 26 atolls and a total land area of about 300 km2. Of its total population of more than 500,000, about a quarterlives in the capital city of Male while the rest reside in more than 190 islands. As of 2018, there are about 240 megawatts (MW) of installed diesel-based generation capacity on the inhabited islands, out of which approximately 135 MW is in the Greater Male region, which comprises Male and neighboring islands.

Given the geographic spread, each island is electrified with its own diesel-powered grid system, resulting in expensive and not very reliable supply. The cost of diesel power is unaffordable at 30 cents to 70 cents per kilowatt-hour (depending on the island) and requires government subsidies in excess of $40 million annually. Electricity-related subsidies are also a focus area for more robust management of government expenditures.

In 2012, the Maldives spent over $470 million on oil imports, a large share of it being fuel for electricity generation. Such heavy diesel dependence makes the country"s carbon emissions per unit of electricity one of the highest in South Asia.

The project tapped the JFJCMto finance and pilot test an advanced battery energy storage system, including an energy management system, that can help address the additional challenges of renewable energy in small islands like the Maldives.