

## Kiribati energy storage for grid stability

The Global Green Growth Institute (GGGI) is a treaty-based international, inter-governmental organization dedicated to supporting and promoting strong, inclusive and sustainable economic growth in developing countries and emerging economies. To learn more please visit about GGGI web page.

The Public Utility Board (PUB) of Kiribati is the electricity, water supplier and sewerage disposal for Kiribati and services the main center of South Tarawa. PUB is a corporate body, established under the Public Utilities Ordinance, Cap 83, on 1st July 1977 and which was further amended in 2000 to allow for more autonomy in its operations. In 2013 PUB became a State-Owned Enterprise with an established Board of Directors as part of its governance structure.

The assignment aims to conduct overall technical and financial assessment of PUBs existing Solar PV grid connect systems, for the 6 sites identified. A pre-feasibility report will be compiled as result of the consultancy, which will enable a better understanding of the status of PUB’s Solar PV grid connect system and the addition of the complementary BESS.

The consultancy will work closely with PUB in collecting the relevant data and information based on the 6 sites selected for this project and assess the pre-feasibility nature in accordance with the deliverables required. The consultant may refer to national documents for contextual purposes, however the design and technical recommendations must be established through analysis and assessments guided by this assignment.

The documents delivered through this assignment will serve as reference documents for all stakeholders involved in the implementation of NDC activities in the energy sector. They will also be used for establishing contacts with potential support providers to leverage climate finance and support for NDC implementation.

To develop the scope for a renewable energy and energy storage project in the future, a Renewable Energy Consultant is needed to undertake a pre-feasibility study. Specifically the consultant will collect data to ensure understanding of the existing systems in place and additional carrying capacity for the proposed Battery Energy Storage Systems; propose optimal system design options, including: a) PV+BESS+ facility for BESS systems for the 6 sites or b) BESS connected with facility to 6 sites; assess the required space; environmental and social impacts; and cost estimates.

The consultant will start an inception phase in consultation with GGGI, PUB and MISE. The scope and objectives of the assignment will be discussed, challenges and issues shared to provide context for the assessments.

The consultant is required to prepare a desktop review which includes an analysis of policy and regulatory frameworks related to renewable energy generation and consumption use, and storage capacity in the Kiribati

context to identify any regulatory barriers to the success of the project and suggest practical solutions

The consultant shall conduct a full pre- feasibility study to assess the fundamental support systems needed to enable the addition of BESS to the existing grid. The study should provide a clear understanding of the current state of 6 sites in terms of Solar PV and BESS potential, identify gaps and constraints, and propose well-defined, practical, and technical solutions/recommendations for BESS installation and grid stabilization and reliability.

Deliverable 2 – Pre- feasibility study including an assessment for an integration of BESS for grid stabilization including social and environmental safeguards concerns and GHG emission reduction potential

The consultant must provide detailed technical specifications of the proposed system and a cost estimate. This could include the following items: solar PV modules, battery modules, charge controller, inverter, support structure, array stands, and where such system can be sought; logistical cost, installation cost, and operation cost. The deliverables required will consist of a consolidated financial portfolio estimate and technical design, supply, and installation specifications

The consultant will be expected to provide a Final Report at the end of the assignment, which would include an overview of the process undertaken, recommendation and proposed roadmap for advancing the development of the full project, including identification of suitable sources of finance. The final report will include all deliverables as in an annex.

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