

**Additional Justification for Technical assistance and Institutional Strengthening Grant under India:
Transformative Mobility and Stationary Storage (TMBS) program.**

Rationale

1. As per the CIF Pricing, while grants are not typically offered to MIC, *“under extraordinary country, project or program circumstances, exceptions to the terms and conditions. “may be submitted to the TFC for their consideration and approval, subject to justification and documentation of rationale supporting the exception”.*
2. Under the proposed TMBS program, the IBRD as well as Canada-World Bank Clean Energy and Forests Climate Facility Trust Fund are being utilized to reduce the financing costs for Battery Energy Storage Systems (BESS) in India to stimulate this nascent industry. CIF funds are being utilized to address institutional and market failures in India related to the BESS market and build the enabling environment. CIF funds will also help crowd-in private sector investments by helping pipeline building as well as appraisal capabilities at the State Bank of India (SBI) (the implementing agency) and other financial institutions. The project will not be viable without CIF funds.
3. Based on available funding and earlier guidance from TFC members as well as the CIF AU, World Bank has continued to explore the different combinations of products that could effect transformational change in a sector in a country. In that context, concessional loans and grants options were offered to the Govt. of India (GOI) to address critical barriers in the BESS through extensive technical assistance and capacity building activities at the National and State level (see Annex 1)
4. CIF grant funds will be utilized for technical assistance and institutional strengthening activities. As the program has a national scope, state focused policy/regulatory TA as well as market development activities will be undertaken in 4-5 states over the duration of the program of 5years. CIF funds will also help set-up/strengthen institutional structures to support origination, appraisal and supervision of BESS investment proposals.
5. This model follows the highly successful Grid connected Rooftop solar PV (GRPV) project implemented by the SBI with support from IBRD, CTF and GEF. The Technical assistance program (Suprabha) US \$13million, has played an instrumental role in creating an enabling ecosystem across the country for accelerating the growth of GRPV across 17 states. The key highlights of the support include (i) Suprabha collaborated with the central regulator to develop the Draft Model Regulation for Grid Interactive Distributed Renewable Energy Sources. (ii) It played a major role in upgrading the skill sets of key stakeholders. It has trained over 1,260 DISCOM officials, bankers, trainers, developers, and entrepreneurs, (iii) Suprabha also supported the development of United Web Portals (UWP) for digitizing the GRPV application process in 17 states. The UWP provides transparency to consumers on the entire process and ensures a hassle-free experience for a consumer to install a GRPV system.
6. The BESS project origination and implementation is more complex and will require more intensive TA. It is a nascent market and development of the market is crucial for integration of

Renewable energy (RE) to the grid. The support to the enabling environment is imperative for the uptake of BESS and thus RE.

Funding request

7. The project made an original request of USD 15 million. Based on strategic considerations of the CIF as well as TFC and CIF AU guidance, World Bank has re-considered the original request reducing it to USD 13 million.
8. Finally, GOI, the same sovereign client as for the TMBS program, is cancelling \$ 22 million CTF resources on another project (Innovation in Solar Power and Hybrid Technologies Project) including \$ 9 million investment Grant and \$ 13 million in loan resources thereby helping alleviate the current situation. As such this request has a very small impact from the India CTF perspective.

Urgency

9. The TMBS program has completed the internal decision meeting chaired by the South Asia Regional Vice President (RVP) and is scheduled for Board presentation on May 11, 2023. The board date has already been moved from April 13, 2023 in view of the TFC guidance and any further delays would strain the relationship with the client.

Annex 1: Details on Technical Assistance

The CIF funds will support targeted TA to remove barriers to large-scale adoption of battery storage by supporting the development of an ecosystem. They will support the adoption and integration of a renewable energy to avoid significant ramp-up of coal in the short and medium terms and therefore help reduce the lock-in of millions of tons of GHG emissions over the long term.

- (i) **Strengthening capacity.** The TA will support the FI on setting up internal credit procedures and providing training to staff for assessing the financing proposal for battery storage with an expected outcome of improving institutional capacity and mainstreaming battery storage lending at the FI. Similarly, the TA will be provided to other banks, electricity distribution companies (discoms), transmission utilities, load dispatch center, and so on with an expected outcome of improving the knowledge about battery storage operation for these stakeholders.
- (ii) **Creating enabling policy and regulatory environment.** The TA will first analyze the remunerable value proposition and the associated market size especially in stationary battery storage applications, for instance, behind the meter for diesel abate distribution companies to co-locate the battery storage with charging infrastructure for better grid management with or without rooftop solar, congestion management in the T&D grid, and co-locating with the RE generators, among others. The TA activities will extend support to the central and state regulators with an expected outcome to develop an ancillary service market for monetizing value propositions of battery storage under different uses.
- (iii) **Support creation of a circular economy.** The TA component will include studies in which solutions for battery waste management will be evaluated including exploring reusing end-of-life EV batteries for less-demanding applications and recovering critical metals and reutilizing them. It is critical to recover metals at the end of life for the country's supply security and putting those back into the circular economy. It would also include creating awareness and improving public perception of second-life products. The funds will be used for the development of environmental standards to ensure safe recovery or disposal and no toxic fumes or waste gets generated in the process. This will include guidelines/standard operating procedures for battery recycling facilities, standards for battery waste recycling and waste disposal out of recycling facilities, and identification of appropriate recycling technology.
- (iv) **Support safety practices for BESS.** The TA component will include studies which will evaluate the safety practices surrounding manufacturing, transportation, handling, and installation including policy and regulatory framework for testing, codes and standards for safety requirements, and environment health and safety standards for battery storage use in India. Since there are currently limited/no safety regulations or guidelines for the use of Lithium or Lithium-ion batteries during the manufacturing, transportation, installation, and operation/maintenance phases, the funds will be used to develop a guidebook for the local government, buyers, and operators, outlining the safety plan from transportation to operation stage as well as recommendations for first responder and engagement plan for local responders.

- (v) **Renewable energy integration:** At COP27 held in November 2022, GoI unveiled its Long-Term Low Carbon Development Strategy¹ focusing on expanding renewable energy (RE) generation and grid strengthening to ensure energy security. The TA would support integration of RE in charging infrastructure by recommending institutional setup for EV and energy coordination, developing regulatory measures to promote single window clearance, and providing implementation support to unlock green charging across parking locations- residential, office and commercial and associated business models.
- (vi) **Exploring new technologies for energy storage.** The TA component will include a study to explore examples of successful storage technologies in use globally, other than battery storage, such as mechanical storage which uses innovative technologies to harness kinetic or gravitational energy to store electricity. This study will consider local weather conditions and availability of resources to make recommendations for use of similar technologies in India. The TA will facilitate coordination between the policy makers, industries and research institutes on the emerging areas in energy storage, testing facilities and standards.
- (vii) **Consumer awareness.** The TA component will include awareness campaigns to sensitize key stakeholders in the areas of battery safety, recycling and reuse of batteries, financial evaluation and sustainability, smart charging, e-bus contracting, and so on.

¹ India's Long-Term Low-Carbon Development Strategy, Submission to the United Nations Framework Convention on Climate Change, Ministry of Environment, Forest and Climate Change, Government of India, 2022