

 Early Warning System

ADB-56334-001

Innovative West Bengal Floating Solar with Battery Energy Storage
Project



Quick Facts

Countries	India
Specific Location	Bakreshwar dam reservoir , Birbhum district, West Bengal
Financial Institutions	Asian Development Bank (ADB)
Status	Proposed
Bank Risk Rating	B
Borrower	Government of India
Sectors	Energy, Technical Cooperation
Investment Type(s)	Loan
Investment Amount (USD)	\$ 193.15 million
Loan Amount (USD)	\$ 193.15 million



Project Description

As stated by the ADB, in a densely populated state with competing demands for agricultural, industrial, and residential land, large-scale ground-mounted solar projects face major siting challenges. Floating solar photovoltaic (FPV) systems on existing water bodies can overcome land acquisition hurdles, enhance panel efficiency through water cooling, and reduce evaporation losses. The Bakreshwar dam reservoir located in Birbhum district built by the West Bengal Power Development Corporation Limited (WBPDC) to supply cooling water for thermal power plants offers an ideal site for utility-scale FPV. This dual-use infrastructure model enables sustainable land and water use, while boosting solar panel efficiency and conserving water. Co-locating a battery energy storage system (BESS) will address intermittency of solar power, improve grid stability, and enable peak load management. In addition, the integrated FPV-BESS solution will support West Bengal's RPO compliance, and advance its transition to a low-carbon, resilient power sector.

The proposed project aims to support the Government of West Bengal in delivering clean, reliable, and sustainable electricity through the development of the state's first large-scale FPV power plant, integrated with a utility-scale BESS. The FPV system will be installed on the Bakreshwar dam reservoir originally constructed to supply cooling water for a coal-fired plant showcasing an innovative multi-use infrastructure model.

The project will reduce GHG emissions by generating renewable energy from FPV, while the co-located BESS will enhance grid stability by addressing solar power intermittency and enabling peak demand management. By supplying reliable renewable electricity to rural communities and emerging industrial zones, the project will help improve quality of life, foster inclusive economic development, and strengthen energy security.

In addition, the project will strengthen the institutional capacity of WBPDC in planning, implementing, and managing utility-scale renewable energy projects. It will serve as a replicable model for other states facing land constraints and catalyze future private sector investment in floating solar and energy storage technologies. Overall, the project will support West Bengal's transition to a low-carbon energy system, while promoting sustainable urbanization, industrial growth, and rural development.



Early Warning System Project Analysis

The ADB categorized the project E&S risks as follows:

Environment - B

Involuntary Resettlement - B

Indigenous Peoples - C



Investment Description

- Asian Development Bank (ADB)



Private Actors Description

As stated on the company's LinkedIn profile, the West Bengal Power Development Corporation Limited (WBPDC) is the largest state owned power generating company in the eastern region of India and meets around 60% of the state's power demands.



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Private Actor 1	Private Actor 1 Role	Private Actor 1 Sector	Relation	Private Actor 2	Private Actor 2 Role	Private Actor 2 Sector
-	-	-	-	West Bengal Power Development Corporation Limited (WBPDCCL)	Contractor	Energy



Contact Information

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Other Related Projects

- ADB-56334-002 Preparing West Bengal Floating Solar Project