

## Project Summary Information (PSI)

Project No.: 000088

Project Name	Power System Upgrade and Expansion Project
Country	People's Republic of Bangladesh
Sector	Energy / Power
Project No.	000088
Borrower	People's Republic of Bangladesh
Project Implementation Entity	Power Grid Corporation of Bangladesh (PGCB)
Environmental and Social Category	Category B
Date of PSI prepared or updated	March 27, 2019
Date of Concept Approval	August 31, 2018
Date of Appraisal Approval	December 18, 2018
Date of Financing Approval	March 26, 2019

### I. Introduction

Bangladesh, a developing country with a population of around 160 million, has maintained an impressive development track record over the last decade, growing at more than 6 percent annually. In 2017 its gross domestic product (GDP) per capita reached USD1,480.<sup>1</sup> This sustained economic growth has rapidly increased the demand for infrastructure such as energy, transport, and water supply and sanitation. As of mid-2018, about 90 percent of the people in Bangladesh had access to power, and annual power consumption per capita in 2017 increased to 375 kilowatt-hour (kWh).<sup>2</sup> Compared with the world average per capita annual power consumption of about 3,125 kWh in 2014, Bangladesh's power sector clearly has a long way to go. Insufficient and unreliable power supply impedes Bangladesh's economic performance, reduces its business competitiveness and productivity, and seriously affects the quality of life of its people. It was estimated that poor power supply has shaved off Bangladesh's GDP by 2-3 percent annually.<sup>3</sup>

Due to the rapid growth in demand for power, a considerable number of transmission lines and substations are overloaded. This results in frequent collapses of major equipment and network failure, leading to deterioration in system reliability. Although some improvements were made in recent years, transmission and distribution system losses in Bangladesh remained high in 2018, at around 13 percent according to official statistics.<sup>4</sup> Compared to system losses in developed economies, there is significant scope to improve system efficiency. These problems undermine the financial health of power sector entities and their capacity to raise the funds for needed investments. Interventions are therefore needed to break what has become a vicious circle. Action is particularly urgent for the key economic growth centers, such as Dhaka and Chittagong.

PGCB is currently the entity responsible for operating and developing power transmission networks in the country. Per the country's sector development plan, PGCB has undertaken several projects to build new transmission lines and substations. The proposed Project is in line with this development plan.

---

<sup>1</sup> World Bank Group (WBG), 2017. Country Snapshot for Bangladesh (October 2017).

<sup>2</sup> Power Cell, Government of Bangladesh, 2018. Bangladesh Power Sector at a Glance. Dhaka, Bangladesh.

<sup>3</sup> World Bank, 2018. Enhancement and Strengthening of Power Transmission Network in Eastern Region Project.

<sup>4</sup> Power Grid Company of Bangladesh, 2018. PGCB at A Glance.

## **II. Project Objective and Expected Results**

The objective of the Project is to upgrade and expand the power transmission system in Chittagong region to ensure adequate and reliable power supply. Upon completion, the capacity of the 400 kilovolts (kV) and 230 kV transmission networks in the Chittagong region will be enhanced. This will further create cascading benefits to the 132 kV and 33 kV secondary networks with respect to the quality of power supply in the region, such as improved voltage stability and reduced voltage fluctuation. It is expected that load shedding will be reduced, and new consumers will be connected to the grid in the region.

## **III. Project Description**

The Project will construct 46 km of 400 kV and 230 kV double-circuit transmission lines and associated substations and line bays in the Chittagong region. This will collectively provide 1,400 megavolt-ampere (MVA) transmission capacity at different voltage levels. The Project includes the construction of following facilities:

- (i) 400 kV transmission lines: 27 km
  - Anowara–Anandabazar (New Mooring) 400 kV double-circuit transmission line: 20 km overhead line and 7 km underground cable;
- (ii) 230 kV transmission lines: 19 km
  - Hathazari–Rampur 230 kV double-circuit underground cable: line-in and line-out at Anandabazar (New Mooring), 3 km;
  - Madunaghat – Khulshi 230 kV double-circuit underground cable: 16 km;
- (iii) 230 kV gas-insulated switchgear (GIS) substations: 2
  - 230/132 kV GIS substation at Anandabazar (New Mooring) with transformer of 2×350/450 MVA; and
  - 230/132/33 kV GIS substation at Khulshi with transformer of 2×350/450 MVA (230/132kV) and 3×80/120MVA (132/33 kV).
- (iv) Bay extensions: 2
  - Two 230 kV GIS line bays at Madunaghat substation.

## **IV. Environmental and Social Category**

The Project has been screened and reviewed with reference to AIB's Environmental and Social Policy (ESP) and Environmental and Social Standards (ESS). The Project has been assigned Category B. ESS 1, Environmental and Social Assessment and Management and ESS2, Involuntary Resettlement apply to the Project. As required for a Category B Project, an Environmental and Social Impact Assessment (ESIA) has been prepared by PGCB to identify the environmental and social risks and impacts of the Project. The ESIA includes an Environmental and Social Management Plan (ESMP), which delineates the mitigation and monitoring measures for the identified risks and impacts. The ESMP includes a reporting mechanism among responsible agencies and a monitoring plan during construction and post-construction phases. The budget for implementing the ESMP has been developed. A Resettlement Planning Framework (RPF) has been developed to address issues of temporary disruption of livelihood of shopkeepers along the alignment of the underground transmission cables, and loss of agricultural crops due to construction of overhead lines.

The Project is expected to generate socio-economic benefits by ensuring adequate and reliable power supply and promoting economic development in the region. The Project is not located in ecologically critical areas, and the potential negative impacts of the Project will be temporary and reversible in nature and will occur mostly during the construction phase. The Project's adverse environmental and social impacts will primarily comprise temporary disruptions in traffic and public utilities, air pollution, noise, and impacts on vegetation, crops and top soil particularly in agricultural lands, all of which will be addressed through mitigation measures included in the ESIA. As noted above, temporary disruption of livelihoods of shopkeepers along the alignment of the underground transmission cables, and loss of agricultural crops due to construction of overhead lines, are anticipated. The RPF provides guidelines for addressing and compensating these losses, which will be reflected in a Resettlement Plan. The ESIA also addresses impacts during post-construction phase, which include the impacts of noise and waste disposal from maintenance and substations.

Consultations were held in phases during the preparation of the ESIA. The ESIA was finalized based on comments and feedback received from the participants/affected people during the consultations. The ESIA and the Bengali translation of the Executive Summary and the RPF are disclosed at the website of PGCB<sup>5</sup> and in printed form in the project area. Continued consultations are planned with project-affected people before and after construction begins. The documents will be updated as needed to incorporate the feedback and comments from the consultations. AIIB's Policy on the Project-affected People's Mechanism will be applicable. A Grievance Redress Mechanism in accordance with the requirements of AIIB's ESP will be established for the Project and start operating soon after the loan becomes effective.

The Project-affected People's Mechanism has been established by AIIB to provide an opportunity for an independent and impartial review of submissions from Project-affected people who believe they have been or are likely to be adversely affected by AIIB's failure to implement its ESP in situations when their concerns cannot be addressed satisfactorily through Project-level Grievance Redress Mechanism or AIIB Management's processes.<sup>6</sup>

## V. Project Cost and Financing Source

The Project's cost estimate is about USD176.60 million, of which a loan of USD120 million will be provided by AIIB. Any shortfall in the funds required would be covered by the government and/or PGCB.

<b>Sources</b>	<b>Amount (US \$ million)</b>	<b>Share of Total (%)</b>
AIIB	120.00	68
Government	46.39	26
PGCB	10.21	6
<b>Total</b>	<b>176.60</b>	<b>100</b>

<sup>5</sup> For more details, please refer to the website: <https://pgcb.org.bd/PGCB/?a=pages/esia.php>

<sup>6</sup> For information on the PPM, including how to make submissions, please visit <https://www.aiib.org/en/policies-strategies/operational-policies/policy-on-the-project-affected-mechanism.html>

## **VI. Implementation**

The Project will be implemented over 45 months, beginning April 1, 2019 through December 31, 2022. All contracts funded by the loan proceeds will be procured in accordance with the Bank's Procurement Policy and the associated Interim Operational Directive: Procurement Instructions for Recipients.

### **Contact Points:**

Borrower:

Mr. Md. Shahriar Kader Siddiky  
Joint Secretary, Economic Relations Division (ERD)  
Ministry of Finance, Government of Bangladesh  
Email: [wingchief-asia@erd.gov.bd](mailto:wingchief-asia@erd.gov.bd)

Implementing Entity:

Mr. Abdur Rashid Khan  
Chief Engineer, Planning and Development  
Power Grid Company of Bangladesh (PGCB)  
Email: [arkpgcb@gmail.com](mailto:arkpgcb@gmail.com)

AIIB:

Mr. Raqib Ahmed Chowdhury  
Project Team Leader/ Investment Operations Specialist  
Asian Infrastructure Investment Bank (AIIB)  
Email: [raqib.chowdhury@aiib.org](mailto:raqib.chowdhury@aiib.org)