

## DESIGN AND MONITORING FRAMEWORK FOR THE INVESTMENT PROGRAM (PROJECT 3)

### Impacts the Project is aligned with:

Better access to reliable electricity supply in Bangladesh. (Power System Master Plan 2010)<sup>a</sup>

Project Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
<b>Outcome</b>  Increased efficiency and capacity of the power system in Bangladesh.	By 2020:  a. Annual electricity generation in Ashuganj Power Station increased by 1,000 GWh (Baseline: 3,709 GWh in 2014)  b. Power transmission capacity in project area increased by 341 MVA (Baseline: 82 MVA in 2014)  c. System loss of BREB's distribution system in Dhaka Division reduced by 0.5% (Baseline: 10% in 2014)  d. CO <sub>2</sub> emissions reduced by 808,188 tons per year in Ashuganj Power Station (Baseline: 0 ton in 2014)	APSCL annual report  PGCB annual reports.  BREB annual reports  APSCL annual report	Gas supply is decreased, reducing annual power generation output
<b>Outputs</b> 1. Power generation system expanded and upgraded.  2. Transmission system expanded and upgraded.	By 2020: Power generation capacity at Ashuganj Power Station complex increased by 180 MW (to be jointly co-financed by IDB) (Baseline: 777 MW in 2014)  By 2018: 2a. 65 km of 132 kV lines upgraded in Chittagong Division between Comilla (South) and Chandpur (Baseline: 0 km in 2014)  2b. 7 km of 132 kV underground transmission line constructed in Chittagong Division between Madunaghat and Kalurghat (Baseline: 0 km in 2014)  2c. 4 substations (132/33 kV)	APSCL annual reports;  Quarterly progress reports from APSCL  PGCB annual reports;  Quarterly progress reports from PGCB  PGCB annual reports;  Quarterly progress reports from PGCB  PGCB annual reports;	Unexpected increase in prices of equipment and raw materials, and construction delays impact the work.

Project Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
3. Demand side energy efficiency improved	constructed or upgraded in Chittagong Division (Baseline: 0 nos in 2014)  700,000 of post-paid meters in Dhaka Division replaced with prepayment meters by 2018	Quarterly progress reports from PGCB  BREB annual reports; Quarterly progress reports from BREB	
<b>Key Activities with Milestones</b>  <b>1. Power generation system expanded and upgraded</b> 1.1 Issue bidding documents (December 2015) and award the turnkey contract (August 2016). 1.2 Construct the Ashuganj 400 MW combined cycle gas–turbine power plant (East) (October 2016–September 2019) 1.3 Commission the power plant (October–December 2019). <b>2. Transmission system expanded and upgraded</b> 2.1 Issue bidding documents (January 2016) and award contracts (August 2016). 2.2 Construct 2 new 132/33 kV substations, upgrade 2 existing 132/33 kV substations, and upgrade and/or build 132 kV transmission lines, in Chittagong Division (October 2016–September 2018). 2.3 Commission the substations and transmission lines (October 2018–November 2018) <b>3. Demand side energy efficiency improved</b> 3.1 Issue bidding documents (December 2015) and award contracts (June 2016). 3.2 Procure, install and commission prepayment meters to replace the existing analog post-paid meters in Dhaka Division (July 2016–June 2018).			
<b>Inputs</b>  ADB: \$205,000,000 Government: \$105,000,000 IDB: \$220,000,000			
<b>Assumptions for Partner Financing</b>  Government counterpart funds and IDB fund are available timely.			

ADB = Asian Development Bank, APSCL = Ashuganj Power Station Company, BREB = Bangladesh Rural Electrification Board, CO<sub>2</sub> = carbon dioxide, GWh = gigawatt-hour, IDB = Islamic Development Bank, km = kilometer, kV = kilovolt, MVA = megavolt-ampere, MW = megawatt, PGCB = Power Grid Corporation of Bangladesh.

<sup>a</sup> Power System Master Plan, Ministry of Power, Energy and Mineral Resources, 2010.

Source: Asian Development Bank.