

# Project Administration Manual

Project Number: 44192-01

Loan Number: LXXXX

August 2010

People's Republic of Bangladesh: Bangladesh-India  
Electrical Grid Interconnection Project

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### **Project Administration Manual Purpose and Process**

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The executing and implementing agencies are wholly responsible for the implementation of ADB financed projects, as agreed jointly between the borrower and ADB, and in accordance with Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by executing and implementing agencies of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At Loan Negotiations the borrower and ADB shall agree to the PAM and ensure consistency with the Loan agreement. Such agreement shall be reflected in the minutes of the Loan Negotiations. In the event of any discrepancy or contradiction between the PAM and the Loan Agreement, the provisions of the Loan Agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP) changes in implementation arrangements are subject to agreement and approval pursuant to relevant Government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the PAM.

## ABBREVIATIONS

ADB	=	Asian Development Bank
ADF	=	Asian Development Fund
AFS	=	audited financial statements
DMF	=	design and monitoring framework
DPP	=	Development Project Proposal
EA	=	executing agency
EIA	=	environmental impact assessment
EMP	=	environmental management plan
ERD	=	Economic Relations Division
GACAP	=	governance and anticorruption action plan
GDP	=	gross domestic product
HVDC	=	high voltage direct current
IA	=	implementing agency
ICB	=	international competitive bidding
IEE	=	initial environmental examination
kV	=	kilo volt
LILO	=	loop-in loop-out
MOU	=	memorandum of understanding
MW	=	megawatt
PAI	=	project administration instructions
PAM	=	project administration manual
PGCB	=	Power Grid Company of Bangladesh Ltd.
PGCIL	=	Power Grid Corporation of India Ltd.
PMU	=	project management unit
RO	=	resettlement officer
RP	=	resettlement plan
RRP	=	report and recommendation of the President to the Board
SPS	=	Safeguard Policy Statement
TOR	=	terms of reference

## I. PROJECT DESCRIPTION

1. Bangladesh and India will establish a cross-border interconnection between the western electrical grid of Bangladesh and the eastern electrical grid of India to facilitate the exchange of electricity between the two countries. In accordance with technical, operational, and economic considerations, the proposed interconnection will include about 125 kilometers (km) of 400 kilovolts (kV) double-circuit transmission line between the electrical substations at Baharampur in India and Bheramara in Bangladesh, a 400 kV switching station at Baharampur, a 500-megawatt (MW) back-to-back high voltage direct current (HVDC) substation (400/230 kV) at Bheramara, and associated infrastructure on both sides. The interconnection will facilitate an initial power flow of 500 MW into Bangladesh from the Indian grid starting in 2012, with a provision to expand the power flow to 1,000 MW. This will help to address the significant power shortages in Bangladesh. The project only covers the part of the interconnection facilities to be established in Bangladesh.

### A. Impact and Outcome

2. The project impact will be enhanced regional cooperation in the power sector, contributing to economic development growth in Bangladesh. The project outcome will be the successful development and operation of a power transmission link between Bangladesh and India. The project is expected to alleviate the growing power crisis in Bangladesh by making available up to 500 MW of additional power by 2012. This will partially meet the needs of existing and new consumers and support the achievement of the goal of electricity for all by 2020 in the National Energy Policy.

### B. Outputs

#### Physical

3. The Project will include (i) a 40 long kilometer 400 kV double circuit transmission line from the Bangladesh India border to Bheramara, (ii) a 500 MW back to back HVDC station at Bheramara; and (iii) a 230kV interconnection with the western grid of Bangladesh.

#### Non-Physical

4. In addition to the physical outputs, the Project will facilitate capacity building and information sharing regarding planning, development, operation, maintenance and regulation with regard to the Interconnection for the staff of Power Grid Company of Bangladesh Ltd. (PGCB), and improve the expertise of BPDB, Power Division and Bangladesh Energy Regulatory Commission (BERC) staff on various aspects of cross border electricity trading. In addition, development of complex interconnection and power exchange agreements between the two countries would be supported.

## II. IMPLEMENTATION PLANS

5. The project implementation will be completed in 30 months, i.e. by 31 December 2012 and the loan closing will be 30 June 2013. The implementation plan is shown in Figure 1.

## A. Project Readiness Activities

Indicative Activities	Months							Who responsible
	1	2	3	4	5	6	7	
Advance contracting actions	X							PGCB
Retroactive financing actions		X						PGCB and ADB
Establish project implementation arrangements	X							PGCB
ADB Board approval						X		ADB
Loan signing						X		ADB and ERD
Government legal opinion provided							X	ERD
Government budget inclusion							X	ERD and PGCB

## B. Overall Project Implementation Plan

Figure 1: Overall Project Implementation Plan

DESCRIPTION	09	2010				2011				2012			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
INTERCONNECTION BETWEEN ELECTRICAL GRIDS OF INDIA AND BANGLADESH													
Project Formulation													
Finalization of Scheme													
Preparation of Feasibility Report													
Implementation													
Establishment of W HVDC B/B Station and 230 KV Switching Stations, Bheramara													
Finalization of land for Sub-station													
Acquisition of Land													
Tendering & Award													
Preparatory works & mobilization													
Civil works, supply & erection of Equipment													
Testing & Commissioning (along with trans. Line)													
Indian border-Bheramara 400KV D/C Line- 40 kms and LILO of Ishurdi- Khulna													
Tendering & Award													
Mobilization & survey													
Foundation, supply & erection of towers & line materials and stringing													
Testing & ready for commissioning													
REVIEWS													
PROJECT COMPLETION REPORT													

## III. PROJECT MANAGEMENT ARRANGEMENTS

### A. Project Stakeholders – Roles and Responsibilities

Project Stakeholders	Management Roles and Responsibilities
Executing Agency Power Grid Company of Bangladesh (PGCB)	Responsible for supervising and monitoring of project operational performance on the Bangladesh side
Project Management Unit	PMU, headed by a project director, will

	implement the project
Steering Committee	Chaired by the Power Secretary of Bangladesh
Bangladesh Power Development Board	Single buyer procuring power in Bangladesh
Asian Development Bank	Will undertake regular project reviews and facilitate in implementation of the project
Coordination with India on construction of interconnection facilities and negotiation of power purchase agreements	Joint steering committee chaired by Secretary, Power Division, Ministry of Power, Energy and Mineral Resources, Government of Bangladesh and Secretary, Ministry of Power, India, a joint working group, and a technical team comprising representatives from both sides have been set up.

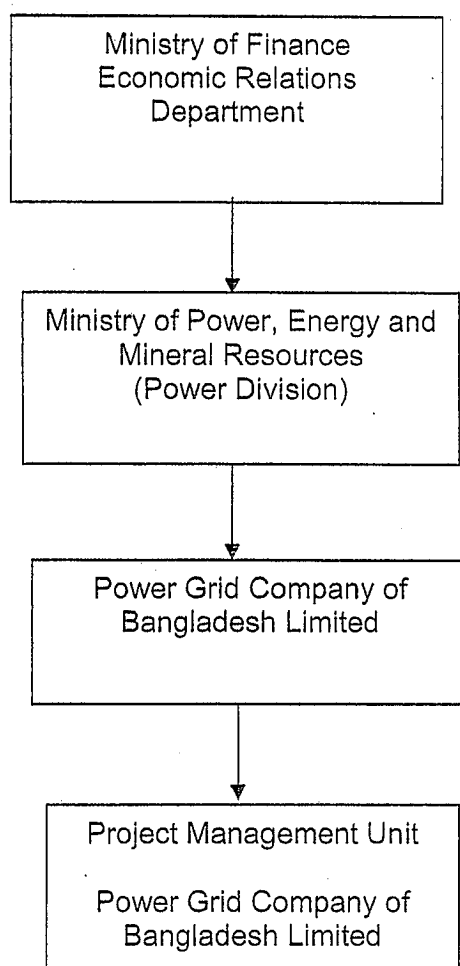
## B. Key Persons Involved in Implementation

<b>Executing Agency</b>	
Power Grid Company of Bangladesh Ltd.	Md. Aksed Ali Project Director + 8802 9888970 Pgcb_3t1p@yahoo.com Red Crescent Concorde Tower (6 <sup>th</sup> Floor) 17 Mohakhali C/ A, Dhaka-1212
<b>Asian Development Bank</b>	
Division Director	Ajay Guha Officer-in-Charge, Energy Division Telephone No.: (63-2) 632-6301 Email address: aguha@adb.org
Mission Leader	Ajay Guha Lead Professional (Energy)/ Head, PAU Telephone No.: (63-2) 632-6947 Email address: aguha@adb.org

## C. Project Organization Structure

5. Power Grid Company of Bangladesh (PGCB), a state electric transmission utility, will be the executing agency (EA) as well as the Implementing Agency (IA) for the project. It will be responsible for supervising project implementation and monitoring of project operational performance. To ensure effective project implementation, a project management unit (PMU), headed by a project director, has been established. A Steering Committee chaired by the Power Secretary has been constituted to review the progress and achievements of the project.

**Figure 2: Organization Structure**



#### **IV. COSTS AND FINANCING**

6. The total estimated cost of the project will be \$158.6 million. The tentative financing plan for the project is summarized in Table 1. The HVDC substation, LILO facility, switching station, and transmission lines are proposed to be funded by ADB and the Government of Bangladesh.

## A. Detailed Cost Estimates by Expenditure Category

Item	(Taka million)			(US \$ million)			% of Total Base Cost
	Foreign	Local	Total	Foreign	Local	Total	
	Exchange	Currency	Cost	Exchange	Currency	Cost	
<b>A. Investment Costs <sup>a</sup></b>							
1 Civil works	1,528.1	1,037.0	2,565.1	21.8	14.8	36.6	26%
2 Equipment	4,828.6	1,086.5	5,915.1	69.0	15.5	84.5	61%
3 Environment and social mitigation	0.0	7.8	7.8	0.0	0.1	0.1	0%
4 Land acquisition and development costs	0.0	662.7	662.7	0.0	9.5	9.5	7%
5 Consultants	345.5	0.0	345.5	4.9	0.0	4.9	4%
6 Freight and insurance	135.2	57.9	193.2	1.9	0.8	2.8	2%
7 Overheads	0.0	75.5	75.5	0.0	1.1	1.1	1%
<b>Subtotal (A)</b>	<b>6,837.3</b>	<b>2,927.5</b>	<b>9,764.9</b>	<b>97.7</b>	<b>41.8</b>	<b>139.5</b>	<b>100%</b>
<b>Total Base Cost</b>	<b>6,837.3</b>	<b>2,927.5</b>	<b>9,764.9</b>	<b>97.7</b>	<b>41.8</b>	<b>139.5</b>	<b>100%</b>
<b>B. Contingencies</b>							
1 Physical <sup>b</sup>	68.4	29.3	97.7	1.0	0.4	1.4	1%
2 Price <sup>c</sup>	546.5	301.6	848.2	7.8	4.3	12.1	9%
<b>Subtotal (B)</b>	<b>614.9</b>	<b>330.9</b>	<b>945.8</b>	<b>8.8</b>	<b>4.7</b>	<b>13.5</b>	<b>10%</b>
<b>C. Financing Charges During Implementation</b>							
1 Interest during implementation <sup>d</sup>	329.7	59.2	388.9	4.7	0.8	5.6	4%
<b>Subtotal (C)</b>	<b>329.7</b>	<b>59.2</b>	<b>388.9</b>	<b>4.7</b>	<b>0.8</b>	<b>5.6</b>	<b>4%</b>
<b>Total Project Cost (A+B+C)</b>	<b>7,781.9</b>	<b>3,317.7</b>	<b>11,099.6</b>	<b>111.2</b>	<b>47.4</b>	<b>158.6</b>	<b>114%</b>

Source: ADB estimates for project cost (in Bangladesh) are based on discussions with Power Grid Company of Bangladesh (PGCB) and Development Project Proforma submitted to Planning Commission in May 2010

<sup>a</sup> In mid 2010 prices.

<sup>b</sup> Physical contingencies for investment in Bangladesh computed at 1% of Base Cost for local and foreign costs.

<sup>c</sup> Price contingencies for investment in Bangladesh computed as per ADB's *Financial Management and Analysis of Projects*, 2005.

<sup>d</sup> Interest during construction to be paid by PGCB for Government of Bangladesh debt has been computed at 5.5% per annum.

**B. Allocation and Withdrawal of Loan Proceeds**

CATEGORY			ADB FINANCING
Number	Item	Total Amount Allocated for ADB Financing (SDR) Category Subcategory	Percentage and Basis for Withdrawal from the Loan Account
1	Equipment	61,763,000	
1A	Transmission lines		100 percent of total expenditure claimed*
1B	HVDC substation		100 percent of total expenditure claimed*
2	Unallocated	4,223,000	
	Total	65,986,000	
HVDC=high voltage direct current			

\* Exclusive of all duties and taxes imposed within the territory of the Borrower.

### C. Detailed Cost Estimates by Financier

Item	ADB		Govt. of Bangladesh (incl. PGCB)		Total in Bangladesh		Govt. of India (incl. PGCIL)		Total Cost <sup>1</sup>
	Amount	% of Cost	Amount	% of Cost	Amount	% of Cost	Amount	% of Cost	
<b>A. Investment costs</b>									
1. Civil works	21.8	56%	14.8	38%	36.6	94%	2.4	6%	39.0
2. Equipment	69.0	60%	15.5	14%	84.5	74%	29.9	26%	114.4
3. Environment and social mitigation Land acquisition and development	0.0	0%	0.1	100%	0.1	100%	0.0	0%	0.1
4. Costs	0.0	0%	9.5	90%	9.5	90%	1.0	10%	10.5
5. Consulting services (project implementation)	0.0	0%	4.9	100%	4.9	100%	0.0	0%	4.9
6. Freight and insurance	2.8	100%	0.0	0%	2.8	100%	0.0	0%	2.8
7. Overheads	0.0	0%	1.1	39%	1.1	39%	1.7	61%	2.7
<b>Total base cost</b>	<b>93.6</b>	<b>54%</b>	<b>45.9</b>	<b>26%</b>	<b>139.5</b>	<b>80%</b>	<b>35.0</b>	<b>20%</b>	<b>174.5</b>
<b>B. Contingencies</b>	<b>6.4</b>	<b>44%</b>	<b>7.1</b>	<b>49%</b>	<b>13.5</b>	<b>93%</b>	<b>1.0</b>	<b>7%</b>	<b>14.5</b>
<b>C. Financing charges</b>	<b>0.0</b>	<b>0%</b>	<b>5.6</b>	<b>72%</b>	<b>5.6</b>	<b>72%</b>	<b>2.1</b>	<b>28%</b>	<b>7.7</b>
<b>Total project cost (A.+B.+C.)</b>	<b>100.0</b>	<b>51%</b>	<b>58.6</b>	<b>30%</b>	<b>158.6</b>	<b>81%</b>	<b>38.2</b>	<b>19%</b>	<b>196.7</b>
<b>% Total project cost</b>	<b>51%</b>		<b>30%</b>		<b>81%</b>		<b>19%</b>		<b>100%</b>

ADB = Asian Development Bank, PGCB = Power Grid Company of Bangladesh, PGCIL = Power Grid Corporation of India

Source: ADB estimates for project cost (in Bangladesh) are based on discussions with PGCB and Development Project Proforma submitted to Planning Commission in May 2010

<sup>1</sup> This table reflects the total cost of the Interconnection covering both Bangladesh and India. Cost estimates for the Indian side are based on the Detailed Project Report prepared by the Joint Technical Team comprising representatives from both countries.

**D. Detailed Cost Estimates by Outputs- Not required**

**E. Detailed Cost Estimates by Year**

(\$ million)

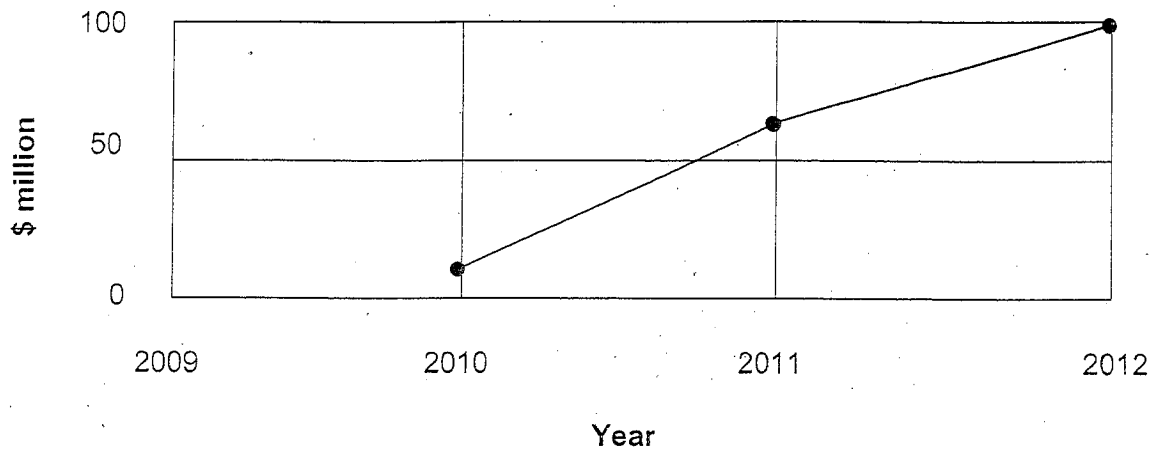
Item	Total Cost	Year 1			Year 2			Year 3		
		Amount	% of Cost	Category	Amount	% of Cost	Category	Amount	% of Cost	Category
<b>A. Investment costs</b>										
1. Civil works	36.6	7.3	20%		18.3	50%		11.0	30%	
2. Equipment	84.5	16.9	20%		42.3	50%		25.4	30%	
3. Environment and social mitigation	0.1	0.1	100%		0.0	0%		0.0	0%	
4. Land acquisition and development costs	9.5	4.7	50%		4.7	50%		0.0	0%	
5. Consulting services (project implementation)	4.9	1.0	20%		2.5	50%		1.5	30%	
6. Freight and insurance	2.8	0.6	20%		1.4	50%		0.8	30%	
7. Overheads	1.1	0.2	20%		0.5	50%		0.3	30%	
<b>Total base cost</b>	<b>139.5</b>	<b>30.8</b>	<b>22%</b>		<b>69.7</b>	<b>50%</b>		<b>39.0</b>	<b>28%</b>	
<b>B. Contingencies</b>	<b>13.5</b>	<b>0.3</b>	<b>2%</b>		<b>6.7</b>	<b>50%</b>		<b>6.5</b>	<b>48%</b>	
<b>C. Financing charges</b>	<b>5.6</b>	<b>0.6</b>	<b>11%</b>		<b>2.8</b>	<b>50%</b>		<b>2.2</b>	<b>39%</b>	
<b>Total project cost (A+B+C)</b>	<b>158.6</b>	<b>31.7</b>	<b>20%</b>		<b>79.2</b>	<b>50%</b>		<b>47.7</b>	<b>30%</b>	
<b>% Total project cost</b>	<b>100</b>	<b>20%</b>			<b>50%</b>			<b>30%</b>		

Source: ADB estimates for project cost based on discussions with PGCB and Development Project Proforma submitted to Planning Commission in May 2010

E. Contract and Disbursement S-curve

Disbursement

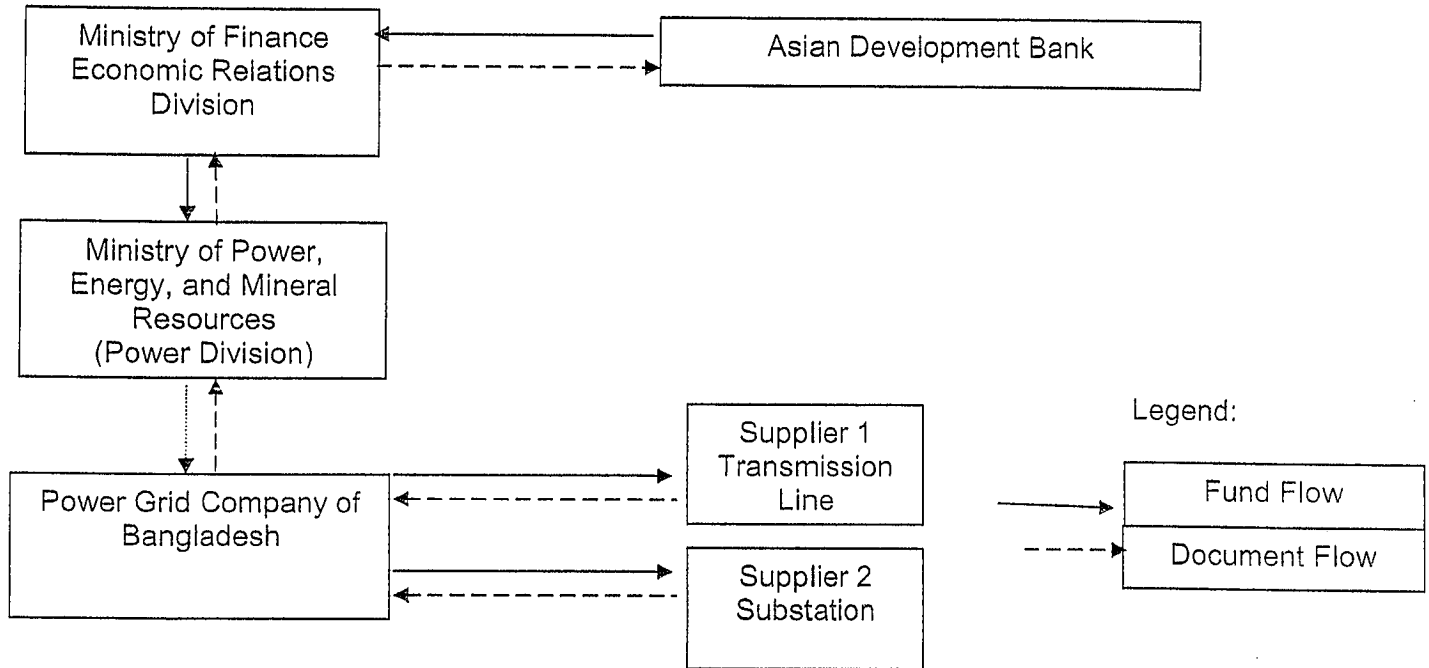
Figure 3: Disbursement



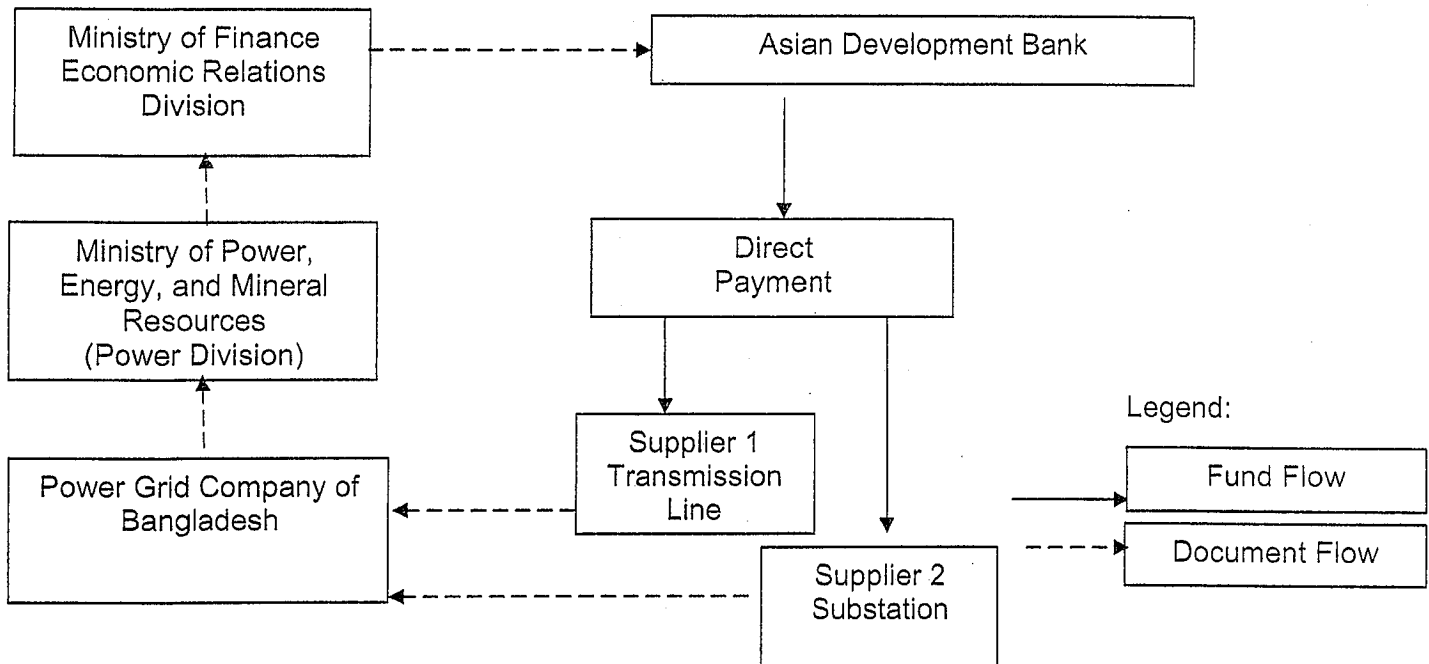
## F. Fund Flow

Figure 4: Fund Flow Diagram

### For Reimbursement Procedures



### For Direct Payment Procedure



## V. FINANCIAL MANAGEMENT

### A. Financial Management Assessment

7. The EA for the project, PGCB, was incorporated under the Companies Act (1913, re-enacted in 1994) as part of the Government's restructuring of the power sector. PGCB is responsible for the construction, operation, and maintenance of high voltage transmission system in the country. The financial management assessment (FMA) was conducted in accordance with ADB's *Financial Management and Analysis of Projects*, 2005 during project preparation and was found to be acceptable. PGCB, a recipient of ongoing ADB loans including Loan 2039: BAN Power Sector Development Project and Loan 2332: BAN Sustainable Power Sector Development Project, is familiar with ADB's procedures and reporting requirements. PGCB is listed on the Dhaka Stock Exchange and its financial parameters are disclosed on a quarterly basis. PGCB has been rotating its external auditors on a periodic basis.

8. The levels of accounts receivables at PGCB have risen to 2.1 months of sales (2009) and PGCB should develop appropriate transmission service agreements to be entered into with its customers that include the terms of service (including levels of accounts receivables) with the approval of the Bangladesh Energy Regulatory Commission (BERC) at the earliest. PGCB should conduct an actuarial valuation to determine the appropriate funding requirement for its gratuity scheme and the manner of funding any gap. PGCB should also develop appropriate systems to conduct physical verification of inventory and assets. Also, PGCB is expected to suggest an appropriate tariff basis that recognizes its prevailing cost structure to the BERC.

### B. Disbursement

9. The Loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2007, as amended from time to time), and detailed arrangements agreed upon between the Government and ADB. Pursuant to ADB's *Safeguard Policy Statement* (2009) (SPS), ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the SPS. Disbursement of loan funds under the Project will be mainly for the two turnkey packages. ADB's direct payment and reimbursement procedures will be followed.

10. Before the submission of the first withdrawal application, the borrower should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is US\$100,000, unless otherwise approved by ADB. The borrower will consolidate claims to meet this limit for reimbursement claims. Withdrawal applications and supporting documents will demonstrate, among other things that the goods, and/or services for the two turnkey packages were produced in or from ADB members, and are eligible for ADB financing. Government counterpart funds will be used to finance the remaining miscellaneous works, services, taxes, and duties.

### C. Accounting

11. PGCB will maintain separate project accounts and records by funding source for all expenditures incurred on the project. Project accounts will follow international accounting principles and practices.

## **D. Auditing**

12. PGCB will cause the detailed consolidated project accounts to be audited in accordance with International Standards on Auditing and in accordance with the Government's audit regulations by an independent auditor acceptable to ADB. The audited accounts will be submitted in the English language to ADB within 6 months of the end of the fiscal year by the EA. The Borrower and the EA have been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited accounts. ADB reserves the right to verify the project's financial accounts to confirm that ADB's share of the financing is used in accordance with ADB's policies and procedures. PGCB will also submit its audited financial statements (AFS) for each year within 6 months of the end of each fiscal year.

## **VI. PROCUREMENT AND CONSULTING SERVICES**

### **A. Advance Contracting and Retroactive Financing**

13. All advance contracting and retroactive financing will be undertaken in conformity with ADB's *Procurement Guidelines* (2010, as amended from time to time) (ADB's *Procurement Guidelines*). The issuance of invitations to bid under advance contracting will be subject to ADB's prior approval. The Borrower and the EA have been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the project. PGCB has implemented two ADB-financed projects and is conversant with ADB's guidelines and procedures. Further, PGCB has recruited Power Grid Corporation of India Ltd. (PGCIL) to assist in procurement and project management. PGCIL has extensive experience in ADB and World Bank –financed projects. Hence, it is assessed that both PGCB and PGCIL are fully capable of handling the two components under the project.

14. *Advance contracting.* In order to expedite project implementation, the Borrower has requested and ADB has approved advance contracting actions for the procurement of the two turnkey packages. The steps to be concluded in advance include tendering and bid evaluation of both the major turnkey equipment contract packages under the project that will be financed by ADB. *Retroactive financing.* The Borrower has requested approval for retroactive financing which has been approved. Retroactive financing will be limited to \$10 million which is 10% of the loan amount provided that the expenditures are made in accordance with ADB's *Procurement Guidelines* and safeguard policies and were incurred before the effective date of the loan agreement, but not earlier than 12 months before the signing date on the loan agreement.

### **B. Procurement of Goods, Works and Consulting Services**

15. All procurement of goods and works will be undertaken in accordance with ADB's *Procurement Guidelines*. International competitive bidding procedures will be followed for the procurement of the transmission line and the substation packages

16. An 18-month procurement plan indicating threshold and review procedures is in Section C.

## C. Procurement Plan

### Basic Data

Project Name	Bangladesh India Electrical Grid Interconnection Project
Country	People's Republic of Bangladesh
Executing Agency	Power Grid Company of Bangladesh Ltd.
Loan Amount	\$100 million
Loan Number	XXXXXXXXXXXX
Date of First Procurement Plan	August 2010
Date of this Procurement Plan	August 2010

### Process Thresholds, Review, and 18-Month Procurement Plan

#### 1. Project Procurement Thresholds

17. Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to the procurement of goods, works and consulting services.

#### Procurement of Goods, Works, and Consulting Services

Procurement Method	Threshold
Procurement of Plants	
ICB Plant/ Turnkey	At least \$1,000,000

#### 2. ADB Prior or Post Review

18. Except as ADB may otherwise agree, the following prior or post review requirements apply to the various procurement methods used for the Project.

Procurement Method	Prior or Post	Comments
Procurement of Plants		
ICB Plant/ Turnkey	Prior	

#### 3. Goods and Works Contracts Estimated to Cost More Than \$1 Million

19. The following table lists goods and works for which procurement activity is ongoing or expected to commence within the next 18 months.

General Description	Contract Value (US\$ million)	Procurement Method	Prequalification of Bidders (Y/N)	Advertisement Date (Quarter/ Date)	Comments
Turnkey contract for the	14.3	ICB	N	1 <sup>st</sup> Quarter	Financed by ADB and Government

transmission line				2010	of Bangladesh
Turnkey contract for the HVDC sub-station	109.6	ICB	N	1 <sup>st</sup> Quarter 2010	Financed by ADB and Government of Bangladesh

5. **Indicative List of Packages Required Under the Project**

20. The following table provides an indicative list of all procurement over the life of the Project.

**List of Contract Packages**

Contract No.	Item	Total Estimated Value Taka million	\$ million	Domestic Preference (Y/N)	Procurement Mode
A	Transmission Line	1,001.0	14.3	Yes	ICB (Turnkey)
B.	HVDC Sub-station	7,652.0	109.6	Yes	ICB (Turnkey)
<b>Total (2 packages)</b>					

**VII. SAFEGUARDS**

21. The Social and Environmental Unit (SEU) of PGCB will be responsible to coordinate and implement the entire social, environment, and resettlement activities including the implementation of the RP efficiently. The SEU will have a dedicated Resettlement Officer (RO) for the project. Further, a local NGO will be hired to assist the RO in carrying out the responsibilities effectively. The main scope of work of the NGO will be to work closely with the affected persons and communities so as to effectively implement the RP. To monitor all activities enumerated in the environment management plan and RP and report on them, a two tier monitoring system would be operationalized. This would include both internal and external monitoring. The first tier will be internal monitoring, and would be the responsibility of the RO assisted by the local NGO based on specific involuntary resettlement indicators as per the agreed and approved RP. The reports of the internal monitoring would be prepared quarterly and submitted to PGCB and ADB for review and approval.

22. At the second tier, an external expert/qualified NGO will be engaged by ADB to monitor the progress of the implementation of the RP. The external expert/qualified NGO will monitor the same using the specific indicators developed in line with the resettlement objectives and activities and verify the claims of the internal monitoring reports. The external expert/qualified NGO would prepare the report of monitoring annually and submit the same to PGCB and ADB for review. Monitoring reports prepared both internally and by the external expert/qualified NGO would be disclosed in a timely manner, in an accessible place and in a form and language(s)

understandable to affected persons and other stakeholders as well as up loaded on the PGCB and ADB websites.

23. All the activities detailed in the poverty and social action plans including livelihood restoration programs, would be closely monitored, and reported as enumerated in the previous paragraphs. These would be carried out in line with the applicable policies of ADB by way of which, in case of involuntary resettlement, all efforts would be made to improve or at least restore the quality of life of all displaced persons.

## VIII. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

### A. Project Design and Monitoring Framework

#### DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators with baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
<b>Impact</b>  Enhanced regional cooperation in the power sector, contributing to economic growth	Improvement in gross domestic product per capita in Bangladesh to more than 4% by 2015 (2008 baseline: \$574 per capita at current prices)  Power consumption in Bangladesh to improve by 2012 (2008 baseline: 159 kWh per capita in Bangladesh compared with approximately 300 kWh per capita in South Asia)  Access to power sources in the South Asia region (2009 baseline: no exchange with any other country)	Country economic outlook and government statistics  ADB Energy Outlook for Asia and the Pacific <sup>a</sup>  BPDB and annual energy sector reports for Bhutan, India, Maldives, Nepal, and Sri Lanka  BPDB annual reports	<b>Assumptions</b>  Successful development of the eastern electrical grid of India prepares the foundation for regional electricity interconnections and optimal power sourcing.  Political and operational agreements arrived at between South Asian countries on regional electricity trading  Additional investments in transmission capacity to facilitate such power flows
<b>Outcome</b>  Successful development and operation of a transmission link between Bangladesh	500 MW of power (1,152–3,456 GWh) available over the interconnection to Bangladesh	BPDB annual reports	<b>Assumptions</b>  Availability of 500 MW power generation capacity to Bangladesh on long-term basis from India

Design Summary	Performance Targets and Indicators with baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
and India	commencing 2012 (2009 baseline: no transfer of power)		<p>Power interconnection infrastructure and capacity building successfully completed by 2012</p> <p><b>Risks</b> Cost of delivered power is not competitive compared to options in Bangladesh.</p> <p>Delay in entering into power purchase agreements</p> <p>Inadequate power generation capacity in the eastern region of India</p>
<p><b>Outputs</b> <b>Physical Investment</b> 1. Bahrapur–Bheramara Power Transmission Link</p> <p><b>Nonphysical Investment</b> 1. Capacity building and information sharing on power exchange and planning, development, operation,</p>	<p>1. Creation of one new HVDC back-to-back substation of 400/230 kV at Bheramara (Bangladesh) by 2012 by PGCB</p> <p>2. Creation of 40 km of 400 kV DC transmission lines from Bheramara (Bangladesh) to the Indian border by 2012</p> <p>3. Creation of 5 km of 230 kV DC LILO and 230 kV switching station at Bheramara substation (Bangladesh) by 2012 by PGCB</p> <p>1. Number of BPDB, PGCB, BERC, and Power Division personnel attending various aspects of cross-</p>	<p>Progress reports and loan review missions</p> <p>PGCB annual report</p> <p>Tariff filings to BERC</p> <p>Workshop attendance and participant feedback</p>	<p><b>Assumptions</b></p> <p>Counterpart funds for timely project implementation are made available from the government and PGCB</p> <p>Approval of contract awards by the relevant authorities is timely</p> <p>Land acquisition and approvals for construction of substation and transmission lines are timely</p> <p><b>Risks</b> Limited implementation capacity of the BPDB</p> <p>Increase in the prices of raw materials exceeds contingency and inflation forecasts</p> <p><b>Assumption</b> Information sharing and capacity building from other Asian examples are relevant to the development of interconnection agreements between the two countries</p>

Design Summary	Performance Targets and Indicators with baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p>maintenance, and regulation of the interconnection</p> <p>2. Development of transmission, interconnection, operation, and power exchange agreements between Bangladesh and India</p>	<p>border power trading workshop</p> <p>2. Long-term agreements for power transfer signed between Bangladesh and India</p>	<p>Signed transmission, interconnection, operation, and power exchange contract agreements between Bangladesh and India</p>	<p><b>Risk</b> Experienced consultants with adequate experience on similar cross-border transfers are not available in the proposed timeframe</p>

Activities with Milestones	Inputs
<p>400/230 kV substation</p> <p>1.1 Procurement of major equipment: Issuance of bidding documents by March 2010 and contract awards by October 2010</p> <p>1.2 Construction of substation started by November 2010</p> <p>1.3 Commission of substation by fourth quarter of 2012</p> <p>Transmission lines</p> <p>2.1 Procurement of major equipment: Issuance of bidding documents by March 2010 and contract awarded by August 2010</p> <p>2.2 Construction of transmission lines started by September 2010</p> <p>2.3 Commission of transmission lines by fourth quarter of 2012</p> <p>Consulting services (small-scale capacity development TA to review interconnection agreements, capacity building, and information sharing regarding interconnection)</p> <p>3.1 Commencement of staff consultant selection process by June 2010</p> <p>3.2 Consultant selection and mobilization in phases from July 2010</p> <p>3.3 Completion of services by April 2012</p>	<p>ADB (ADF): \$100 million</p> <p>Government of Bangladesh: \$59 million</p>

ADB = Asian Development Bank, ADF = Asian Development Fund, BERC = Bangladesh Energy Regulatory Commission, BPDB = Bangladesh Power Development Board, DC = double circuit, GWh = gigawatt per hour, HVDC = high voltage direct current, kWh = kilowatt per hour, kV = kilovolt, PGCB = Power Grid Company of Bangladesh, LILO = loop-in loop-out, MW = megawatt, TA = technical assistance.

<sup>a</sup> ADB. (Year). *Energy Outlook for Asia and the Pacific*. Manila.

Source: PGCB. 2010. *Development Project Proforma*. Dhaka.

## B. Monitoring

24. Overall monitoring of the project in terms of progress will be undertaken by the Steering Committee, which will review monthly progress reports submitted by PGCB. The Projects Department of PGCB will monitor progress, procurement, quality, contract management, and fiduciary management. In addition, the Projects Department will undertake regular field visits and provide guidance to the project director and the project consultants. A national social safeguard specialist will be recruited to review and monitor the implementation of the resettlement plan, conduct consultations with affected persons and report implementation status of the RP. To ensure compliance with the environmental regulations and requirements laid down in the environment action plan, a national environment specialist will be recruited who will review the status on a regular basis and provide guidance and submit compliance reports on a quarterly basis or as appropriate.

## C. Evaluation

25. ADB will field regular review missions every six months at the minimum to review status of contract awards, disbursements, physical progress, and implementation of the environmental management plan and resettlement plans. Within 6 months of physical completion of the project, PGCB will submit a project completion report (PCR) to ADB. Subsequently, ADB will field a mission to finalize the PCR.

**Table 1: Evaluation Methodology**

Evaluation Activity	Purpose	Methodology	Who responsible and involved
Review Mission	Review the progress of the project and provide guidance to facilitate implementation	Site visits and meetings with EA officials, contractors, consultants at least twice a year	ADB/ PGCB
Mid Term Review	Comprehensive review of the project	Not needed as review missions will be conducted regularly and the project implementation is only 3 years	
Project completion report	Evaluate the overall output of the project and its relevance and suitability	Site visit and meetings with EA officials, contractors, consultants	ADB/ PGCB

ADB= Asian Development Bank; EA= executing agency; PGCB= Power Grid Company of Bangladesh

## D. Reporting

26. PGCB will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions; (c) updated procurement plan, and (d) updated

implementation plan for next 12 months; and (iii) a project completion report within 6 months of physical completion of the project. To ensure projects continue to be both viable and sustainable, project accounts and the audited financial statements, together with the associated auditor's report, should be adequately reviewed.

#### **E. Stakeholder Communication Strategy**

27. The Stakeholder Communications Strategy is described in the following table. PGCB will post all relevant information on its website. The website will include at minimum information regarding the bidding process, bidders, contract awards, use of funds disbursed under the Project and physical progress.

**Table 2: Stakeholder Communication Strategy**

<b>Project information to be communicated</b>	<b>Means of Communication</b>	<b>Responsibility</b>	<b>Audience</b>	<b>Frequency</b>
Report and Recommendation of the President (RRP) with linked documents	ADB website	ADB	ADB, Government of Bangladesh, Development Partners, Civil Society, Individuals	Once
Project information while planning/ designing	Discussions and stakeholder consultations	PGCB	Project beneficiaries	Regular intervals during planning and design
Status of implementation during construction	Boards at site	EA/ Contractors	Project beneficiaries	All the time at construction sites
Project Performance Reports and Project Information Documents	ADB website	ADB	ADB, Government of Bangladesh, Development Partners, Civil Society, Individuals	Every quarter
Monthly progress reports	Website of PGCB, Reports to the Joint Working Groups and Joint Steering Committees	PGCB	ADB, Government of Bangladesh, Development Partners, Civil Society, Individuals	Monthly
Project completion report	ADB website	ADB	ADB, Government of Bangladesh,	Once

			Development Partners, Civil Society, Individuals	
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ADB= Asian Development Bank; EA= executing agency; PGCB= Power Grid Company of Bangladesh

#### IX. ANTICORRUPTION POLICY

28. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project. All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.

29. To support these efforts, relevant provisions are included in the loan and project agreements and the bidding documents for the project.

#### X. ACCOUNTABILITY MECHANISM

30. People who are, or may in the future be, adversely affected by the project may address complaints to ADB, or request the review of ADB's compliance under the Accountability Mechanism.

#### XI. RECORD OF PAM CHANGES

To be inserted as and when any changes are necessary and agreed by both sides.

**SIGNED IN DHAKA, BANGLADESH ON 2 August 2010**

On behalf of Asian Development Bank



Ajay S. Guha  
Lead Professional, Energy

On behalf of Power Grid Company of  
Bangladesh Ltd



Md. Aksed Ali  
Project Director