

FRAMEWORK FINANCING AGREEMENT
Power System Expansion and Energy Efficiency Improvement
Investment Program

Parties	This Framework Financing Agreement ("FFA") dated 7 October 2012 is between People's Republic of Bangladesh and Asian Development Bank (ADB).
MFF Investment Program	<p>Bangladesh is committed to and will implement the Power System Expansion and Efficiency Improvement Investment Program. This Investment Program aims to provide the required investments critically needed to address the current power shortages in the country, and is described in Schedule 1 hereto.</p> <p>The total cost of the Power System Expansion and Energy Efficiency Improvement Investment Program over the period 2012 to 2015 is expected to be up to \$1600 million equivalent, and subdivided into three tranches with the following tentative investment programs: Tranche 1 - \$400 million, Tranche 2 - \$710 million and Tranche 3 - \$490 million. ADB will provide \$700 million financing while \$678 million co-financing will be mobilized from other lending institutions. The Balance \$222 will be provided by the Government of Bangladesh.</p>
Multitranche Financing Facility	<p>The Multitranche Financing Facility (the Facility) is intended to finance projects under the Power System Expansion and Energy Efficiency Improvement Investment Program, provided that such projects comply with the criteria set out in Schedule 4 hereto and that understandings set out in this FFA are complied with.</p> <p>Tranche 1 will finance project components that improve energy efficiency in open cycle power plants to add 50% more capacity, selected transmission segments that relieve persistent network constraints, and capacity building. Tranche 2 will support further expansion of generation and transmission capacity, and distribution improvement projects ensuring that increased generation capacities will be fully utilized through adequate power evacuation facilities from production to load centers and through new connections to end-users. A pilot project for solar irrigation is included in tranche 2. Tranche 3 will focus on increasing generation capacity through energy efficiency improvements.</p>
This Framework Financing Agreement	This FFA does not constitute a legal obligation on the part of ADB to commit any financing. ADB has the right to deny any financing request made by Bangladesh, cancel the uncommitted portion of the Facility, and withdraw Bangladesh's right to request any financing tranches under Facility. Financing tranches may be made available by ADB provided matters continue to be in accordance with the general understandings and expectations on which the Facility is based and which are laid out in this FFA.

This FFA does not constitute a legal obligation on the part of Bangladesh to request any financing. Bangladesh has the right not to request any financing under the Facility. Bangladesh also has the right at any time to cancel any uncommitted portion of the Facility.

Bangladesh and ADB may exercise their respective rights to cancel the Facility or any uncommitted portion thereof, and ADB may exercise its right to refuse a financing request, by giving written notice to such effect to the other parties. The written notice will provide an explanation for the cancellation or refusal and, in the case of a cancellation, specify the date on which the cancellation takes effect.

Financing Plan

The financing plan for the Power System Expansion and Efficiency Improvement Investment Program is summarized below.

Table 1: Financing Plan for the Power System Expansion and Efficiency Improvement Investment Program

Source	Amount (\$ million)	Share of Total (%)
Power System Expansion and Efficiency Improvement		
Asian Development Bank	700	44
Co-financing	678	42
Government	222	14
Total (Investment Program)	1600	100
Tranche 1		
Asian Development Bank	185	46
Co-financing	183	46
Government	32	8
Subtotal (Tranche 1)	400	100
Tranche 2		
Asian Development Bank	310	44
Co-financing	295	41
Government	105	15
Subtotal (Tranche 2)	710	100
Tranche 3		
Asian Development Bank	205	42
Co-financing	200	41
Government	85	17
Subtotal (Tranche 3)	490	100

Financing Terms

ADB will provide loans to finance projects under the Investment Program, as and when the latter are ready for financing, provided, Bangladesh is in compliance with the understandings hereunder, and the projects are in line with those same understandings. Each loan will constitute a tranche.

Each tranche may be financed under terms different from the financing terms of previous or subsequent tranches. The choice of financing terms will depend on the project, capital market conditions, and ADB's financing policies, all prevailing on the date of signing the legal agreement for such tranche.

Tranches may be provided in sequence or simultaneously, and some may overlap in time with each other.

Commitment charges or guarantee fees are not payable on the Facility. They are payable only on financing actually committed by ADB as a loan or guarantee. ADB rules on commitment charges and guarantee fees, which are in effect when the legal agreements are signed for a tranche, will apply with respect to such tranche.

Amount

The maximum financing amount available under the Facility is US \$1600 million. ADB's contribution for the Program will be not more than \$700 million. It will be provided in individual tranches from ADB's Ordinary Capital Resources and co-financing from other lending institutions, in the following manner:

Tranche 1: US \$400 million

Tranche 2: US \$710 million

Tranche 3: US \$490 million

Availability Period

The last date on which any disbursement under any tranche may be made will be October 31, 2022. The last financing tranche is expected to be executed no later than January 31, 2017.

Terms and Conditions

Bangladesh will cause the proceeds of each tranche to be applied to the financing of expenditures of the Investment Program, in accordance with conditions set forth in this FFA and the legal agreements for each tranche.

Execution

The Coordinating Agency of the Facility will be the Power Division, Ministry of Power, Energy and Mineral Resources (MOPEMR). The Coordinating Agency will oversee the implementation of the Investment Program in accordance with the principles set forth in Schedule 3 to this Agreement, and as supplemented in the legal agreements for each tranche.

Executing agencies (EAs) for the loan tranches are the following: (i) Tranche 1 – Bangladesh Power Development Board (BPDB), North-West Power Generation Company Limited (NWPGL), Power Grid Company of Bangladesh Limited (PGCB), and Power Division, Ministry of Power, Energy and Mineral Resources (MPEMR); (ii) Tranche 2 – Power Grid Company of Bangladesh

Limited (PGCB), Dhaka Electric Supply Company Limited (DESCO) and Dhaka Power Distribution Company Limited (DPDC), and Rural Electrification Board (REB); and (iii) Tranche 3 – Bangladesh Power Development Board (BPDB) Electricity Generation Company of Bangladesh (EGCB) and Rural Power Company Limited (RPC).

Periodic Financing Requests

Bangladesh may request, and ADB may agree, to provide loans under the Facility to finance the Investment Program and its related projects upon the submission of a Periodic Financing Request (PFR). Each PFR should be submitted by Bangladesh. Bangladesh will make available to the Project Executing Agencies, the proceeds of the tranche in accordance with the related PFR, and the legal agreements for the tranche.

ADB will review the PFR and if found satisfactory, prepare the related legal agreement.

The projects for which financing is requested under the PFR will be subject to the selection criteria set out in Schedule 4 hereto, satisfactory due diligence, and preparation of relevant safeguard and fiduciary frameworks and other documents. The Facility will be implemented in accordance with the general framework set out in Schedule 3 to this FFA, and the Facility Administration Manual agreed between Bangladesh and ADB.

Until notice is otherwise given by Bangladesh, the Economic Relations Division, Ministry of Finance will be Bangladesh's authorized representatives for purposes of executing PFRs.

General Implementation Framework

The Facility will be implemented in accordance with the general framework set out in Schedule 3 hereto.

Procedures

Tranches to be provided under the Facility will be subject to following procedures and undertakings:

- (a) Bangladesh will notify ADB of a forthcoming PFR in advance of the submission of the PFR.
- (b) Bangladesh will submit a PFR in the format agreed with ADB.
- (c) ADB may, in its sole discretion, decline to authorize the negotiation and execution of any legal agreement for a tranche.
- (d) If ADB confirms acceptance of the PFR, the legal agreements will be negotiated and executed by the parties.

PFR information

The PFR will substantially be in the form attached hereto, and will contain the following details:

- (i) Loan amount;
- (ii) Description of project components to be financed;
- (iii) Cost estimates and financing plan;
- (iv) Implementation arrangements specific to the projects;
- (v) Confirmation of the continuing validity of and adherence to the understanding in this Agreement;
- (vi) Confirmation of compliance with the provisions under previous Loan Agreement(s) and Project Agreement(s), as appropriate; and
- (vii) Other information as may be required under the Facility Administration Manual, or reasonably requested by ADB.

Safeguards

Attached as Schedule 5 are references to the Safeguard Frameworks that will be complied with during the implementation of the Facility.

ADB's Safeguard Policy Statement (2009) and the Government of Bangladesh applicable environment and social safeguards laws in effect as of the date of signing of legal agreements for a tranche will be applied with respect to the subprojects financed under such tranche. When cofinanciers' safeguards requirements are substantially different from those of ADB the more stringent of the two requirements will be applicable.

Procurement

All goods and services to be financed under the Facility will be procured in accordance with ADB's *Procurement Guidelines* (2010, as amended from time to time). For the packages co-financed by other donors, additional conditions may apply.

Consulting Services

All consulting services to be financed under the Facility will be procured in accordance with ADB's *Guidelines on the Use of Consultants* (2010, as amended from time to time). For the consultants co-financed by other donors, additional conditions may apply.

**Advance contracting;
Retroactive financing**

Under each tranche, ADB may, subject to its policies and procedures, allow on request (a) advance contracting and and retroactive financing of eligible expenditures. Bangladesh acknowledges that any approval of advance contracting and retroactive financing will not constitute a commitment by ADB to finance the related project.

Disbursements

Disbursements will be made in accordance with ADB's *Loan Disbursement Handbook* (2012, as amended from time to time).

**Monitoring,
Evaluation, and
Reporting
Arrangements**

Schedule 2 hereto sets out the Design and Monitoring Framework for the Facility, against which the implementation effectiveness will be evaluated. Section C of the Schedule 3 hereto describes details of monitoring and reporting requirements.

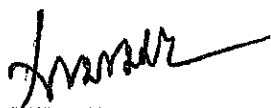
Undertakings

Attached as Schedule 6 are the undertakings provided by Bangladesh

PEOPLES REPUBLIC OF BANGLADESH

ASIAN DEVELOPMENT BANK

By:



Saifuddin Ahmed
Joint Secretary
Economic Relations Division

By:



Stefan Ekelund
Deputy Country Director and
Officer-in-Charge

SCHEDULE 1

MFF CONSTITUENTS

A. Roadmap

1. Access to power in Bangladesh is limited to about 50% of the population and those who have access also face severe power shortages. Load shedding in Dhaka city in 2011 and summer of 2012 was about five hours per day. Power shortages have constrained the potential economic growth in Bangladesh and cost of which have been estimated to be about 0.5% of GDP¹. According to "Vision 2021" – government's policy statement - the government's vision for the power sector is to ensure universal access to grid electricity by the year 2020, with an interim target to reach an access level of 68% by year 2015. About 20,000 MW of new generation capacity need to be added to the system by 2020, together with matching transmission and distribution improvements to reach the universal access.

2. Key characteristics of the power sector of Bangladesh include: (i) supply demand imbalance; (ii) over-reliance on a single source of energy – natural gas; (iii) limited access to electricity and low consumption; and (iv) poor grid reliability and medium to high system losses. The available power generation capacity in Bangladesh by June 2011 was 4890 MW, whereas the estimated unconstrained demand was 6765 MW, leaving about 30% of the peak demand unmet. Load shedding is required in certain areas owing to capacity constraints in generation. Transmission and distribution constraints exacerbate the situation. Natural gas accounted for about 81% of generation in 2011. The balance was generated using by diesel (8%), fuel oil (6%), coal (2%) and hydropower (3%). The average consumption of electricity (180 kWh per person per year) is one of the lowest per capita consumption levels in the world.

3. BPDB is the largest single institution in the power sector, with 53% of generating capacity, performing the functions of the single buyer of all generation and bulk supplier to distribution utilities. The balance 47% of generation was from Independent Power Producers (IPPs), short-term IPPs (SIPPs), and rental power plants. Power Grid Company of Bangladesh (PGCB) is the transmission utility, owning and managing the transmission network and substations at 132 kV and 230 kV, and the national load dispatch centre. Purchasing bulk power from BPDB at 132 kV level or 33 kV level, the distribution companies each delivered the following shares of the total bulk sales in 2011: Dhaka Power Distribution Company Limited (DPDC): 21%, Dhaka Electricity Supply Company Limited DESCO: 11%, Western Zone Power Distribution Company Limited (WZPDCL): 6%, and Rural Electrification Board/PBS: 36%. BPDB's delivered the rest 25% of sales to end-use customers.

4. The major challenges in the power sector of Bangladesh are: (i) providing universal access to power; (ii) providing good quality and reliable power supply; (iii) ensuring gas availability for generation; (iii) long term energy security and fuel diversity; (iv) cost recovery and financial sustainability of power sector agencies; and (v) mainstreaming renewable energy. Providing access to the grid for the remaining 50% of

¹ Sixth Five Year Plan, 2011-2015, Accelerating Growth and Reducing Poverty Part1: Strategic Directions and Policy Framework, Planning Commission Ministry of Planning Government of the People's Republic of Bangladesh, July 2011

the population is one of the main challenges faced by the sector. This requires construction of new power plants, streamlining maintenance and improving the efficiency of existing power plants. Heavy dependence on natural gas (81% of generation) has provided the much needed electricity at lower costs, allowing Bangladesh to report lower production costs of electricity compared with other countries. The declining reserves of gas, however, has curtailed the operation of some power plants and delayed construction of others. Tariff revisions have so far been unable to bring the electricity prices to cost recovery level.

5. A key requirement of a healthy financial position of utilities is cost reflective pricing. BPDB, the largest utility with 53% of generation capacity and 25% of distribution network remains vertically integrated to some extent despite the unbundling of the sector. Generation and distribution functions of BPDB require further unbundling to improve both technical and operational efficiencies, enabling transparent and independent financial operations of separate business units under the power supply industry. The relative abundance of lower-cost indigenous natural gas and the inherently lower hydropower potential have caused the contribution of renewable energy to the national grid be limited to 3%.

6. The government's strategic goals in addressing the above sector issues are stated in the draft energy policy, 2008². Sixth five year plan of the Government (2011 - 2015) provides short to medium term implementation plan for these policy goals together with targets. The Vision 2021 envisages providing adequate and reliable generating capacity through an accelerated program to develop new generating facilities and re-powering/replacing the existing facilities. It also envisages demand management and efficiency improvement in generation, transmission, distribution. The Power System Master Plan (2010) recommended a fuel diversification strategy, whereby, the base load requirements would be increasingly met with coal-fired power plants, while gas-fired generation is shifted to serve the peaking requirements, to achieve the following fuel mix by year 2030: coal (domestic): 29%, coal (imported): 22%, gas: 23%, oil: 6%, others (nuclear, renewable, imports): 21%³. The Master Plan includes a transmission plan in addition to its generation plan. Government's Renewable Energy Policy includes a renewable energy development plan with targets to meet 5% of electricity demand from renewable energy by year 2015, and 10% by 2020⁴.

7. Power sector utilities have responded to the government's policy target to achieve 68% access by 2015, by developing investment plans for new capacity and rehabilitation/upgrading of existing facilities. These investment plans are elaborated in the Sixth Five Year Plan (2011-2015). It envisages increasing the generation capacity from about 5271 MW (as of June 2010) to 15,457 MW (by June 2015). This requires a capacity addition of 12,567 MW⁵ over the period of 2011-2015 and \$10,000 million investments. The role of public and private sectors in generation expansion are clearly identified (Table 1).

² Bangladesh National Energy Policy 2008, Power Cell, Power Division, MoPEMR, March 2012.

³ Government Policy Scenario, Power System Master Plan (2010)

⁴ Renewable Energy Policy of Bangladesh, Power Division, Ministry of Power, Energy and Mineral Resource, December 2008.

⁵ As some rental power plant contracts come to an end, the actual capacity addition is planned to be 12,567 MW, to achieve a net capacity increase of 10,186 MW (from 5271 MW in 2010 to 15,457 MW in 2015). By May 2012, 2249 MW of this capacity has already been commissioned, according to BPDB.

Table 1: Generation investments required during 2011-2015

Year	Generation Capacity Additions (MW)					Generation investments each year US\$ million
	Public	Private	Import	Total added each year	Cumulative addition	
2011*	800	963		1,763	1,763	1,462
2012	632	1,354		1,986	3,749	1,647
2013	1,467	1,372	500	3,339	7,088	2,354
2014	1,660	1,637		3,297	10,385	2,734
2015	1,410	772		2,182	12,567	1,809
Total	5,969	6,098	500	12,567		10,006

Source: BPDB Annual Report 2011, and generation investments estimated on the basis of the sixth five year plan.

* actual

8. Government of Bangladesh has taken initiatives to resolve widening demand – supply gap for power in the recent past. Over the 2007-2011 period generation capacity was expanded by 2900 MW, of which 1850 MW capacity was added by the private sector. Total investments in generation were about \$1200 million while the same in transmission was \$600 million during this period. ADB is financing the new Sirajgang 450 MW dual fuel (gas/diesel) power plant and construction which will commence soon. Eight other power plants will be completed by the public sector in year 2013 using various sources of finance. For the projects to be commissioned beyond 2013, BPDB is presently considering various financing sources.

9. Transmission developments are also planned by PGCB to ensure the generated power is delivered to load centers, from where the distribution companies will take-over and deliver to household, industrial and commercial customers. Table 2 provides the planned transmission requirements and investments over 2011-2015. According to the investment plan and already committed funds about \$1200 million funding gap remains in the transmission segment.

Table 2: On-going and planned transmission investments 2011-2015

Year of completion	Transmission Investment Requirement US\$ million	Committed Source of Finance and amount (US\$ million)								Funding shortfall (US\$ million)
		ADB/JICA	ADB	JICA	WB	kfW	EDCF	GOB	PGCB	
2011	100.9		27.7		36.4			28.9	7.9	-
2012	522.7	57.5	65.9	15.6		17.5	80.3	231.6	54.5	-
2013	279.3		88					35	13	144.5
2014	341.2									341.2
2015	715.1									715.1
Total	1,959.2	57.5	181.1	15.6	36.4	17.5	80.3	295.1	75.0	1,200.7

JICA = Japan International Cooperation Agency; WB = The World Bank; kfW = German Development Agency; EDCF = Economic Development Cooperation Fund; GOB = Government of Bangladesh PGCB = Power Grid Company of Bangladesh, Ltd.

Source: Annual Report PGCB 2010-2011

10. The above described generation and transmission investment should be complemented with distribution investments to ensure the network expansion and access increase. In addition to serving unserved areas, distribution improvements are required to meet the growing demands of presently served customers. Each distribution

entity has its own plan to serve the additional customers and new customers, according to their plans. Information on distribution expansion is summarized in Table 3.

Table 3: Household electrification targets

Distribution Service Area	Total Customers		Household customers		
	2010	2015	2010	2015	Increase over 2011-2015
BPDB	2,067,338	3,207,330	1,621,596	2,515,793	894,197
DPDC	737,997	1,144,951	632,463	981,223	348,759
DESCO	446,000	691,938	392,198	608,469	216,270
WZPDC	577,116	895,355	454,509	705,139	250,630
REB/PS	8,200,000	12,721,726	7,790,000	12,085,640	4,295,640
Total	12,028,451	18,661,300	10,890,767	16,896,263	6,005,496
Households in Bangladesh			22,951,613	24,847,446	1,895,833
Electrification ratio			47%	68%	

Source: Annual reports of BPDB and ADB estimates

11. The government has actively sought support from the private sector and from lending agencies, to meet the funding requirements for generation, transmission and distribution. The estimated funding gap during 2012-2015 is summarized in Table 4. About \$12000 million investment gap need to be filled, if the power sector to achieve its goal of 68% electrification by 2015.

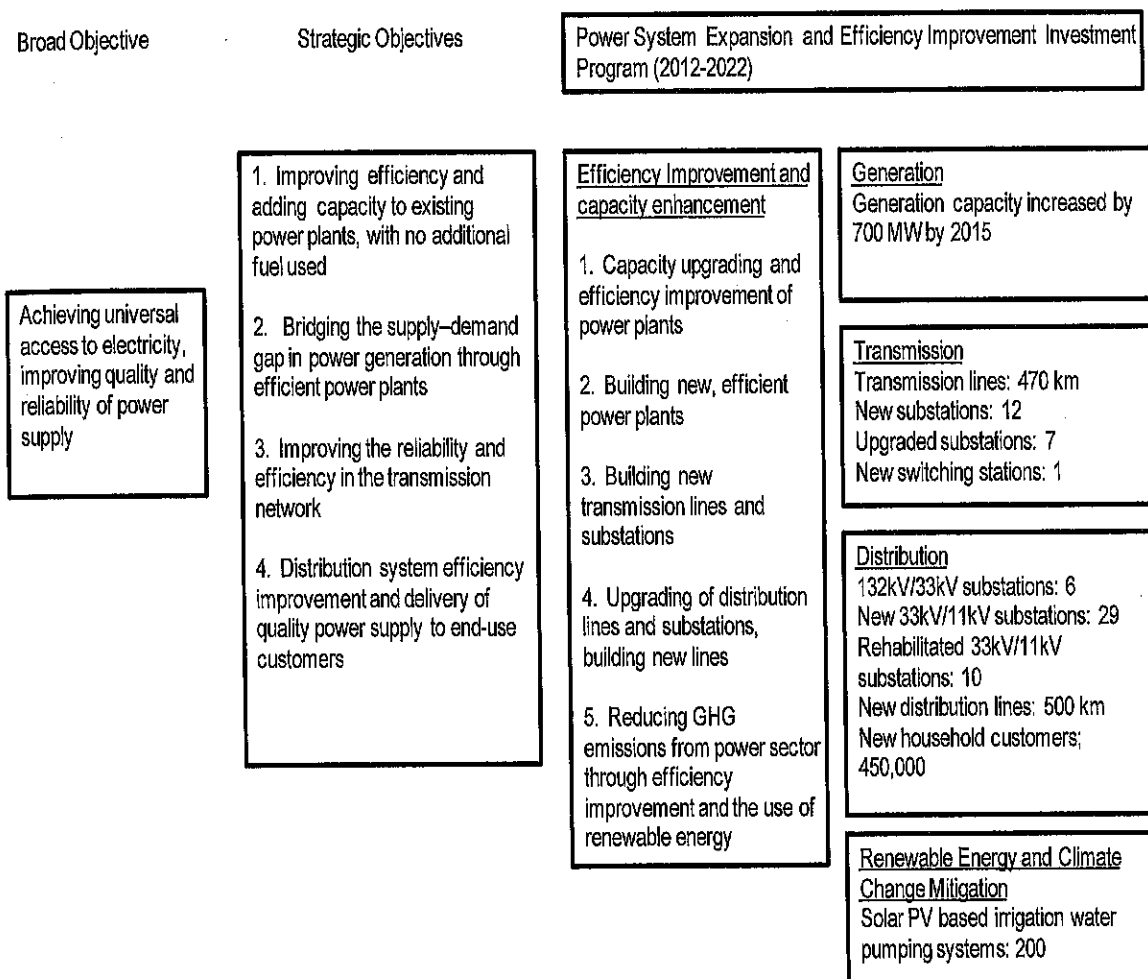
Table 4: Funding gap for power sector investments

Year of commissioning	Funding Gap in US\$ million						
	Generation		Transmission	Distribution	Total		Grand Total
	Public	Private	Public	Public	Public	Private	
2012	524	1,123	-	601	1,125	1,123	2,247
2013	1,216	1,138	144	601	1,961	1,138	3,099
2014	1,376	1,357	341	601	2,318	1,357	3,676
2015	1,169	640	715	601	2,485	640	3,125
Total	4,286	4,258	1,201	2,402	7,889	4,258	12,147

Source: BPDB, PGCB and ADB estimates

12. The proposed Power System Expansion and Efficiency improvement program will finance selected components of the above described generation, transmission and distribution expansion plan. It will: (i) add new generation capacity while achieving higher efficiency in power generation by converting open cycle to combined cycle power plants, (ii) build new transmission facilities to improve the power delivery from power plants to load centers efficiently and at a higher reliability, (iii) improve distribution facilities to reduce both technical and commercial losses, (iv) undertake pilot solar powered irrigation by installation of 200 solar pumps and (v) build capacity to improve the capability of sector institutions in power system planning, investment planning, financial management and governance and solar powered irrigation. Figure 1 summarizes the proposed investment program.

Figure 1: Summary Sector Road Map for Power System Expansion and Efficiency Improvement Program



B. Strategic Context

13. The economy of Bangladesh grew at an average rate of 5.8% from FY 2008 to FY 2011⁶. The Bangladeshi economy, apparently, has come back from the temporary setback brought about by political uncertainty in the country and the global financial crisis, and is on a growth path. Bangladesh expects to achieve a GDP growth rate of 7% during the current year 2011-2012, subject to favorable weather conditions, and resolution of gas and electricity shortages. The Government policy statement in 'Vision 2021' forecasts annual GDP growth rate to increase up to 8% by 2014 and 10% by 2020. The average GDP growth for the sixth five year plan period is forecast to be 7.3%. The National Energy Policy indicates that an electricity demand will grow at 1.5 times the GDP growth. Energy Sector infrastructure investment should commensurate with the growing power demands to achieve predicted economic growth targets. The above

⁶ Bank of Bangladesh, Annual Report 2011. The financial year FY is from 1st July to 30th June. FY 2011 means the financial year ending on 30th June 2011.

described investment plan is well aligned with the energy sector infrastructure development needs to spur economic growth in Bangladesh.

14. ADB Energy Policy 2009 emphasizes access to energy for all, energy efficiency and renewable energy development, energy sector reforms, capacity building, and governance. Aligning with the policy priorities of the Government of Bangladesh, ADB's country partnership strategy (CPS) for 2011-2015 focuses on the key sector outcomes of increased efficiency and access to power supply. Sector priorities identified in CSP include : (a) efficiency improvement in thermal power plants, (b) construction of key in-country gas and power transmission links, and (c) establishment of solar and wind power pilot projects. ADB's Energy Sector Evaluation for Bangladesh⁷ has recommended for ADB to (i) promote supply-side and demand-side energy efficiency improvement, (ii) consider financing public sector base-load power generation plants using more efficient technologies, and (iii) increase emphasis on promoting regional trading in electricity. The Power System Expansion and Efficiency Improvement Program is well aligned with the national targets of the government, energy policy of ADB and CPS priorities. It also implements IED recommendations.

C. Policy Framework

15. **National Energy Policy of 2008.** The energy policy establishes the key guidelines for sector targets, investment, and management: (i) provide adequate and secure energy resources for all (ii) support socio-economic development, (iii) reduce poverty and ensure social equity, (iv) provide sustainable energy mix, (v) promote rational use of energy, (vi) improve sector management and performance, (vii) increase private sector investment, (viii) promote regional energy markets. In particular, the policy statements emphasize the Government's desire to improve sector management and performance, and increase private sector investment.

16. **Vision 2021 and the 6th five-year plan.** The Governments near to medium-term broad strategy is described in the 'Vision 2021' statement and further elaborated in the sixth five year plan⁸, for the energy sector, these are as follows:

- (i) Generation of electricity to be increased to 15,457 MW by year 2015 such that the target of 20,000 MW electricity generated by year 2021 is attained.
- (ii) Electricity coverage to be increased to 68% (by 2015)
- (iii) Increase energy efficiency by 10%
- (iv) Improve railways and waterways as energy efficient multi-modal transport system to reduce carbon emission.
- (v) Production of natural gas to reach about 4500 mmcf by December 2015
- (vi) Optimizing domestic production of primary energy resources including renewable energies.
- (vii) Expanding access of the poor to primary and secondary energy sources through affordable pricing and targeted distribution.

⁷ Evaluation Study, Sector Assistance Program Evaluation: 26194, October 2009 Bangladesh Energy Sector, Independent Evaluation Department

⁸ Sixth Five Year Plan, FY2011-FY2015, Accelerating Growth and Reducing Poverty, Part1, Strategic Directions and Policy Framework, Planning Commission, Ministry of Planning, Government of the People's Republic of Bangladesh

17. Bangladesh Energy Regulatory Commission (BERC) Act. (2003) provides the framework for the regulation of the electricity industry, including the requirements to obtain a license for electricity industry players, and bringing the entities already engaged in the industry into the licensing regime. The Act provides the powers to the Commission to determine tariffs for generation, bulk and retail sales, based on a methodology determined by the Commission. The Act also provides for tariff submissions by licensees and for public hearings to be conducted by the Commission. The Commission has been given wide powers with regard to tariff policies, and has been assigned with responsibility of ensuring efficiency and social and poverty consideration when determining the tariff policy.

18. As described above, the policy and regulatory framework in Bangladesh provides reasonably stable investment environment for proposed Power System Expansion and Energy Efficiency Improvement Program. The current policies and strategies in general, sufficiently serves to add generation capacity, serve more customers, expand the transmission network, expand the distribution network, and the improvement of energy efficiency.

D. Investment Program

19. The proposed multitranche financing facility (MFF) will undertake \$1.6 billion of investments in generation, transmission, and distribution to ensure meeting the critically needed investments in the power sector. Tranche 1 of the MFF will provide financing mainly on power generation, while support will also be extended to three critical segments of the transmission network. Generation investments will not only provide capacity expansion but will also improve energy efficiency of the identified power plants by about 50%. Tranche 2 will support generation, transmission and distribution network improvements. These investments will ensure that the increased generation capacity will be fully utilized through adequate power evacuation facilities from production to load centers as well as through sufficient connections to end-users. Tranche 3 will focus on financing of power plant upgrading while at the same time ensuring at least the same level of energy efficiency improvements as in Tranche 1 projects.

Table 1.2: Power System Expansion and Efficiency Improvement Investment Program

Source	Amount (\$ million)	Share of Total (%)
Power System Expansion and Efficiency Improvement		
Asian Development Bank	700	44
Co-financing	678	42
Government	222	14
Total (Investment Program)	1600	100
Tranche 1		
Asian Development Bank	185	46
Co-financing	183	46
Government	32	8
Subtotal (Tranche 1)	400	100
Tranche 2		
Asian Development Bank	310	44
Co-financing	295	41
Government	105	15
Subtotal (Tranche 2)	710	100
Tranche 3		
Asian Development Bank	205	42
Co-financing	200	41

Government	85	17
Subtotal (Tranche 3)	490	100

E. Financing Plan

20. ADB will finance US \$700 million for the three tranches, while the European Investment Bank (EIB), Islamic Development Bank (IsDB) and L'Agence Française de Développement (AFD) will invest a total \$678 million to the whole Investment Program. Details are given in Table 1.3.

Table 3: Financing Plan of the Investment Program

Source	Investment Program Funding, \$ Million			
	Tranche 1, Year 2012	Tranche 2, Year 2013	Tranche 3, Year 2015	Total
ADB	185	310	205	700
IsDB	85	195	100	380
EIB	98	-	100	198
AFD		100	-	100
Government	32	105	85	222
Total	400	710	490	1600

ADB = Asian Development Bank, EIB = European Investment Bank, IsDB = Islamic Development Bank, AFD = L'Agence Française de Développement (French Agency for Development)

Source: Project preparatory technical assistance consultants

SCHEDULE 2

DESIGN AND MONITORING FRAMEWORK FOR THE INVESTMENT PROGRAM

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
Impact Increased energy sector contribution to low carbon growth in Bangladesh	Electrification rate increased from the 50% in 2012 to 68% by 2025 Overall system losses reduced from 15.2% in 2011 to 12% by 2025. Overall thermal generation efficiency improved from 31% in 2011 to 37% by 2025	BPDB annual reports BPDB annual reports BPDB annual reports	Assumptions Government's continuous strong emphasis on energy sector development Improved regulatory environment Risk Inadequate gas supplies for electricity generation
Outcome Increased access to clean and reliable supply of electricity in Bangladesh	Electricity supply increased from 26.6 TWh in 2011 to 40.8 TWh by 2020 Reduced CO2 emissions by 2.48 million tCO2 per year by 2020 against the baseline of 67.2 million tCO2 in 2011	Annual reports of BPDB Annual reports of BPDB	Assumptions Demand for electricity continues to increase at the rate of 7.5% per annum.
Outputs Improved efficiency in electricity generation, transmission and distribution Increased renewable energy use Enhanced capacity of power sector agencies and farmer organizations	Energy efficiency of selected power plants increase from 32% in 2012 to 50% by 2020 Transmission losses reduced from 3.3% in 2012 to 2.5% by 2020 Distribution losses reduced from 13.1% in 2012 to 11.0% by 2020 Up to 450,000 new power connections by 2020 Solar power generation for irrigation increased by up to 1800 MWh per annum by 2020 50 of power sector personnel (males/females) trained on investment planning, operations planning, energy auditing and monitoring by 2016	Annual reports of BPDB, NWPGC Annual reports of PGCB Annual reports of DESCO and DPDC Annual reports of BPDB Annual reports of REB Project review reports of EAs	Assumptions Power companies are provided with adequate independence to make management decisions Adequate cost recovery allowed through electricity tariffs Farmer associations maintain their interest and support for solar irrigation

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
Project management system in place	<p>Members of 20 farmer organizations (males/females) are trained on operation and maintenance of solar irrigation pumps by 2016.</p> <p>20 of power sector personnel (males/females) trained on financial performance, auditing and governance by 2016.</p> <p>Functioning four project management units by October 2012</p>	<p>Project review reports of EAs</p> <p>Project review reports of EAs</p> <p>Project review reports of EAs</p>	
Activities with Milestones		Inputs	
<p>1.1 Energy Efficiency Improvement in Generation, Transmission and Distribution</p> <p>1.1 Conversion and or construction selected power plants to increase the capacity up to 275 MW by December 2020 (ADB financed)</p> <p>1.2 Conversion and or construction selected power plants to increase the capacity up to 425 MW by December 2020 (cofinanced)</p> <p>1.3 Construction of up to 200 km of transmission lines and associate facilities by 2018 (ADB financed)</p> <p>1.4 Construction of up to 270 km of transmission lines and associate facilities by 2018 (cofinanced)</p> <p>1.5 Installation of up to 250 km distribution lines and associated facilities by 2018 (ADB financed)</p> <p>1.6 Installation of up to 250 km distribution lines and associated facilities by 2018 (cofinanced)</p> <p>1.7 Construct or upgrade up to 39 33/11kV substations by 2018 (ADB financed)</p> <p>2. Enhanced Renewable Energy Use</p> <p>2.1 Installation of up to 200 solar irrigation units by 2018.</p> <p>3. Enhanced Capacity of Power Sector Agencies and Farmer Organizations</p> <p>3.1. Completion of detail capacity needs assessment by December 2013.</p> <p>3.2. Development of training modules and identification of training institutes by June 2014</p> <p>3.3. Completion of all training programs by December 2016</p> <p>4. Project Management Unit</p> <p>4.1. Advertisement of bids for Tranche 1 by December 2012</p> <p>4.3. Consultants for implementation support and capacity building recruited by June 2013</p> <p>4.4. Submission of PFR 2 by April 2013</p>		<p>ADB (OCR) = \$ 700 million</p> <p>Co-financing = \$ 678 million</p> <p>Government of Bangladesh = \$ 222 million</p>	

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
4.5. Advertisement of bids for Tranche 2 by October 2013 4.6. Submission of PFR 3 by June 2015 4.7. Advertisement of Bids by October 2015			

ADB = Asian Development Bank; OCR = Ordinary Capital Resources; BPDB = Bangladesh Power Development Board;
PGCB = Power Grid Company of Bangladesh Limited; GOB = Government of Bangladesh; REB = Rural Electrification Board;
DPDC = Dhaka Power Distribution Company Ltd; DESCO = Dhaka Electricity Supply Company Ltd; EA = Executing Agency;
PFR = Periodic Financing Request

SCHEDULE 3

IMPLEMENTATION FRAMEWORK

A. Implementation Arrangements

21. The Ministry of Power, Energy and Mineral Resources (MPEMR) is responsible for formulating and implementing power sector policies and national programs as well as facilitating and overseeing the investments in the power sector. The proposals for external assistance are reviewed and approved by both the MPEMR and Economic Relations Division (ERD) of the Ministry of Finance. ERD also undertakes periodic reviews of all the externally funded projects.

22. Unless modified or amended in related loan or project agreements, the Investment Program will be implemented as below:

23. Executing Agencies. The Investment Program will be implemented by the following Executing Agencies (EAs):

(i) Tranche 1

- a. Bangladesh Power Development Board (BPDB) will be the EA for Sylhet, Baghabari and Shahjibazar power plant conversion projects
- b. North-West Power Generation Company Limited (NWPGC) will be the EA for Khulna power conversion project
- c. Power Grid Company of Bangladesh (PGCB) will be the EA for the MT, CRK and BN transmission projects
- d. Power Division of the Ministry of Power, Energy and Mineral Resources (MPEMR) will be the EA for the capacity building component.

(ii) Tranche 2

- a. Power Grid Company of Bangladesh (PGCB) will be the EA for transmission projects
- b. Dhaka Electric Supply Company Limited (DESCO) will be the EA for distribution projects under its geographic service areas
- c. Dhaka Power Distribution Company Limited (DPDC) will be the EA for distribution projects under its geographic service areas
- d. Rural Electrification Board will be the EA for pilot solar irrigation program

(iii) Tranche 3

- a. Bangladesh Power Development Board (BPDB), Rural Power Company Limited (RPC) and North -West Power Generation Company and Power Generation Company of Bangladesh will be potential the EAs for energy efficiency improvement projects.

24. Within each EA, a project management unit (PMU) headed by a PMU manager will be established. The PMU manager will report all subproject related matters to the head of each EA. Each PMU will comprise technical, financial, and procurement staff while safeguard specialist(s) will be hired as and when required. The EAs will appraise subprojects under their respective component and be responsible implementing the subprojects. Responsibilities of the PMUs will include preparation of technical reports,

preliminary design reports, bidding documents to ensure compliance with Bangladesh ADB and other financiers requirements and progress review reports. Consulting services will be provided to PMU, to assist supervision technical due diligence process, safeguard due diligence, monitoring and reporting.

25. Power Division, MOPEMR will establish a project management unit to implement the project preparatory and training and capacity building activities. Project preparatory consultants will be selected using ADB's *Guidelines on the Use of Consultants* (2010, as amended from time to time). Power division PMU is responsible for hiring a consultant to design the training programs and selecting the power sector personnel for the training programs.

26. An Investment Program Coordinating Committee, chaired by the Secretary, Power Division, MPEMR will be established to coordinate the overall implementation of the Investment Program. The Chairman/Managing Directors of the EAs, and the Additional Secretary of the Power Division of MPEMR will serve as the members of the Coordinating Committee. MPEMR will conduct review and due diligence for new project proposals submitted by the companies prior to approval, and monitor the performance and improvement of service delivery of the EAs.

27. The EAs will provide, as necessary, respective counterpart staff, land and office facilities, for related subprojects in accordance project designs in a timely manner. Figure 1 below shows implementation structure for the Tranche 1 of the investment program.

B. Procurement, Consulting Services and Disbursement

28. The EAs shall ensure that all procurement of goods and services financed by the MFF will be carried out in accordance with ADB's *Procurement Guidelines* (2012, as amended from time to time), and that the individual loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook*.

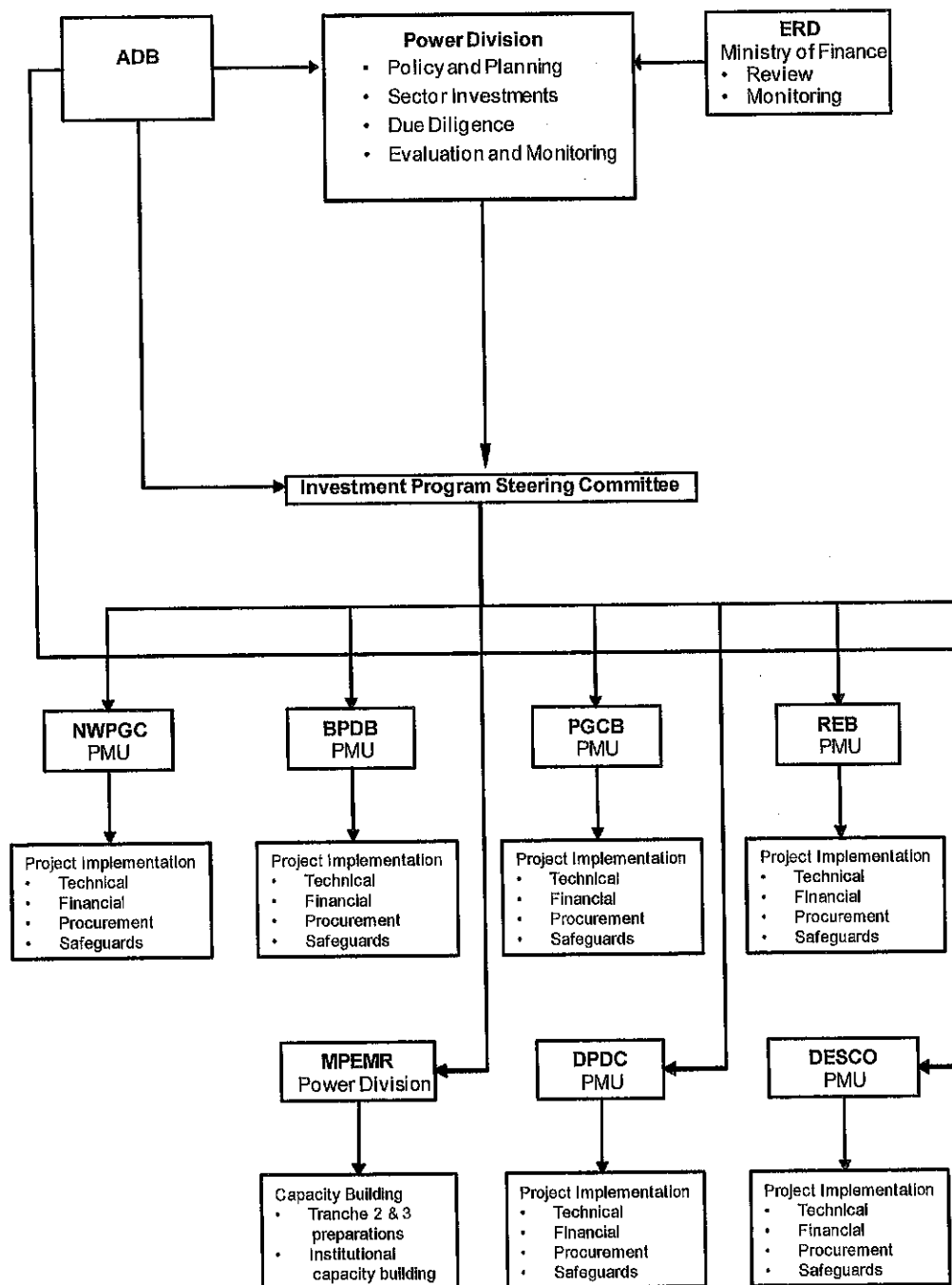
C. Performance Monitoring and Reporting

29. The EAs shall ensure that within 3 months of the Effective Date of the related loan agreement, a Project Performance Monitoring System (PPMS) within each PMU shall have been established in a form and with contents acceptable to ADB in accordance with the Investment Program and Subproject performance indicators. The EAs shall undertake periodic subproject performance review under each individual tranche of the Loan, and also for the Investment Program in accordance with the PPMS to evaluate the scope, implementation arrangements, progress and achievements of objectives of the related Subproject and overall Investment Program.

30. The EAs will prepare biannual progress reports and submit these to ADB within 30 days of the end of each period. These reports will provide (i) a narrative description of progress made during the period, (ii) changes, if any, in the implementation schedule, (iii) problems or difficulties encountered, and (iv) work to be carried out in the next period. The progress reports will also include a summary financial account for the components, including subprojects, consisting of expenditure during the period, total expenditure to date, and reports on environmental monitoring as required by the EMP of

each Subproject, resettlement monitoring and benefit monitoring undertaken pursuant to the preceding paragraph of this Schedule.

Figure 1: Implementation Structure



ADB = Asian Development Bank, MPEMR = Ministry of Power, Energy and Mineral Resources, ERD = Economic Relations Division, NWPGC = North-West Power Generation Company Limited, BPDB = Bangladesh Power Development Board, PGCB = Power Grid Company of Bangladesh, REB = Rural Electrification Board, DESCO = Dhaka Electric Supply Company Limited, DPDC = Dhaka Power Distribution Company Limited, PMU = project management unit

D. Review

31. Power Division will ensure submission of MFF completion report within 6 months of physical completion of the investment program. Each EA will ensure submission of subproject completion report as agreed in the project administration manual for each tranche. These reports shall cover a detailed evaluation of Subprojects and the MFF respectively, covering the design, costs, contractors' and consultants' performance, social, environmental and economic impacts, economic and financial rates of return, and other details of each Subproject and the MFF as may be requested by ADB.

32. ADB, GoB cofinancing agencies and the EAs shall meet regularly as required to discuss the progress of the individual tranches and any changes to implementation arrangements or remedial measures required to be undertaken towards achieving the objectives of the Subprojects and the Investment Program.

33. A Mid-term review of each Subproject will be undertaken by ADB, the Government and the EAs. The mid-term review will include review of issues and any problems or weaknesses in implementation arrangements, and agree on any changes needed to achieve the objectives of the Investment Program.

34. A similar mid-term review of the Investment Program by ADB, the Government, cofinanciers and the EAs will be undertaken in the second year from the date of the approval of the MFF by ADB.

E. Accounting and Audit

35. The Government and the EAs shall ensure that proper accounts and records are maintained and audited in a timely manner to adequately identify the use of loan proceeds in such manner and detail as may be specified under each related legal agreement.

SCHEDULE 4

SELECTION CRITERIA AND APPROVAL PROCESS

A. Eligibility Criteria

36. Following criteria should be used in selecting and approving the subprojects for financing under the investment program:

- (i) Subprojects will be for power sector generation, transmission and distribution capacity expansion, efficiency improvement, capacity development and renewable energy development aiming at:
 - improving overall power generation efficiencies;
 - reducing transmission and distribution system losses;
 - improving reliability, quality and daily availability of power supply;
 - rehabilitating, augmenting and expanding power generation, transmission and distribution systems;
 - providing compliance with regulatory requirements and any associated facilities related to the operations of the power generation, transmission and distribution systems;
 - increasing renewable energy capacities for both grid, mini or isolated-grids and off-grid systems;
 - reducing the local and global air polluting emissions from power sector activities; and
 - enhancing the capacity of the power sector agencies for better sector management, financial performances and governance
- (ii) Subprojects will be those projects to be undertaken by government-controlled electric utilities and contribute to the overall vision of the government to provide increased access to affordable and reliable electricity the members of the society;
- (iii) Power generation expansion activities should ensure significant and quantifiable energy efficiency improvements, carbon emission reduction, local air pollution reduction and prevent additional use of natural gas, consideration will be given for new generation plants if new gas reserves are added;
- (iv) Subproject designs will be consistent with overall least-cost power generation, transmission expansion plans. Distribution improvements should be well aligned with least cost expansion plans of generation and transmission. All the subproject should reflect "best practice" design, construction, and operations and maintenance features;
- (v) Subprojects will display performance-based design, consistent with international benchmarks for system efficiency and operational risk.
- (vi) Subprojects will be eligible inclusion in the investment program in accordance with the approved feasibility assessment, which includes engineering, financial, economic, environmental and social justifications;

- (vii) Safety measures should be incorporated in the Subproject designs as required under the relevant policies, statutory requirements and regulations of Bangladesh as amended;
- (viii) Design of Subprojects will be finalized taking account of input from public consultations carried out in the social and environmental assessments as appropriate;
- (ix) All necessary government approvals on environment and development project performance (DPP) would have been obtained for the Subprojects at the time the PFR is submitted to ADB.

B. Approval Process for Subprojects

37. The government's approval process of subprojects prepared under tranche 1 has been completed at the date of this Agreement.

38. Projects intended for financing under the Facility in the succeeding tranches, the approval process will be as follows:

- (i) Based on Section A of this Schedule, Government of Bangladesh (GOB) will prepare the detailed Project feasibility assessments similar to the format and content of the feasibility assessment prepared during tranche 1;
- (ii) After the feasibility assessment of the Project, GOB will complete screening checklists for initial poverty and social assessment (IPSA), involuntary resettlement, small ethnic communities, and the rapid environmental assessment checklists which will be submitted to ADB for review and approval;
- (iii) Following the completion of preliminary project design, RPs, IEE or EIA (with EMP and budget requirements), IPDP (if required) will be prepared and submitted to ADB for review;
- (iv) GOB will disclose the RP for each project to the affected peoples and will revise, as appropriate, based on comments from both the affected peoples and ADB;
- (v) GOB will disclose the IEE or the EIA for each project to the public. If the project is category A based on ADB's SPS 2009, the disclosure will be made 120 days prior to approval of the Periodic Financing Request (PFR);
- (vi) ADB will review the summary feasibility studies together with the required supporting documents. In case ADB has evaluated that the project did not meet the eligibility criteria and procedures, ADB will advise the GOB on remedial measures for compliance;
- (vii) If there are revisions required to the RP, IEE or EIA (with EMP and budget), IPDP (if needed) as a result of the detailed Project design, the revised safeguard documents will be re-submitted to ADB for review and approval; and,

- (viii) GOB will prepare a review report on their compliance with the loan covenants of the previous tranche(s). ADB will approve the project proposal based on satisfactory compliance of all safeguard policies and related loan covenants.

SCHEDULE 5

SOCIAL DIMENSIONS AND SAFEGUARD REQUIREMENTS

41. The Government will ensure that all the requirements prescribed in this Schedule, and the following social and safeguard frameworks and plans that have been prepared with respect to the Facility and the first tranche and of which ADB has been provided full copies, and which are deemed incorporated herein by reference, are complied with during the processing and implementation of the projects under the Facility.

For the Facility:

(i) environmental assessment and review framework, dated 18 September 2012,

(ii) resettlement framework dated 18 September 2012,

For the first Tranche:

(iv) Initial environmental examination together with environmental management plan and resettlement plan, dated 18 September 2012

42. The frameworks cover the Facility-specific information and requirements in accordance with ADB's safeguard policies: (i) the general anticipated impacts of the components or projects likely to be financed under the MFF on the environment, involuntary resettlement, and small ethnic communities; (ii) the safeguard criteria that are to be used in selecting projects; (iii) the requirements and procedure that will be followed for screening and categorization, impact assessments, development of management plans, public consultation and information disclosure, and monitoring and reporting; and (iv) the institutional arrangements (including budget and capacity requirements) and the client's and ADB's responsibilities and authorities for the preparation, review and clearance of safeguard documents.

43. Prior to the preparation of each PFR, the applicability and relevance of each safeguard framework for environment, and involuntary resettlement will be reviewed by GoB and updated to ensure relevance and consistency with applicable national policy and legal frameworks and ADB's safeguard policies, as amended from time to time.

44. In all cases, for each new PFR preparation, GoB will review ongoing projects to verify the status of compliance with the social and safeguard plans and frameworks, and submit the review reports to ADB, together with other required safeguard documents relevant to the components included in the tranche being processed. In any case, if major noncompliance is discovered in the course of the review of ongoing projects, a corrective action plan will be prepared and submitted to ADB.

A. Environmental Safeguards

45. Only projects that meet the eligibility criteria specified in Schedule 4 of this FFA, and consistent with the applicable requirements of GOB and the EARF will be financed by ADB. The GOB will monitor projects implementation throughout completion.

46. GOB will ensure that the IEE or EIA prepared for the projects follow ADB's SPS 2009, the EARF, the applicable national environmental laws and requirements.

47. GOB will guarantee that the recommendations of the IEE or EIA and the EMP approved by ADB are complied with during the design, construction and operation of the projects.

48. GOB will ensure that no project to be financed by the Facility will be sited within national parks and wildlife sanctuaries, or will affect monuments of cultural and historical importance, unless prior clearance is secured from relevant government agencies; and will have an EMP with adequate budget for implementation of each project.

49. The IEE will be disclosed to the public and the EIA of projects classified as category A based on ADB's SPS 2009 will be subject to the 120-day public disclosure prior to approval of the PFR. Environmental monitoring reports will be submitted to ADB twice a year and will be similarly disclosed to the public as required by SPS 2009 and Public Communications Policy 2011.

50. GOB will ensure that no proceeds from any tranche under the Facility are used to finance any activity included in the list of prohibited investment activities provided in the Appendix 5 of ADB's SPS 2009.

B. Implementation of Civil Works Contracts

51. GOB will ensure that no civil works contract financed under the Facility will commence until the provisions, if any, in the IEE or EIA have been complied with;

52. In case there is a need to change the project location or power transmission alignment during the detailed design resulting to environmental impacts, prior ADB approval will be required as set forth in Schedule 4 of this FFA before any civil works is conducted.

C. Compliance to Core Labour Standards

53. GOB will ensure that projects financed under the Facility will comply with relevant internationally-recognized core labour standards⁹ and that procurement of goods and services, contractors, subcontractors and consultants will comply with national labor laws such as minimum wages, safe working conditions that is gender-sensitive, minimum age requirement, social security contributions, etc. Contractors and other service providers will not engage in child labor¹⁰ or forced labor,¹¹ provide procedures or mechanism that allow for equal opportunity and fair treatment of workers, etc.

⁹ Core labor standards, as defined in the ADB/ILO Core Labor Standards Handbook October 2006, include: (i) abolition of child labor, (ii) elimination of discrimination in employment and occupation, (iii) elimination of all forms of forced or compulsory labor, and the (iv) freedom of association and the effective recognition of the right to collective bargaining. <http://www.adb.org/documents/handbooks/core-labor-standards/cis-handbook.pdf>. (Accessed 15 January 2012)

¹⁰ Child labor refers to employing children with age below the statutory minimum age required for employment.

¹¹ Forced labor refers to all work or services not done voluntarily and obtained from workers under threat of force or penalty.

SCHEDULE 6

UNDERTAKINGS

The Government of Bangladesh undertakes that it will:

54. Remain committed to the implementation of the Power Sector reforms ensuring competition, good governance and financial sustainability of power sector utilities, strengthening regulatory independence, promoting sustainable energy sector development as well as monitoring and enforcing implementation of the key legislation and policies in the power sector.
55. Facilitate independent functioning of power sector companies incorporated under Companies Act 1994.
56. Limit the BPDB's role to a holding company, gradually limiting its activities to planning, supervision and monitoring of the power sector activities and phase out BPDB's direct control on power generation and distribution, thereby leaving sector companies under it to operate as independent and financially sustainable companies.
57. Ensure preparation of tariff reform master plan by end of December 2014, integrating both gas and power sectors to ensure full cost recovery of power sector operations and its full implementation to ensure that EAs receiving financing under the investment program operate on full cost recovery basis with matching electricity tariff revenues, based on the tariff revisions approved by the Bangladesh Energy Regulatory Commission.
58. Ensure gradual decommissioning of small independent power producers and rentals for efficient use of natural gas and to reduce excessive costs of power generation.
59. Ensure that the entire proceeds of the loans from the investment program will be made available to the relevant EAs under the appropriate on-lending arrangement; and ensure that the EAs utilize the proceeds of the loans for the purposes agreed to with ADB in the relevant legal agreement;
60. Ensure that all projects financed under the investment program are developed, implemented and maintained in accordance with the safeguards requirements of ADB's Safeguard Policy Statement, 2009 and as set out in Schedule 5 to this FFA and its referenced safeguards documents;
61. Acknowledge that ADB, consistent with its commitment to good governance, accountability, and transparency, reserves the right to investigate directly, or through its agents, any possible corrupt, fraudulent, collusive, or coercive practices relating to the Power System Expansion and Efficiency Improvement. To support these efforts, Bangladesh will ensure that the EAs include in the bidding documents and in all contracts financed by ADB in connection with the investment program: (a) provisions specifying the right of ADB to audit and examine the records and accounts of the EAs and all contractors, suppliers, and other service providers as they relate to the investment program; (b) periodic inspections of the contractors' activities related to fund withdrawals and settlements carried out by the PMU in each EA; and (c) the auditors

engaged by the PMUs have the right to conduct random or spot audits of contract implementation activities under the subprojects.