



Design and Monitoring Framework

Project Number: 36107-02
June 2007

Loan 2332/33/34-BAN: Sustainable Power Sector Development Project

A design and monitoring framework is an active document, progressively updated and revised as necessary, particularly following any changes in project design and implementation. In accordance with ADB's public communications policy (2005), it is disclosed before appraisal of the project or program. This draft framework may change during processing of the project or program, and the revised version will be disclosed as an appendix to the report and recommendation of the President.

Asian Development Bank

DESIGN AND MONITORING FRAMEWORK

Table A1.1: Sector Development Program

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
Impact Increased capacity and reliable power supply for sustained economic growth	<ul style="list-style-type: none"> Access to electricity from present 38% to 60% of national population by 2015 No load shedding by 2015 Gross domestic product increases maintained on a sustainable basis 	<ul style="list-style-type: none"> Government economic statistics and reports National statistics on power supply Program and project completion reports 	Assumptions <ul style="list-style-type: none"> Political and socioeconomic conditions remain stable Stable economic growth in the region Stable supply of imported energy resources at appropriate prices
Outcome Reforms: Improved power sector sustainability through financial and organizational restructuring Clean Energy Power Supply Capacity Expansion and Efficiency Improvements: Expanded peak generation capacity and reduction of load shedding Improved Power Transmission Capacity and Reduction of Transmission System Losses	<ul style="list-style-type: none"> Issuance of a detailed medium-term road map for power sector reforms Establishment by 2007 of a long-term planning mechanism for power sector operations based on a detailed sector reform road map, a long-term power system master plan, and a sector-wide capacity building program Fully staffed BERC and licensing and tariff regulations in place by 2007 Financial self-reliance of power sector entities by 2010 BPDB and DESA converted to corporatized entities by 2007 Initiation of fund raising from local capital market by 2006 for power sector development, and 50% of new generation capacity from private sector by 2008 Additional peak load generating capacity of 300 MW by 2009 Load shedding reduced from 770 MW in 2005 to less than 470 MW in 2009 Addition of power transmission capacity by 900 MVA by 2009 Transmission system losses reduced from 3.4% in 2005 to 3.2% in 2009. 	<ul style="list-style-type: none"> Quarterly program progress reports Reports from power sector entities and regulatory commission National statistics on power supply Power sector entities' annual reports Program completion report Quarterly project progress reports National statistics on power supply BPDB's annual report Project completion report Quarterly project progress reports National statistics on power supply PGCB's annual report Project completion report 	Assumptions <ul style="list-style-type: none"> Continued government commitment for evolution of an enabling policy and regulatory framework to facilitate commercialization of utility company operations Level playing field through BERC for corporatized sector entities, and independent power producers Risks <ul style="list-style-type: none"> Tariffs kept below cost-recovery level Delays in approval of BERC organogram, recruitment of staff, and appointment of the remaining commissioners. Assumptions <ul style="list-style-type: none"> Stable economic growth Timely establishment of NWPGC Risks <ul style="list-style-type: none"> Mismatch between generation and network upgrades Delays in project implementation Assumption <ul style="list-style-type: none"> Stable economic growth Risk <ul style="list-style-type: none"> Delays in project implementation

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>Dhaka area distribution system efficiency improvements</p> <p>Institutional Capacity Development:</p>	<ul style="list-style-type: none"> Reduction of distribution losses of DESCO from 16.7% in 2005 to 12.0% by 2009 Reduction of distribution losses of DESA from 30.0% in 2005 to 20.0% by 2009 Improved reliability and quality of power supply for 820,000 existing and 230,000 new consumers Enhanced competitiveness of power sector entities in corporate and financial management, information and communication technology, long-term planning, governance, customer relations, and research and development 	<ul style="list-style-type: none"> Quarterly project progress reports National statistics on power supply Distribution entities' annual reports Project completion report Quarterly project progress reports Project completion report 	<p>Assumptions</p> <ul style="list-style-type: none"> Stable economic growth Transfer of DESA operations to DPDC <p>Risk</p> <ul style="list-style-type: none"> Delays in project implementation <p>Assumption</p> <ul style="list-style-type: none"> Continued support of Government for capacity development
<p>Outputs</p> <p>Reforms:</p> <p>(i) National action plan for power sector reform</p> <p>(ii) Fully functional legal and regulatory framework</p> <p>(iii) Financial restructuring of power sector entities</p> <p>(iv) Continued restructuring of power sector entities</p> <p>(v) Increased public-private partnership</p>	<ul style="list-style-type: none"> 3-year road map for power sector reforms and implementation of a regular monitoring system by December 2006 Power system master plan for generation and transmission for 2006–2025 by December 2006 Preparation of technical project proposal for a sector-wide capacity development program by December 2006 Government approval of BERC organogram by December 2006 Gazette notification of licensing regulations by December 2006 and gazette notification of tariff regulations by December 2007 Appointment of BERC's remaining commissioner by December 2007 Preparation of a draft financial restructuring plan for BPDB and DESA by December 2006, and Government approval of the financial restructuring plan by December 2007 Settlement of unfunded pension liabilities for the newly corporatized entities by June 2008 Reduction of Government's and its autonomous and semiautonomous agencies' outstanding electricity dues to less than Tk1.0 billion and Tk2.5 billion, respectively, by December 2007 Constitution of boards of directors and appointment of managements for the newly corporatized entities by December 2006 Partial off-loading of PGCB and DESCO shares by December 2007 	<ul style="list-style-type: none"> Quarterly program progress reports Review mission reports Quarterly program progress reports Review mission reports Quarterly program progress reports Review mission reports Quarterly program progress reports Review mission reports 	<p>Assumptions</p> <ul style="list-style-type: none"> Continued commitment of Government for sector reforms Timely program implementation Counterpart funds made available. <p>Risk</p> <ul style="list-style-type: none"> Unwillingness of power sector companies to reform

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
Power Supply Capacity Expansion and Efficiency Improvements Construction of clean natural gas-fired power plants Construction and augmentation of transmission systems Distribution system upgrade in DESA area Distribution system upgrade in DESCO area Institutional Capacity Development	<ul style="list-style-type: none"> • A 150-MW peaking power plant in Sirajganj and another 150-MW peaking power plant in Khulna by 2009 • A 50-km, 400-kV double-circuit transmission line from Meghaghat to Aminbazar and associated bay extensions by 2009 • A 10-km, 230-kV double-circuit transmission line from Aminbazar to Old Dhaka Airport and associated substations in Old Dhaka Airport and Dhaka University Areas by 2009 • A total of 158 km in three 132-kV single-circuit transmission lines and associated substations in western and northwestern parts of the country by 2009 • About 570 MVA of additional distribution capacity to connect about 120,000 new consumers (domestic, commercial, irrigation, industrial, and others) by 2009 • About 450 MVA of additional distribution capacity to connect about 110,000 new consumers (domestic, commercial, irrigation, industrial and others) by 2009 <p>See Table A1.2 for detailed performance targets.</p>	<ul style="list-style-type: none"> • Quarterly progress reports • Power sector entities' annual reports • Review mission reports • Field visits • Quarterly progress reports • Power sector entities' annual reports • Review mission reports • Field visits • Quarterly progress reports • Power sector entities' annual report • Review mission reports • Field visits • Quarterly progress reports • Power sector entities' annual reports • Review mission reports • Field visits • Quarterly progress reports • Reports from power sector entities and regulatory commission • National statistics on power supply • Power sector entities' annual reports • Review mission reports • Field visits 	<p>Assumptions</p> <ul style="list-style-type: none"> • Timely project implementation • Counterpart funds of project components made available. <p>Risks</p> <ul style="list-style-type: none"> • Approval for construction of project components is not obtained in a timely manner. • Increase in prices of raw materials exceeds contingency and inflation forecasts. <p>Assumptions</p> <ul style="list-style-type: none"> • Timely project implementation • Counterpart funds of project components made available. <p>Risk</p> <ul style="list-style-type: none"> • Approval for technical assistance project proposal is not obtained in a timely manner.

<p>Activities with Milestones</p> <p>Reforms</p> <ol style="list-style-type: none"> 1.1 3-year Road Map for Power Sector Reforms approved by September 2006 1.2 BERC organizational chart approved by the Government by October 2006 1.3 Gazette notification of the licensing regulations by September 2006 1.4 BERC's submission of draft electricity generation tariff regulations with tariff-setting mechanism to the Energy, and Mineral Resources Division of MPEMR by August 2006 1.5 Government approval of a financial restructuring plan of BPDB and DESA by December 2007 1.6 Budget allocation of Tk1.8 billion by June 2007 and another Tk1.8 billion by June 2008 to settle unfunded pension and gratuities for the newly corporatized sector entities 1.7 Initial off-loading of PGCB and DESCO shares in the stock market by December 2007 <p>Power Supply Capacity Expansion and Efficiency Improvements</p> <ol style="list-style-type: none"> 2.1 Field surveys for all project components completed by June 2006. 2.2 Completion of acquisition of land and resettlement by December 2007 2.3 Recruitment of consultants for preparation of bidding documents, bidding, construction supervision, and commissioning and testing for Sirajganj peaking power plant, Khulna peaking power plant, and 400 kV transmission line by September 2007 2.4 Design engineering, procurement and construction: starts July 2006, and construction completion by December 2009 <p>Institutional Capacity Development</p> <ol style="list-style-type: none"> 3.1 Submission of technical project proposal for a medium-term, sector-wide capacity building program by the Power Division of MPEMR to the Planning Commission by October 2006 3.2 Detailed needs assessment completed by October 2007. 3.3 Key training started from January 2008. 	<p>Inputs</p> <p>Program Loan:</p> <ul style="list-style-type: none"> • ADB: \$60.00 million • Government: \$123.00 million <p>Project Loan:</p> <ul style="list-style-type: none"> • Consultancy services for project management, design, implementation of safeguards, and construction supervision • ADB: \$405.0 million • Government: \$274.9 million
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ADB = Asian Development Bank, BERC = Bangladesh Energy Regulatory Commission, BPDB = Bangladesh Power Development Board, DESA = Dhaka Electric Supply Authority, DESCO = Dhaka Electric Supply Company Limited, km = kilometer, kV = kilovolt, MPEMR = Ministry of Power, Energy and Mineral Resources, MVA = megavolt-ampere, MW = megawatt, NWPGC = Northwest Power Generation Company Limited, PGCB = Power Grid Company of Bangladesh Limited.

Table A1.2: Sector Road Map and Capacity Building

Objective	Impact	Performance Target	Measurement
Sector Road Map <ul style="list-style-type: none"> Bringing the entire country under electricity service by 2020 in phases Increased private sector participation Making the power sector financially viable by 2010 with increased efficiency 	<p>Generation</p> <ul style="list-style-type: none"> Corporatization of the existing power stations under BPDB on an individual or cluster basis Development of captive power policy <p>Transmission</p> <ul style="list-style-type: none"> Completion of system metering installation <p>Distribution</p> <ul style="list-style-type: none"> BPDB distribution segment to be converted into a number of distribution companies DESA to be corporatized REB's graduation policy to be implemented for balance development of all PBSs Completion of asset transfer to corporatized distribution entities <p>Sector Regulation</p> <ul style="list-style-type: none"> BERC to be fully functional <p>Private Sector Participation</p> <ul style="list-style-type: none"> Promotion of private sector participation Mobilization of domestic capital <p>Operational Performance</p> <ul style="list-style-type: none"> Improved operational and financial performance of the power sector entities 	<p>Generation</p> <ul style="list-style-type: none"> Completion of study for conversion of BPDB as a holding company by December 2007 Corporatization of BPDB holding company by June 2008 Preparation of captive power generation policy by 2006 <p>Transmission</p> <ul style="list-style-type: none"> Completion of system metering installation by 2007 <p>Distribution</p> <ul style="list-style-type: none"> WZPDC fully functional by 2006 Implementation of REB's graduation policy from 2007 Completion of DESA corporatization by 2007 NWZPDC to be fully functional by 2007 Corporatization of BPDB's south zone power distribution network by 2007 Corporatization of BPDB's central zone power distribution network by 2008 <p>Sector Regulation</p> <ul style="list-style-type: none"> Approval of BERC organogram by 2006 Appointment of the remaining commissioner by December 2007 Gazette notification of tariff regulations by December 2007 <p>Private Sector Participation</p> <ul style="list-style-type: none"> Completion of a study for promotion of private sector participation by June 2008 Direct listing of PGCB and DESCO shares in local stock market by December 2007 Issue of PGCB's local bonds by June 2007 <p>Operational Performance</p> <p>By December 2007</p> <ul style="list-style-type: none"> Distribution losses: 17.4% Collection to import: 78.9% Accounts receivable less than 3.5 months, debt service coverage ratio not less than 1.4 <p>By December 2008</p> <ul style="list-style-type: none"> Distribution losses: 17.1% Collection to import: 79.2% Accounts receivable less than 3 months, debt service coverage ratio not less than 1.2. 	<ul style="list-style-type: none"> Quarterly program and project progress reports Reports from power sector entities and regulatory commission National statistics on power supply Power sector entities' annual reports

Objective	Impact	Performance Target	Measurement
Capacity Development Sector-wide capacity development to sustain reforms and restructuring, covering: <ul style="list-style-type: none"> • Corporate and financial management • Information and communication technology • Long-term system planning • Good governance • Customer relations • Research and development • Human resource development and training 	<ul style="list-style-type: none"> • Improved corporate and financial management of power sector entities • Operational efficiency and transparency • Updated least-cost development plans • Future investment projects • Improved sector and corporate governance • Enhanced customer satisfaction • Application of latest energy efficiency and clean development mechanisms • Safe and efficient operation of power business 	<ul style="list-style-type: none"> • Enhanced corporate management mechanism in business plan, investment and financial plan, funds mobilization, and commercialization • Introduction of such advance information and communication technology systems as e-procurement and management information system • Regular updates of demand forecasts; preparation of power system master plan for generation, transmission, and distribution • Preparation of future investment projects based on the least-cost development plan • Enhanced predictability, accountability, transparency, and stakeholder participation in the business process • Improved quality of service and customer relations • Improvements in operational efficiency and reliability of power supply • Optimally skilled human resources in the power sector with adequate capacity for planning, engineering, procurement, construction supervision, and operation and maintenance of power supply systems 	<ul style="list-style-type: none"> • Quarterly program and project progress reports • Reports from power sector entities and regulatory commission • National statistics on power supply • Power sector entities' annual reports

BERC = Bangladesh Energy Regulatory Commission, BPDB = Bangladesh Power Development Board, DESA = Dhaka Electric Supply Authority, DESCO = Dhaka Electric Supply Company Limited, NWZPDC = North West Zone Power Distribution Company Limited, PBS = *palli bidyut samity* (rural electric cooperatives), PGCB = Power Grid Company of Bangladesh Limited, REB = Rural Electrification Board, WZPDC = West Zone Power Distribution Company Limited.