

## ADB- Funded Power Projects in Bangladesh\*

Since 1995, ADB has been the lead funding agency in the power sector in Bangladesh, accounting for roughly one third of all the financial assistance from development agencies in the sector. ADB influences institutional and policy reforms through its loan covenants, policy dialogue, and Technical Assistance (TA) programs. ADB's power sector strategy in Bangladesh consists of (i) continued corporatization and commercialization of sector entities and increasing private sector participation, (ii) institutional improvements in power sector entities, (iii) creation of new power sector companies to serve as role models for the sector, (iv) enlarging the scope of PBSs or rural electric cooperatives, (v) strengthening the long-term planning and regulatory processes, and (vi) promotion of good governance at the sector and corporate levels.

Power sector reforms and restructuring initiated in 1994 and largely driven by donor loans has achieved the following: (i) creation of a competitive, diverse market with independent public and private generation companies; (ii) restructuring of the sector by transferring all transmission assets and operations to a new transmission company; (iii) creation of a competitive environment by establishing several sector entities; and (iv) establishment of the energy regulatory commission. There is as yet no private finance in transmission and distribution and little prospect of introducing it in the short term. More recently, Government issued a 3-year road map for power sector reforms, setting out detailed time-bound action plans for the reform process and investment program for 2006–2008.<sup>a</sup>

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\* By Violeta P. Corral, Public Services International Research Unit-Asia ([www.psir.org](http://www.psir.org)), September 2007.

References include: *Sustainable Power Sector Development Program*, Report and Recommendation of the President, RRP (June 2007) <http://www.adb.org/Documents/RRPs/BAN/36107-BAN-RRP.pdf>, *Sector Assistance Program Evaluation of ADB Assistance to Bangladesh Power Sector*, ADB Operations Evaluation Department (Dec 2003) <http://www.adb.org/Documents/Reports/SAPE/BAN/sap-ban-2003-30.pdf>; various ADB project documents. ACRONYMS: **APSC** – Ashuganj Power Station Company Limited; **BERC** – Bangladesh Energy Regulatory Commission; **BPDB** – Bangladesh Power Development Board; **DESA** – Dhaka Electric Supply Authority; **DESCO** – Dhaka Electric Supply Company Limited; **DPDC** – Dhaka Power Distribution Company Limited; **EGCB** – Electricity Generation Company of Bangladesh Limited; **NWPGC** – Northwest Power Generation Company Limited; **NWZPDC** – North West Zone Power Distribution Company Limited; **PBS** – *palli bidyut samity* (rural electric cooperative); **PGCB** – Power Grid Company of Bangladesh Limited; **REB** – Rural Electrification Board; **RPC** – Rural Power Company Limited; **WZPDC** – West Zone Power Distribution Company Limited

<sup>a</sup> The ADB-financed power system master plan update (PSMPU) estimates that demand for electricity will grow at an annual rate of about 8.0% for the next 10 years and that about 20% of the additional generation capacity will be required to serve peak load. The PSMPU also estimates that \$5.4 billion of new investment would be required by 2015 for new generation capacity, of which about half would be covered by the private sector, and the rest by the Government and development partners. Approximately \$1.0 billion of additional investment in transmission would be needed to meet the demand by 2015; distribution will require around \$1.5 billion by 2015. (<file:///D:/Documents/Produced-Under-TA/36107/compb.pdf>)

Only just over 30% of the population has access to electricity. Until 1998, the Bangladesh Power Development Board (BPDB) was responsible for all generation and most transmission in the country, as well as for distribution in district towns, municipalities, and some rural areas, while Dhaka Electric Supply Authority (DESA) was responsible for distribution in the capital city of Dhaka and greater Dhaka area. Electricity distribution in most rural areas of Bangladesh is the responsibility of around 70 PBSs, which are organized, initially funded, and monitored by the Rural Electrification Board (REB). BPDB is now responsible for only about 60% of electricity generation and about 30% of distribution.<sup>b</sup>

The unbundling of the power sector started in 1996 with the creation of Power Grid Company of Bangladesh Limited (PGCB) to take over all of BPDB's and most of DESA's transmission assets, and Dhaka Electric Supply Company Limited (DESCO) to take over distribution assets in some parts of Dhaka.<sup>c</sup> Other 'successor' power entities which are autonomous and commercially oriented have been or are set to be created as companies operating under the 1994 Companies Act. These include the following:

- BPDB's distribution operations are organised into four zones (central, east, southwest, and north); two zones are already corporatized:
  - West Zone Power Distribution Company Limited (WZPDC)
  - North West Zone Power Distribution Company Limited (NWZPDC).
- BPDB's successor companies in generation include:
  - Ashuganj Power Station Company (APSC) established in 2000 to take over BPDB's generation assets in 724-MW Ashuganj Power Station
  - Electricity Generation Co of Bangladesh Ltd (EGCB) was created to own Siddhirganj power station (3x120MW), to be constructed with ADB and WB funding.
  - A coal fired power station (250MW) at Barapukuria in the north is currently under construction and is to be owned by a company yet to be established.
  - A new ADB loan (approved June 2007) will create a new generation company in northwestern region, provisionally called Northwest Power Generation Company Limited (NWPGC).
  - Other power plants for corporatization are Ghorasal (950-mw), Chittagong (420-MW), Khulna (226-MW), Karnafuli hydro (230-MW), Sylhet (180-MW), Barisal (43-MW).
- BPDB's remaining functions of holding company, single buyer and system planning are set for further unbundling; a draft memorandum and articles of association have been prepared for review by Government.

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<sup>b</sup> BPDB was created immediately after independence in 1972 as a single utility responsible for all generation, transmission and distribution. In 1977, REB was created to tackle rural electrification. REB is generally regarded one of the most successful institutions in Bangladesh. Partly as a result of pressure from development partners, the Government split BPDB in 1991 by creating a separate DESA to be responsible for distribution of power in Dhaka.

<sup>c</sup> BPDB has also taken steps to internal unbundling. It has established various cost/profit centers, referred to as Strategic Business Units (SBUs). Under this scheme, SBUs are given greater autonomy in decision-making and performance based incentives are provided. The performance of SBUs has reportedly improved as a direct result of the SBU scheme.

- Dhaka Power Distribution Company Limited (DPDC) established in 2005 will take over DESA's distribution assets in Mirpur and Gulshan, Dhaka.

Several public-private and private sector entities were licensed to construct and operate generating facilities; in recent years, most generation projects have been undertaken by the private sector, and there is new capacity of 1,290 MW (about 30% of total installed capacity) established by IPPs. IPPs are built with benefit of Power Purchasing Agreements (PPAs) under which BPDB will purchase power from the generators. Private sector interest is greater with local investors. ADB played a catalytic role in enabling private finance for generation through its involvement in initial projects at RPC and Meghnaghat.

- The Rural Power Company Limited (RPC), first IPP in Bangladesh, was quickly followed by five other IPP projects (Khulna Power Company, Westmont Power, New England Power Company consortium and two AES projects at Meghnaghat and Haripur).
- AES - the leading investor in ADB- and World Bank-sponsored Meghnaghat and Haripur power stations, respectively - is a subsidiary of American power company Allegheny Energy Services. As a result of issues in its American operations, the company pulled out of a number of overseas investments, including Bangladesh.<sup>d</sup>
- The Khulna Power Company was sponsored by the Summit group, a group of private Bangladeshi companies which have investments in a number of infrastructure developments; other investors are El Paso International USA and Wartsila NSD Corporation Finland. The project is a 114-MW barge mounted power plant. Summit is the first Bangladeshi company to set up private power plants. It has already undertaken further investments, through another subsidiary, to establish several 11 MW power stations for PBSs; Summit will also consider more investments in larger power stations.
- A number of 11-MW IPP plants have been established to serve the needs of individual PBSs and have operated separately from the grid.

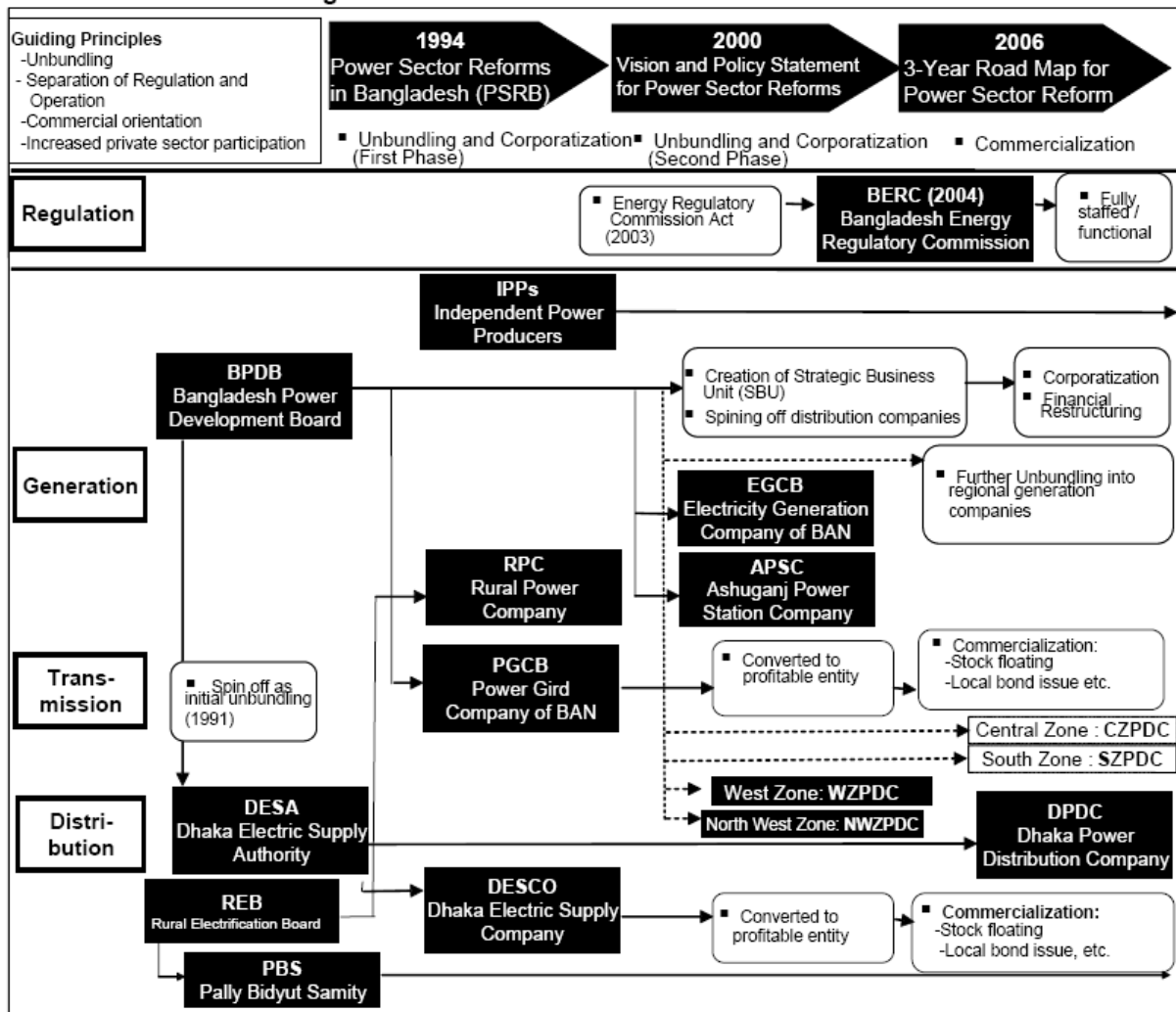
An overview of power sector reforms in Bangladesh is shown in following figure<sup>e</sup> and Box 1.

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<sup>d</sup> In December 2003, Globeleq Ltd. bought 100% equity interest in Meghnaghat from AES Corporation. The new project sponsor Globeleq Ltd. is owned by CDC Group Plc., which in turn is 100% owned by the UK government. Globeleq Asia Holdings Limited, a subsidiary of the new sponsor, has agreed to a Share Purchase Agreement dated 15 September 2005 to sell a 24% equity holding in Globeleq Bangladesh Ltd. to the Islamic Development Bank Infrastructure Fund L.P. In consequence of the share sale transaction, amendments to finance documents were signed in June 2006.

<sup>e</sup> FROM: *Sustainable Power Sector Development Program*, RRP (June 2007), p. 37.

**Figure A2.1: Power Sector Reform Overview**



CZPDC = Central Zone Power Distribution Company, NWZPDC = North West Zone Power Distribution Company, SZPDC = South Zone Power Distribution Company, WZPDC = West Zone Power Distribution Company.  
Sources: Power sector entities.

**BOX 1. Key power sector reforms in Bangladesh**

*1994:* "Power Sector Reforms in Bangladesh" Report approved that recommended unbundling the power sector, corporatization of sector entities, and establishing an independent Regulatory Commission

*1995:* The Power Cell created within Ministry of Power, Energy and Mineral Resources to drive sector reforms and promote private sector development.

*1996:* Private Sector Power Generation Policy adopted to promote IPP operations.

*1996:* Unbundling of power sector entities initiated with creation of PGCB and DESCO.

*1998:* IPP contracts awarded for Meghnaghat and Haripur projects.

*1999:* DESCO became commercially operational and has taken over retail operations from DESA in parts of Dhaka (initially in Mirpur) and in Gulshan Circle (effective from April 2003).

2000: Ashuganj Power Station Company (APSC) incorporated to take over BPDB's generation assets in Ashuganj Power Station; the company still operates as an integral part of BPDB. This was a test case for unbundling a station out of BPDB and setting it up as an independent company with a PPA with BPDB for sale of its output.

2000: 'Vision and Policy Reforms for Power Sector Reforms' approved to set long-term targets

2003: Parliament passed Bangladesh Energy Regulatory Commission Act 2003 to give the regulatory body a wider mandate and independence.

2004: Bangladesh Energy Regulatory Commission (BERC) established.

2004: PGCB and DESCO became profitable organizations. PGCB's corporate bond issuance also approved by Government to raise funds to finance local currency costs.

2005: DESA incorporated as Dhaka Power Distribution Company Ltd (DPDC) to take over DESA's distribution systems.

2005: Power pricing framework approved by Government

2006: 3-year 'Road Map for Power Sector Reforms' (2006-2008) approved and implemented.

### Labor issues

ADB identifies labor union opposition for fear of job losses -- as well as lack of political will and unwillingness to change by entrenched interests -- as being contributory factors to the difficulties that accompanied the ongoing reform process. Sector restructuring and the corporatization of successor entities include human resource issues such as employee retrenchment plans and retirement or gratuity benefit schemes, which may be unfunded.

**PGCB** - Transmission activities have been spun off to PGCB. Although the new limited liability company was established in 1996, the first asset transfer did not take place until 1999 and the last transfer was at end 2003. PGCB had to take on all of BPDB employees engaged in transmission activities, and had great difficulties in getting the labor unions to accept new terms and conditions under PGCB contracts of employment. A total of 1,522 employees were placed on lien in PGCB from BPDB, of these 1,289 employees have opted to join PGCB and 147 employees have returned to BPDB. The ADB provided funding of Taka480 million (US\$8 million) towards unfunded pension obligations and gratuities to employees who joined PGCB from BPDB.<sup>f</sup>

#### STATEMENT OF PGCB SRAMIK KARMACHI UNION – PGCBKSU (excerpts only, 2006)

The workers and employees Power Grid Company of Bangladesh Ltd formed a trade union in April 2003 named "PGCB SRAMIK KARMACHI UNION" (PGCBKSU) which was registered with

<sup>f</sup> *Power Sector Development Program II* - Component A: Support for Power Sector Reform and Restructuring, ADB Technical Assistance Report, Submitted by: Nexant and Bangladesh Engineering & Technological Services (June 2006), p. 2-1, <file:///D:/Documents/Produced-Under-TA/36107/compa.pdf>

Register of Trade Union, Government of Bangladesh, in September 2003. It is the National Transmission Workers & Employees Union and its scope is all over Bangladesh.

In 1999 Government separated the electricity transmission system from Bangladesh Power Development Board (BPDB) and created a new entity PGCB. Initially the intention of the new entity's management was not to absorb all the existing workers working in BPDB transmission sector. Instead it was intended to absorb on choice. At the same time, the management was against the formation of Trade Union. However, after prolonged difficult negotiation we succeeded in reaching agreement for absorption of all employees/workers & formation of Trade Union and finally PGCBSKU was registered, recognized by management and Government in September 2003.

From the very beginning, PGCBSKU is facing very difficult situation and hostile attitude from the management side. However, through various strategic planning, academic activities PGCBSKU is trying to overcome these adverse situation.

In February 2006 with the support of a political party, another union has started functioning in PGCB Ltd. So as per legal provision last 10 August 2006, CBA election was held & PGCBSKY has been elected as CBA.

PGCBSKU is now functioning through a central executive committee consisting of 20 members and its total membership of PGCBSKU is 565 out of total 645 employees and workers. Total women members are 20 out of 24 women workers.

The recent successes of PGCBSKU:

- PGCBSKU has become successful to provide over time benefit to some of its members which were unlawfully denied by the authority since long. The success came through negotiation meetings and legal activities.
- PGCBSKU has become successful to compel the management to form 'Participation committee'.
- PGCBSKU has become successful to compel the management to revise the pay structure in June 2005.
- PGCBSKU has become successful to compel the management to provide the back service benefit to those employees who had a deficit of less than 1 year to qualify to get the benefit.
- PGCBSKU has successfully organized one Electricity Workers Conference with the support of PSI-SA.

Besides the regular Trade Union practice, PGCBSKU is also organizing some activities from the consideration of social responsibility and on public interest.

PGCBSKU has definite plans to address the following:

- To make the casual/daily basis workers regular.
- To make the manpower set up rationale in the organization which is not satisfactory now.
- To implement the ILO standards properly.
- To make the members aware and efficient through various education and capacity-building programs.

**DESCO** - Dhaka Electric Supply Company (DESCO) was created in 1996 to take over some of the service areas in Dhaka from DESA. All employees were recruited directly by DESCO under contracts of employment drawn up by the company. Employees did not have the automatic right to transfer; management of the new company was given the authority to appoint staff under terms and conditions drawn up by the company. Pay scales are higher than those of BPDB and DESA. DESCO has outsourced the functions of meter reading, bill distribution to customers and network maintenance -- (i) meter readers are employed on one year contracts, renewable depending on performance, (ii) meter readers are rotated regularly, (iii) bill delivery is by non-permanent messengers, and (iv) a crosscheck mechanism is instituted to test meter reading and bill delivery on random basis.<sup>g</sup>

**ASPC** - Ashuganj Power Supply Company Limited (APSC) was created in 2003 to take over the Ashuganj power station from BPDB. Employees were transferred from BPDB under existing contracts. APSC took over 703 employees from BPDB, of these 612 remain, including 37 casual staff and the remaining employees have either retired or returned to BPDB. New pay scales and terms and conditions are expected to be implemented shortly.<sup>h</sup>

**BPDB** – An ongoing ADB TA will help corporatize BPDB and formulate personnel policies, organize transfer of assets and staff to the new company, and organize the voluntary separation scheme for eligible staff of BPDB. The main social issue will be the redeployment of BPDB staff to the new company; this should be tackled with appropriate counseling, and retraining wherever feasible. The TA will suggest a strategy for the voluntary separation scheme for eligible BPDB staff.

**Unfunded Pension Obligations and Gratuities** - The transfer or retrenchment of employees from BPDB and DESA to successor companies will require settlement of accrued pensions and gratuities. Pension commitments are largely unfunded and actuarial valuations of such commitments have not been undertaken to provide an indication of the size of the burden. (a) **PGCB** - In the case of PGCB, such costs amounted to Taka480 million (US\$8 million) and involving 1,270 employees, equivalent to an average cost of Taka378,000 (US\$6,300) per employee. The ADB provided the necessary funding. (b) **BPDB and DESA** have 24,000 and 3,567 full-time employees respectively. Based on these statistics, one can broadly estimate the likely costs of Taka9.1 billion (US\$142 million) and Taka1.3 billion (US\$21 million) for BPDB and DESA, respectively; funding for such restructuring costs has yet to be secured. These should be introduced in the balance sheets of BPDB and DESA.<sup>i</sup>

Tranche releases of a new ADB policy loan (\$60M) is tied to budget allocation by Government of at least Tk1.8 billion for unfunded pension and gratuities for already

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<sup>g</sup> *op cit*, pp. 2-2, 2-9

<sup>h</sup> *op cit*, p. 2-2.

<sup>i</sup> *op cit*, pp. 2-9, 3-19

corporatized entities (including WZPDC, APSC, and NWPDC for first tranche release), and at least another Tk1.8 billion for newly corporatized entities (such as EGCB and DPDC for second tranche release). [See table below for other required actions for tranche release.<sup>j</sup>]

**Table 5: Required Actions for Tranche Release**

Output	First Tranche (\$30 million)	Second Tranche (\$30 million)
1. A National Action Plan for Power Sector Reform	<ul style="list-style-type: none"> <li>Government approval of 3-year Road Map for Power Sector Reforms (2006–2008), as agreed between the Government and ADB.</li> <li>Establishment and implementation of a regular monitoring and reporting mechanism to oversee the power sector reform process.</li> <li>Submission of a technical project proposal satisfactory to ADB for a sector-wide, medium-term capacity building program by the Power Division of MPEMR to the Planning Commission.</li> </ul>	
2. A Fully Functioning Legal and Regulatory Framework	<ul style="list-style-type: none"> <li>Approval of the BEREC Organogram by the Secretaries Committee on Administrative Developments.</li> <li>Gazette notification of the Licensing Regulations as finalized by BEREC.</li> <li>Submission of the Electricity Generation Tariff Regulations with the tariff-setting mechanism to the Energy and Mineral Resources Division of MPEMR.</li> </ul>	<ul style="list-style-type: none"> <li>Appointment of the remaining one BEREC commissioner.</li> <li>Gazette notification of the Electricity Generation Tariff Regulations along with the tariff-setting mechanism as finalized by BEREC.</li> </ul>
3. Enhanced Financial Health of Power Sector Entities	<ul style="list-style-type: none"> <li>Preparation of a draft financial restructuring plan for BPDB and DESA by the Power Division of MPEMR in a manner satisfactory to ADB.</li> <li>Budget allocation of at least Tk1.8 billion by MOF for unfunded pension and gratuities for entities already corporatized, including WZPDC, APSC, and NWZPDC.</li> <li>Reduction of the Government's outstanding debts to power sector entities for electricity to less than Tk1.2 billion and the Government's autonomous and semiautonomous bodies' outstanding debts to less than Tk3.0 billion.</li> </ul>	<ul style="list-style-type: none"> <li>Approval by the Government of the financial restructuring plan for BPDB and DESA.</li> <li>Budget allocation of at least another Tk1.8 billion by MOF for provision of unfunded pension and gratuities for newly corporatized entities, including EGCB and DPDC.</li> <li>Reduction of the Government's outstanding debts to power entities for electricity to less than Tk1.0 billion and the Government's autonomous and semiautonomous bodies' outstanding debts to less than Tk2.5 billion.</li> </ul>

### Recent ADB-funded power projects

#### **Sustainable Power Sector Development Program**

*Project Loan (\$400.0M – OCR; \$5.0M – ADF), Policy Loan (\$60.0M – ADF), June 2007*

The policy actions supported by the program loan will help improve sustainability of the power sector through financial and organizational restructuring and will focus on five key outputs that will (i) develop and implement a national action plan for continuing power sector reforms, (ii) establish a fully functional legal and regulatory framework, (iii) enhance the financial health of power sector entities, (iv) further restructure the sector entities, and (v) promote private sector participation and public-private partnership. The investment components are expected to accelerate the reform program by (i) transferring the remaining DESA area to a newly corporatized entity, Dhaka Power Distribution Company Limited (DPDC), and (ii) creating a new generation company in the

<sup>j</sup> FROM: *Sustainable Power Sector Development Program*, RRP (June 2007), p. 10.

northwestern region of the country. ADB's Summary Poverty Reduction and Social Strategy has found 'significant' labor issues in the loan.

### **Corporatization of Bangladesh Power Development Board (BPDB)**

*TA – \$0.8M, approved Aug 2005*

The TA will prepare detail plans to (i) corporatize BPDB; (ii) introduce modern management information systems in the new company; (iii) integrate the new company into the power sector network; and (iv) define the new company's relationship with other sector entities. TA will include devising key strategies for (i) evaluating assets; (ii) establishing a viable financing plan; (iii) formulating personnel policies; (iv) organizing for the transfer of assets and staff to the new company; (v) organizing the voluntary separation scheme for eligible staff of BPDB; (vi) examining and organizing for the sale of BPDB's shareholding in its affiliated companies; and (vii) implementing financial and management information system. The main social issue will be the redeployment of BPDB staff to the new company; this should be tackled with appropriate counseling, and retraining wherever feasible. The TA will suggest a strategy for the voluntary separation scheme for eligible BPDB staff.

### **Power Sector Development Program**

*\$286-million (\$100M - program loan/OCR; \$186M – project loan/OCR), approved Dec 2003*

The objective is to support power sector reforms through financial restructuring of two major companies -- Power Grid Company of Bangladesh Limited (PGCB) and Dhaka Electric Supply Company Limited (DESCO) -- and : (i) providing support and incentives for sector reform activities such as independent tariff setting, competitive dispatch of generation, functional segregation of sector activities; (ii) promoting PGCB and DESCO as commercially viable companies that can access capital markets for at least a part of their future capital needs; and (iii) modernizing and upgrading distribution systems in northwest Bangladesh. Utilities cannot be financially self-sustaining without long-term bond markets; currently, Bangladesh does not have any. By restructuring the balance sheets of PGCB and DESCO, and asking them to raise funds through commercial bonds, the Program also helps to develop a bond market in Bangladesh. The project loan has three components: Construction of 2x100 megawatt (MW) peaking power plant at Siddhirganj near Dhaka; Construction of a national load dispatch center (NLDC) at Rampura in Dhaka; Renovation, upgrading, and extension of distribution in Rajshahi, Serajgonj, Bogra, Pabna, Rangpur, Dinajpur, Joypurhat, Thakurgaon, Nilphamari, and Gaibanda towns in northwest Bangladesh. Project loan will boost the restructuring of the sector by transferring the operation of the urban distribution in northwest Bangladesh from the Bangladesh Power Development Board (BPDB) to the North-West Zone Power Distribution Company that is being created.

### **Corporatization of the Dhaka Electric Supply Authority (DESA)**

*TA- \$0.85M, approved Nov 2002*

TA will assist the Government to (i) corporatize DESA, (ii) introduce modern management information systems in the new company, (iii) integrate the new company into the power network as a distinct power distributor, (iv) define the new company's relationship with other sector entities. As part of DESA's corporatization, TA will

examine private sector participation options for Dhaka Electric Supply Company Limited (DESCO). The last ADB Mission was fielded in August 2007 to discuss further implementation steps.

### **West Zone Power Development**

*Loan - \$198.9 million (\$138.7M – OCR; \$60.2M – ADF), approved Dec 2001*

The objectives of the Project are to (i) increase electrification in southwest Bangladesh; (ii) enable evacuation and economic utilization of the power generated from the projects being contracted at Baghabari and Bheramara; and (iii) reduce losses and improve reliability of the existing transmission and distribution systems in southwest Bangladesh. Private and public sector enterprises are building power generation plants due to come onstream in two to three years. ADB is financing the construction of the transmission systems to evacuate electricity from the new plants and the networks to distribute this power to cities and villages. The project will lower the cost of power supply in the West Zone as well as reduce system losses and improve the quality of supply. It will bring power to 500,000 new customers, a significant portion of whom live in the rural areas.

### **Corporatization of West Zone Distribution Operations of Bangladesh Power Development Board (BPDB)**

*TA - \$0.9M, Dec 2001*

TA will assist the Government and BPDB to (i) corporatize BPDB's distribution in the west zone, (ii) introduce modern management systems in the new company, (iii) advise the new company on modernizing and upgrading the power network of Khulna City, and (iv) establish quality assurance practices in the new company for its efficient operation.

### **(AES) Meghnaghat Private Sector Project**

*\$140M financing package to AES Corporation, approved Dec 2000*

ADB financing to construct a 450-megawatt combined-cycle, gas-fired power plant in southeast Dhaka. The project, the first ever power project supported by the private sector in Bangladesh, will provide cheaper electricity for the people and alleviate acute power shortages in the country. The project is the first competitively bid power project in Bangladesh and will be used as a model for other projects. AES Meghnaghat Limited (AML) will build, own, and operate the power plant in accordance with an Implementation Agreement between the Government and AML, and a Power Purchase Agreement (PPA) with Bangladesh Power Development Board (BPDB). The PPA is for 22 years and BPDB will take or pay for all electricity generated up to a plant load factor of 85 percent. At this level of production, AML will recover its full capacity and variable costs and generate a return on equity. AML is a subsidiary of US-based AES Corporation; commercial operation is expected to begin in January 2003.<sup>k</sup>

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<sup>k</sup> ADB's participation provides comfort to participating commercial banks and the Project Sponsor. The financing package consists of a US\$50 million ADB loan, a US\$70 million loan from a syndicate of commercial banks under the ADB's partial risk guarantee (PRG) scheme (a first for ADB) and a loan package from commercial banks totaling US\$20 million under the ADB's complementary financing scheme. AES Corporation will provide equity of US\$80 million and the Infrastructure Development Company Limited (IDOCOL), a government-owned financial institution, will provide additional financing of US\$80 million to complete the total project cost of US\$300 million. The PRG scheme is one of ADB's instruments to promote financial flows to developing countries, and it is aimed at providing loan default

### **Dhaka Power System Upgrade Project**

*Loan - \$157 million (\$82.0M – OCR; \$75.0M – ADF), approved Dec 1999*

The objectives of the Project are (i) enable evacuation and economic utilization of the power generated from the contracted Build-Own-Operate/Build-Own-Transfer (BOO/BOT) Projects; (ii) reduce losses and improve reliability of the existing transmission and distribution system in the Dhaka area; and (iii) initiate preparatory works for a training and management development institute in the Rural Electrification Board (REB).

### **Corporatization of Ashuganj Power Station**

*TA – \$1.0M, approved Dec 1999*

APS is a major power station in Bangladesh owned and operated by the Bangladesh Power Development Board (BPDB) with an installed capacity of 728 megawatts (MW) based on natural gas fuel, comprising two steam turbine units of 64 MW each, three steam turbine units of 150 MW each, and one combined cycle unit of 150MW. Due to funding constraints and lack of modern management practices, the operating capacity of the power station had dropped over the years. In an effort to improve financial self-sufficiency and reliability, the Government decided to establish a new corporation – the Ashuganj Power Station Company, Limited (APSCL) to take over ownership and operation of APS. This was a test case for unbundling a station out of BPDB and setting it up as an independent company with a PPA with BPDB for sale of its output.

### **Ninth Power Project**

*Loan - \$134.4M, approved Dec 1996*

Ninth Power Project is another big step for the state-run power sector toward being re-organized along more commercial lines. The project will provide the transmission system for the country's first private sector-built power project at Meghnaghat outside Dhaka. It will also create two new semi- autonomous entities, one to handle transmission, the other distribution, to replace a state agency. The aim is to organize these functions along commercial lines. The project will also start the "unbundling" of Bangladesh Power Development Board (BPDB) into separate generation, transmission, and distribution entities. This is designed to increase the accountability of each function. To handle transmission, the project will create the Power Grid Company of Bangladesh (PGCB) to construct 230kV transmission lines and substations and also to build a national load dispatch center and communication network. For distribution, the Dhaka Electric Supply Company (DESCO) will be established to operate distribution systems in metropolitan Dhaka. The new entities, operating with more autonomy and new procedures, are designed to inject dynamism into the sector and, being more bankable, to attract urgently-needed investments from the commercial sector. The transmission and distribution project will proceed alongside the Meghnaghat power project; both projects are due for

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protection against political risks that may arise in connection with the project. Such risks include expropriation or nationalization of all or part of the borrower's assets, the imposition of foreign exchange restrictions, and failure by the Government to honor its payment obligations. Any claims paid by ADB in relation to the PRG will be reimbursable by Bangladesh or may be converted into public sector loans from ADB to Bangladesh. ADB's PRG risk exposure will be offset by a counterindemnity offered by Bangladesh in favor of ADB.

completion around mid-2000. The transmission project includes a line from Comilla which will make available another 200 MW for Dhaka; thus, the projects will supply an extra 500 to 650 MW to the capital. The total project cost is US\$313.7 million; WB is providing cofinancing of \$63.3 million and the remaining finance will come from the Government.

### **Rural Electrification**

*Loan – \$50.0M, approved 1995*

The project aims to (i) intensify rural electrification in seven PBSs; (ii) increase the availability of power supply to five PBSs, and (iii) introduce the basic elements of corporatization, commercialization, and private sector participation in the power sector. Mymensingh Power Station, owned and operated by the Rural Power Company (RPC) Limited, which received assistance from the project, is one of the first IPPs in Bangladesh and operates under dispatch by the Power Grid Company of Bangladesh (PGCB) with payments according to a PPA.

**RECENT ADB POWER PROJECTS IN BANGLADESH\***

TITLE	DESCRIPTION	TYPE OF ASSISTANCE	DATE OF APPROVAL	AMOUNT (US\$)
<b>Preparing A Public-Private Partnership to Promote Renewable Energy Development</b> <sup>1</sup>	To accelerate investment in renewable (clean) energy projects through establishment of a public-private joint venture company to undertake project development, construction, financing and operation on a portfolio basis of up to 500 MW renewable capacity (including wind energy, industrial cogeneration, waste-to-energy, mini and micro hydroelectric, solar electric and bio-fuel projects). Initially, primary focus shall be on wind energy and small hydroelectric projects. TA will help prepare ADB's proposed equity investment in JV company, further developing company's strategy, outlining financing plans and providing assistance for technical and commercial assessment of possible projects for acquisition and/or development. TA will undertake pre-feasibility study, technical and commercial analysis of the renewable energy project pipeline and prioritize most viable or feasible renewable projects either for development and/or acquisition.	TA Special Fund	PROPOSED (for approval in Oct 2007)	0.15M
<b>Tendering Process for Independent Power Producer Plants</b> <sup>2</sup>	Help select private sector developers for establishing two clean-fuel power generating plants on a build-own-operate (BOO) basis: (i) a 450 megawatt (MW) gas-fired combined cycle power plant at Sirajganj and (ii) a 450 MW gas-fired combined cycle power plant at Meghnaghat Phase-3.	TA Special Fund	July 2007	0.6M
<b>Sustainable Power Sector Development Program</b> <sup>3</sup>	Policy actions will help improve sustainability of power sector through financial and organizational restructuring and will focus on five key outputs that will (i) develop and implement a national action plan for continuing power sector reforms, (ii)	Policy Loan	June 2007	60.0M – ADF

\* TA – Technical Assistance; ADF – Asian Development Fund (concessional terms); OCR – Ordinary Capital Resources (less concessional)

	<p>establish a fully functional legal and regulatory framework, (iii) enhance financial health of power sector entities, (iv) further restructure sector entities, and (v) promote private sector participation and public-private partnership.</p>			
	<p>Investment components expected to accelerate reform program by (i) transferring remaining DESA area to a newly corporatized entity, Dhaka Power Distribution Company Limited (DPDC), and (ii) creating a new generation company in northwestern region. <u>Part A</u>: Clean Energy Capacity Expansion. (i) A new 150 MW natural gas-fired gas turbine peaking power plant in Sirajganj along with its auxiliaries; and (ii) a new 150 MW natural gas-fired gas turbine peaking power plant in Khulna, including its auxiliaries and associated underground connecting transmission line to Khulna central substation. <u>Part B</u>: Transmission System Efficiency Improvements. (i) A new 400 kV overhead transmission line from Meghnaghat to Aminbazar, including bay extensions, (ii) augmentation of 230 kV transmission system improvements in Aminbazar–Old Dhaka Airport, Dhaka Cantonment and Dhaka University areas along with associated substations, and (iii) three new 132 kV transmission lines and associated substations in the country's western and northern regions. <u>Part C</u>: Distribution System Efficiency Improvements in DESA Area. <u>Part D</u>: Distribution System Efficiency Improvements in DESCO Area. (i) Upgrading and expanding distribution system in Gulshan Circle, including Tongi Area; and (ii) upgrading and expanding distribution system in Mirpur Circle. <u>Part E</u>: Capacity Development. To improve utility performance and promote sustainable operations, strengthening institutional resources in power sector for corporate and financial management, information and communication technology, long-term system</p>	<p>Project/Investment Loan</p>	<p>June 2007</p>	<p>400.0M – OCR; 5.0M - ADF</p>

	planning and future project preparation, good governance, customer relations, research and development, and human resource development and training.			
	–	TA – Japan Special Fund	Aug 2007	0.84M
<b>Corporatization of Bangladesh Power Development Board (BPDB)</b> <sup>4</sup>	Prepare detail plans to: (i) corporatize BPDB; (ii) introduce modern management information systems in new company; (iii) integrate new company into power sector network; (v) define new company's relationship with other sector entities. TA will include devising key strategies for (i) evaluating assets; (ii) establishing a viable financing plan; (iii) formulating personnel policies; (iv) organizing for transfer of assets and staff to new company; (v) organizing voluntary separation scheme for eligible staff of BPDB; (vi) examining and organizing for sale of BPDB's shareholding in its affiliated companies; and (vii) implementing financial and management information system. The main social issue will be redeployment of BPDB staff to new company; this should be tackled with appropriate counseling, and retraining wherever feasible. TA will suggest a strategy for voluntary separation scheme for eligible BPDB staff.	TA – Japan Special Fund	Aug 2005	0.8M
<b>Promoting Private Sector Participation in Energy Sector</b> <sup>5</sup>	Help Government in promoting private sector participation and assuring sustainable development in gas sector and: (i) undertake a comprehensive review of existing framework for private sector investments; (ii) disseminate information on the practices of public-private partnerships in energy sector from various countries; (iii) specify goal and roles of partners, extend and timing of their involvement, knowledge sharing and building social/institutional capital in sector; and (iv) select energy sector projects for future investment that will involve private sector participation.	TA – Japan Special Fund	Dec 2004	0.625M

<b>Power Sector Development Program</b> <sup>6</sup>	<p>To support power sector reforms through financial restructuring of two major companies -- Power Grid Company of Bangladesh Limited (PGCB) and Dhaka Electric Supply Company Limited (DESCO) — and: (i) providing support and incentives for sector reform activities e.g. independent tariff setting, competitive dispatch of generation, functional segregation of sector activities; (ii) promoting PGCB and DESCO as commercially viable companies that can access capital markets for at least a part of their future capital needs; and (iii) modernizing and upgrading distribution systems in northwest Bangladesh. Utilities cannot be financially self-sustaining without long-term bond markets; currently, Bangladesh does not have any. By restructuring balance sheets of PGCB and DESCO, and asking them to raise funds through commercial bonds, Program also helps to develop a bond market in Bangladesh.</p>	Program Loan	Dec 2003 (CLOSED)	100.0M - OCR
	<p>Project loan has three components: Construction of 2x100 megawatt (MW) peaking power plant at Siddhirganj near Dhaka; Construction of a national load dispatch center (NLDC) at Rampura in Dhaka; Renovation, upgrading, and extension of distribution in Rajshahi, Serajgonj, Bogra, Pabna, Rangpur, Dinajpur, Joypurhat, Thakurgaon, Nilphamari, and Gaibanda towns in northwest Bangladesh. Project loan will boost restructuring of sector by transferring operation of urban distribution in northwest Bangladesh from Bangladesh Power Development Board (BPDB) to North-West Zone Power Distribution Company that is being created.</p>	Project Loan	Dec 2003	186.0M - OCR

<b>Corporatization of Dhaka Electric Supply Co. Ltd (DESA)</b> <sup>7</sup>	(i) corporatize DESA, (ii) introduce modern management information systems in the new company, (iii) integrate new company into power network as a distinct power distributor, (iv) define new company's relationship with other sector entities. As part of DESA's corporatization, TA will examine private sector participation options for Dhaka Electric Supply Company Limited (DESCO). Last ADB Mission was fielded on 25-29 August 2007 to discuss further implementation steps.	TA Special Fund	Nov 2002 (ONGOING)	0.85M
	<b>Capacity Building of DESA</b>	TA	1999 (CLOSED)	0.09M
	<b>Valuation of Assets of DESA</b>	TA	1996 (CLOSED)	0.175M
	<b>Financial Management Upgrade of BPDB and DESA.</b> To improve billing and accounting systems thru computerization.	TA	1993 (CLOSED)	1.0M
<b>West Zone Power Development</b> <sup>8</sup>	(i) increase electrification in southwest Bangladesh; (ii) enable evacuation and economic utilization of the power generated from projects being contracted at Baghabari and Bheramara; and (iii) reduce losses and improve reliability of existing transmission and distribution systems in southwest Bangladesh. Private and public sector enterprises are building power generation plants due to come onstream in two to three years. ADB is financing the construction of transmission systems to evacuate electricity from new plants and networks to distribute this power to cities and villages. Project has three main components: (i) establishing 230-kilovolt (kV) transmission lines and substations in the west zone and a second 230 kV east-west interconnector between Ashuganj and Serajganj; (ii) upgrading and expanding distribution for the cities of Khulna, Barisal, Jessore, Kushtia, and Faridpur; (iii) upgrading and expanding the networks of eight rural electric cooperatives (Palli Bidyut Samities or PBS).	Loan	Dec 2001	\$198.9M (\$138.7M – OCR; \$60.2M – ADF)

<b>Corporatization of West Zone Distribution Operations of Bangladesh Power Development Board (BPDB)</b> <sup>9</sup>	(i) corporatize BPDB's distribution in west zone, (ii) introduce modern management systems in new company, (iii) advise new company on modernizing and upgrading power network of Khulna City, and (iv) establish quality assurance practices in new company for its efficient operation.	TA Special Fund	Dec 2001	0.9M
<b>(AES) Meghnaghat Private Sector Project</b> <sup>10</sup>	ADB financing to construct a 450-megawatt combined-cycle, gas-fired power plant in southeast Dhaka. Project is first ever power project supported by private sector in Bangladesh and is the first competitively bid and will be used as a model for other projects. AES Meghnaghat Limited (AML) will build, own, and operate the power plant in accordance with an Implementation Agreement between the Government and AML, and a Power Purchase Agreement (PPA) with Bangladesh Power Development Board (BPDB). AML is a subsidiary of US-based AES Corporation; commercial operation is expected to begin in January 2003. ADB's participation provides comfort to participating commercial banks and the Project Sponsor.	Private sector (Financing package to AES)	Dec 2000	US\$50.0M – Loan; \$70.0M – Partial Risk Guarantee; \$20.0M - Complementary financing scheme
<b>Dhaka Power System Upgrade Project</b> <sup>11</sup>	(i) enable evacuation and economic utilization of the power generated from contracted Build-Own-Operate/Build-Own-Transfer (BOO/BOT) Projects; (ii) reduce losses and improve reliability of existing transmission and distribution system in Dhaka area; and (iii) initiate preparatory works for a training and management development institute in Rural Electrification Board (REB). Project includes three components: <u>Part A</u> : Construction of 230 kilovolt (kV) transmission lines and substations around Dhaka; <u>Part B(i)</u> : Upgrading and expansion of distribution system in rural areas around Dhaka. <u>Part B(ii)</u> : Upgrading and expansion of distribution system in Gulshan distribution circle of Dhaka city; and Part B(iii): Upgrading and expansion of distribution system in rest of Dhaka. <u>Part C</u> :	Loan	Dec 1999	\$157.0M (\$82.0M – OCR; \$75.0M – ADF)

	Preparatory work for a training and management development institute.			
<b>Corporatization of Ashuganj Power Station (APS)</b> <sup>12</sup>	APS is a major power station in Bangladesh owned and operated by Bangladesh Power Development Board (BPDB). Operating capacity had dropped over years. Government decided to establish a new corporation –Ashuganj Power Station Company, Limited (APSCCL) to take over ownership and operation of APS. A test case for unbundling a station out of BPDB and setting it up as an independent company with a PPA with BPDB for sale of its output.	TA – Japan Special Fund	Dec 1999 CLOSED	1.0M
<b>Ninth Power Project</b> <sup>13</sup>	Project will provide transmission system for country's first private sector-built power project at Meghnaghat outside Dhaka. It will create two new semi- autonomous entities, one to handle transmission, the other distribution, to replace a state agency to organize these functions along commercial lines. Project will start "unbundling" of Bangladesh Power Development Board (BPDB) into separate generation, transmission, and distribution entities, designed to increase accountability of each function. To handle transmission, project will create Power Grid Company of Bangladesh to construct 230kV transmission lines and substations and also to build a national load dispatch center and communication network. For distribution, Dhaka Electric Supply Company will be established to operate distribution systems in metropolitan Dhaka. Transmission and distribution project will proceed alongside Meghnaghat power project; both projects are due for completion around mid-2000. Transmission project includes a line from Comilla which will make available another 200 MW for Dhaka; thus, projects will supply an extra 500 to 650 MW to the capital.	Loan	Dec 1996	\$134.4M

Rural Electrification <sup>14</sup>	(i) intensify rural electrification in seven PBSs; (ii) increase availability of power supply to five PBSs, and (iii) introduce basic elements of corporatization, commercialization, and private sector participation in power sector. Project scope included (i) construction of 60 MW gas-based open cycle power plant; (ii) intensification and expansion of distribution networks of 7 RECs by a total of 2,900 km of 33 kV, 11 kV and 0.4 kV distribution lines and required substation capacities; (iii) computerization of accounting and commercial operations of 7 RECs. Mymensingh Power Station, owned and operated by the Rural Power Company (RPC) Ltd, which received assistance from project is one of first IPPs in Bangladesh and operates under dispatch by Power Grid Company of Bangladesh (PGCB) with payments according to a PPA.	Loan	1995	50.0M - ADF
OTHERS <sup>15</sup>	<b><i>Support for the Energy Regulatory Authority</i></b>	TA	1998 (CLOSED)	0.9M
	<b><i>Preparation of Power System Master Plan.</i></b> Prepare a realistic least cost development plan for the power sector for 1995–2010	TA	1993 (CLOSED)	0.6M
	<b><i>Review of Electricity Legislation and Regulations</i></b>	TA	1992 (CLOSED)	0.9M

## ADB PROJECT DOCUMENTS:

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- <sup>1</sup> **Preparing A Public-Private Partnership to Promote Renewable Energy Development** <http://www.adb.org/Projects/project.asp?id=41631>, <http://www.adb.org/Documents/PIDs/41631012.asp>
- <sup>2</sup> **Tendering Process for Independent Power Producer Plants** <http://www.adb.org/projects/project.asp?id=41125>; TAR, July 2007, <http://www.adb.org/Documents/TARs/BAN/41125-BAN-TAR.pdf>
- <sup>3</sup> **Sustainable Power Sector Development Program** <http://www.adb.org/projects/project.asp?id=36107>, <http://www.adb.org/Documents/PIDs/36107023.asp>, <http://www.adb.org/projects/project.asp?id=36107>, <http://www.adb.org/Documents/PIDs/36107012.asp>; RRP, June 2007  
<http://www.adb.org/Documents/RRPs/BAN/36107-BAN-RRP.pdf>; **Preparing the Power Sector Development Program II** TAR, Aug 2004 (<http://www.adb.org/Documents/TARs/BAN/tar-ban-36107.pdf>), PPTA  
<http://www.adb.org/Documents/ADBBO/PPTA/36107012.ASP>
- <sup>4</sup> **Corporatization of Bangladesh Power Development Board (BPDB)** <http://www.adb.org/projects/project.asp?id=39141>, <http://www.adb.org/Documents/PIDs/39141012.asp>; TAR, Aug 2005  
<http://www.adb.org/Documents/TARs/BAN/tar-ban-39141.pdf>
- <sup>5</sup> **Promoting Private Sector Participation in Energy Sector** <http://www.adb.org/Projects/project.asp?id=36268>, <http://www.adb.org/Documents/PIDs/36268012.asp>; TAR, Dec 2004 <http://www.adb.org/Documents/TARs/BAN/tar-ban-36268.pdf>
- <sup>6</sup> **Power Sector Development Program** <http://www.adb.org/projects/project.asp?id=36205>, <http://www.adb.org/Documents/PIDs/36205013.asp>, <http://www.adb.org/projects/project.asp?id=36107>, <http://www.adb.org/Documents/PIDs/36205023.asp>; RRP, Dec 2003  
[http://www.adb.org/Documents/RRPs/BAN/rrp\\_ban\\_36205.pdf](http://www.adb.org/Documents/RRPs/BAN/rrp_ban_36205.pdf)
- <sup>7</sup> **TA Support to Dhaka Electric Supply Co. Ltd (DESA)** <http://www.adb.org/Projects/project.asp?id=34039>, <http://www.adb.org/Documents/PIDs/34039012.asp>; <http://www.adb.org/Projects/project.asp?id=33484>, <http://www.adb.org/Projects/project.asp?id=29039>, <http://www.adb.org/Projects/project.asp?id=24315>; TAR, Nov 2002  
[http://www.adb.org/Documents/TARs/BAN/tar\\_ban34039.pdf](http://www.adb.org/Documents/TARs/BAN/tar_ban34039.pdf)
- <sup>8</sup> **West Zone Power Development** ADB Report and Recommendation of the President (RRP), Nov 2001  
[http://www.adb.org/Documents/RRPS/BAN/rrp\\_31296.pdf](http://www.adb.org/Documents/RRPS/BAN/rrp_31296.pdf); ADB Project Profile  
<http://www.adb.org/Documents/Profiles/LOAN/31296013.ASP>; ADB News Release: "Bringing Power To Rural Areas of Southwest Bangladesh" <http://www.adb.org/Documents/News/2001/nr2001199.asp>
- <sup>9</sup> **Corporatization of West Zone Distribution Operations of Bangladesh Power Development Board (BPDB)** <http://www.adb.org/projects/project.asp?id=35486>
- <sup>10</sup> **(AES) Meghnaghat Private Sector Project** <http://www.adb.org/projects/project.asp?id=31909>, <http://www.adb.org/Documents/PIDs/31909014.asp>, <http://www.adb.org/projects/project.asp?id=29034>; ADB News Release Dec 2000 "Bangladesh Power Project a Model for Private Sector"  
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- <sup>11</sup> **Dhaka Power System Upgrade Project** Report and Recommendation of the President, Nov 1999  
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- <sup>12</sup> **Corporatization of Ashuganj Power Station** <http://www.adb.org/projects/project.asp?id=32232>; TACR, June 2005  
<http://www.adb.org/Documents/TACRs/BAN/tacr-ban-3343.pdf>; *Sector Assistance Program Evaluation of ADB Assistance to Bangladesh Power Sector*, ADB Operations Evaluation Department, p. 24 (Dec 2003)  
<http://www.adb.org/Documents/Reports/SAPE/BAN/sap-ban-2003-30.pdf>

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<sup>13</sup> **Ninth Power Project**, ADB News Release, 18 December 1996, "ADB Loan Helps Bangladesh Corporatize Power Sector"

<sup>14</sup> **Rural electrification** *Sector Assistance Program Evaluation of ADB Assistance to Bangladesh Power Sector*, ADB Operations Evaluation Department (Dec 2003) <http://www.adb.org/Documents/Reports/SAPE/BAN/sap-ban-2003-30.pdf>

<sup>15</sup> **Support for the Energy Regulatory Authority** <http://www.adb.org/Projects/project.asp?id=32230>; **Preparation of Power System Master Plan** <http://www.adb.org/Projects/project.asp?id=24107>; **Review of Electricity Legislation and Regulations** <http://www.adb.org/Projects/project.asp?id=26058>