Performance of the Power Sector of Bangladesh: Governance Failures and Remedial Measures

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Preface

Transparency International Bangladesh (TIB) has been working with the mission of catalysing a sustained and effective social movement against corruption in Bangladesh. Our vision is a Bangladesh where government, politics, business, civil society and lives of the common citizens would be free from corruption, and all institutions of public interest would function transparently, accountably, credibly and effectively.

Measuring corruption through scientific research, surveys and other tools, and communicating the same for raising voice and creating demand are vital to catalyzing institutional and policy reforms necessary for fighting corruption and establishing transparent and accountable governance. Among several types of TIB's on-going research programme are the diagnostic studies designed to assess the nature and extent of corruption and governance failure, identify the root causes thereof and to recommend remedial measures.

Power (Electricity) is indispensable for life and livelihoods. It is the driving force of economic growth of any country. The Government of Bangladesh has committed to provide affordable and reliable electricity to all citizens by 2020. However, there are serious doubts whether such lofty goals can be met unless highly creative and effective reforms are in place soon. In the meantime, availability of electricity remains much below the desired level for domestic as well as industrial and commercial use.

It is a commonplace wisdom that the power sector is beset with manifold problems that include not only low production and inefficient distribution system, but also poor governance and pervasive irregularities and corruption. Allegations and reports of lack of integrity and transparency in the power sector have been in abundance for a long time including such vital areas as procurement, generation and distribution. Commonly known as system loss, high incidence of pilferage, unauthorized connections, theft, low quality commercial and day-to-day services, consumer harassment are widespread. Above all level of accountability, checks and balances and transparency have been considered too low for too long.

The Government has recently taken some vital steps towards mitigation of power crisis and reforming the sector. This report is the outcome of a diagnostic study conducted by TIB on the power sector. It brings out the challenges and problems of governance and management prevailing in the sector and puts forward a series of recommendations for promoting integrity in the sector, which would hopefully provide useful inputs to the efforts of the authority.

The study has been jointly conducted by M. Zakir Hossain Khan and M. Rasheduzzaman with the research support of Neena Shamsunnahar. Other members of the TIB staff, especially Research Division, provided valuable support including feedback and suggestions at different stages.

Professor Muzaffer Ahmad, Chairman, Board of Trustees of TIB guided and supervised the study, for which we remain grateful. The report has been enriched by suggestions of Mr. M. Hafizuddin Khan, former Adviser to the Caretaker Government and currently Treasurer of TIB.

We gratefully acknowledge contributions of a number of key informants and distinguished individuals who helped the study by sharing valuable information, knowledge and expertise. For valuable comments and suggestions on an earlier draft of the report we are particularly grateful to former chairmen of the Power Development Board Mr. Md. Quamrul Islam Siddqiue, Mr. A N M Rezwan Siddique, Mr. Touhidul Islam, Former Chairman of Rural Electrification Board; Prof. M. Rezwan Khan Vice Chancellor of United International University; Professor A K Enamul Haque of East West University; Mr. Arshaful Kabir Lablu of Dhaka Electricity Supply Authority; Mr. Md. Mizanur Rahman, Deputy Director of Power Cell; and Mr. Nuruzzaman Hawlader, Power Grid Company of Bangladesh.

We hope that the study will benefit the concerned authorities and stakeholders, and in the end help improve efficiency and integrity in the sector. TIB would welcome any constructive critique and suggestion from anyone, which would help enrich the study further.

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The State of the Governance in the Power Sector of Bangladesh: Problems and the Way Out

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List of Acronyms

ADB	- Asian Development Bank
BD	- Bidding Document
BAC	- Bureau of Anti-Corruption
BERC	- Bangladesh Energy Regulatory Commission
BOO	- Build-Own-Operate
BPDB	- Bangladesh Power Development Board
BUET	- Bangladesh University of Engineering and Technology
CBA	- Consumers Bargaining Agent
CC	- Combined Cycle
CEI	- Chief Electrical Engineer
CESA	- Chittagong Electricity Supply Authority
CIA	- Central Investigation Agency
CPD	- Centre for Policy Dialogue
DESA	- Dhaka Electric Supply Authority

DESCO	- Dhaka Electric Supply Company Limited
ED	- Executive Director
EGCB	- Electricity Generation Company of Bangladesh
EPWAPDA	- East Pakistan Water and Power Development Authority
ERD	- Economic Relations Division
FSA	- Fuel Supply Agreement
FY	- Fiscal Year
GDP	- Gross Domestic Product
GO	- Government of Bangladesh
GT	- Gas Turbine
GWh	- Gegawatt (=1,000 MW)
HH	- Household
IMF	- International Monetary Fund
IPP	- Independent Power Project
JBIC	- Japan Bank for Economic Co-operation
KPCL	- Khulna Power Company Ltd.
KV	- Kilo Volt
KVA	- Kilo Volt Ampere
KWth	- Kilowatt-hour (=1,000 watt-hours)
MD	- Managing Director
MDG	- Millennium Development Goal
MoF	- Ministry of Finance
MoU	- Memorandum of Understanding
ML	- Million Letters
MP	- Member of the Parliament
MPEMR	- Ministry of Power, Energy, and Mineral Resources
MW	- Megawatt (=1,000 KWh)
NLDC	- National Load Dispatch Center
PBS	- Polli Bidyut Samiti
PGCB	- Power Grid Company of Bangladesh
PMO	- Prime Minister's Office
PP	- Power Plant
PPA	- Power Purchase Agreement
PPR	- Public Procurement Regulation
PSDP	- Power Sector Development Program
PSMP	- Power System Master Plan
PSOD	- Private Sector Operations Department of ADB
PSRB	- Power Sector Reforms in Bangladesh
REB	- Rural Electrification Board
RFCD	- Required Financial Closing Date
RFP	- Request for proposal
RPCL	- Rural Power Company Limited
SBU	- Strategic Business Unit
SPP	- Small Power Plants
SPSS	- Statistical Program for Social Science
TEC	- Technical Evaluation Committee
TIB	- Transparency International Bangladesh
UNDP	- United Nations Development Program
USAID	- United States Agency for International Development
WAPDA	- Water and Power Development Authority
WZPDCL	- West Zone Power Distribution Company Ltd.

Executive Summary

The Government of Bangladesh is committed to provide affordable and reliable electricity to all citizens by 2020. However, among the country's 138 million people, only 42 percent has access to electricity and per capita consumption is about 140 kwh. The PDB's official report shows a shortfall of generation of around *2000 – 2200* mw. However, according to PSMP 2006, additional around *4350 mw* power has to add into national grid by *2010*. Though the current care taker government cancelled the dubious bidding process of SPP, mobilizes resources for BERC, restart of several procurements alleged to be link with corruption, converting DESA into public limited company along with the preparation of so-called citizens' charter for service providing agencies through declaring the three-year roadmap, but the situation of demand shortage is remained same or even worse than earlier time and corruption is also perverse (still non-technical system loss is on average 19.3 percent. This study examined the existing problems and governance failures in the electricity sector and the factors have influenced to inefficiency. Information from both primaries (e.g. consumer survey, key informants, household survey etc.) and secondary sources (such as acts and rules, published articles, periodicals, reports) has been used in preparing the report. Sources of secondary information included, as well as official documents. *The major findings of the study were below.*

> *Economic loss due to poor governance in power sector*: As per estimate, around loss due to purchase at higher rate from IPPs and Rental Power Plant is Tk. 467 crore and the loss due to excess T&D is around Tk. 474 crore. Besides, loss due to purchase more than 30 % of total generation from IPPs[3] and Rental Plant is Tk. 210 Crore and *as per the estimate of TIB, due to power shortage and voltage fluctuations the loss is around 1.45 % of total GDP.*

Policy level decision making process is frustrating and inefficient due to the indecision and myopic thinking of policy makers. Besides, absence of clear goal, implementing the so-called donor driven reform measures/process, emphasis on short-term planning and ignoring the PSMP, inadequate financial and administrative autonomy, co-ordination failure among agencies, absolute power of officials and absence of accountability, high dependency on foreign credit and investments, keeping BERC ineffective, frequent changes of high officials, rampant corruption and anomalies are also barrier to overall efficiency of the power sector.

Inadequate or poor financial capacity of the sector/electricity distributors is due to low-import collection ratio, instantaneous increase of the financial burden due to earlier PPA with IPPs, high input costs of oil-based power stations, tight foreign credit and unavailability of funds.

In the procurement process of equipments at public sector is the key area of corruption and complexities such as extortion in bidding process, ex-aggregate valuation of bid value, improper technical and commercial evaluation, putting clause favorable to specific company, approval of local public works without any tender in collusion etc.

Poor performances of the public power plants is due to outdated or expired life time of most of the power plants, high input cost of diesel based generators, unavailability of inputs, graft of fund and materials of rehabilitations, lack of incentives of the plant staff and delay in replacement etc.

Distributional inefficiency and the reduction of access to electricity is caused by high T&D losses[4], rampant theft of electricity and equipments by staff and CBA leaders, graft of project development and rehabilitations funds and equipments. Besides, consumer's harassments in getting new connections, meter readings, billings, day-to-day operations and rehabilitations, frequent outages and low voltages are also identified in all entities. Furthermore, politicization of connections process and intervention of vested interest group and other irregularities have make the rural consumers worse off and findings shows that the poor faces more harassments.

[3] As per estimate, in FY 2008-09 share in generation of private and PDB would be 57.7% and 42.3% respectively

[4] *Around Taka 18930 crore was lost due to theft away in the name of system loss during FY 1994 – FY 2005.*

Major recommendations for both policy as well as operations level

A) To ensure the good governance and combating corruptions at policy level

i) an *Independent Commission* to prepare and execute the 'Vision 2025 for power sector', independence of Ministry to formulate and execution of policy level decisions, ensure corporate governance with the appointment of experienced professionals as CEO and other board members for all distributor entities, Ombudsman for energy sector including power, a high-powered committee to evaluate the transparency and accountability of the transmission sector, to enact the 'Right to Information Act' and 'Engineers Act' soon, to introduce the financial, HR and commercial policy, more funds to conduct research on alternative energy and the governance in power and energy sector, to follow the PSMP strictly and update the existing Electricity Act to ensure equity in judgments, accountability of the staff with the availability of mobile and special courts and judicial magistrates.

ii) To ensure the competitive bid transparent procurement process and accountability of bid related staff with asset disclosures, import/renting of all out-dated/old plants should be banned, inclusion of the standard international price in the bidding documents, unsolicited proposal should be accepted through transparent process and exemplary punishment in submission of fake bidding documents.

B) To bring the efficiency of agencies and reduction of consumer's harassments the entities would empower the 'Detective and Investigation' department with the appointment of the honest, efficient and committed staff, to introduce a complete MIS system, 'One stop' center for clients services, remove the political and other intervention in REB, automation of full management system and effective as well as independent role of BERC.

C) To ensure the efficiency and the governance in the generation the *Power Division* should adopt efforts to approve the SPP at local or regional levels soon, appoint local experts for rehabilitation and maintenance purposes, attractive financial packages (salary, incentive, bonus, and training) for staff and same provision for local and foreign investors.

D) Efficiency in the Distribution Sides

Reduction of high non-technical losses through introducing the pre-paid meters, introducing the underground cable lines, selection of specific 'meter route' randomly each month, several 'mobile courts', ban of political affiliation of CBA, independent feeder for industrial zone, regular inspection of the electric meters, the feeder database of consumers, meter reading sheets, ledger and monthly payment bills., exemplary punishment for the theft of electricity.

E) Effectiveness of reform measures can be ensured through a specific guideline on future reform process, full autonomy of power division to adopt any decision on plan of operation, agreement, regulation, HRM (staff recruitment, incentive package for efficient staffs as well as the 'hire and fire policy' with a dynamic 'HR policy') and coporatizations.

F) Effective Bangladesh Energy Regulatory Commission (BERC)

Better co-operation between BERC and Power Division in preparation of the planning and designing for the sector and determination of tariffs, free form any intervention of donor and Govt. wider media coverage of BERC acts, efficient methodology in determination of PPA, increase of the licensing fee at progressive rate, and strict monitoring the right implementation of Citizen's Charter.

E-governance might be efficient step but a step-by-step approach at the homegrown environment can be optimum for future development. Citizens should make pressure upon the policy makers to make the power sector more dynamic and dependable industry, free from all sorts of corruption and ensuring electricity at an affordable tariff to the people of the country by the year 2015.

Chapter One:
Background

Power is the key source of productivity and an effective breakthrough to the modernization of the world society. Electricity was first installed at Dhaka in 1901, and in 1948, the Electricity Directorate was established in East Pakistan. During that period, the highest plant size was only 10 mw Steam Turbine in Siddhirganj along with other plants in Chittagong and Khulna. The construction of the Kaptai hydro-electric project with an installed capacity of 40 MW and commissioning of Dhaka-Chittagong 132 KV transmission line in 1962 was a milestone in the history of power development in this country. Each year the demand is increasing at the rate of 10 – 12 percent or 800-1000 mw and the government is also commitment to meet the MDG regarding the access to electricity for all by 2020, the country's power generation has to be increased by at least 8 per cent each year. Besides, to ensure energy security, there should be an arrangement of 16–22 percent power to be reserved in both of public and private sectors through quality investment"[5]. Since only 12 percent of the households in the lowest 20 percent of the income distribution have access to power[6], the need for better access to affordable and reliable electricity to the majority of the people of Bangladesh by 2020. However, the yearly growth of the generation verses the demand for new connections provides the reverse scenario. Therefore, the determination of consumer tariffs and the reliability of power are important issues in terms of the policy formulation, as energy prices should be based on production costs and efficiency, and subsidies should be given on the basis of social and economic need.[7]

Box 1: Historical Background of The Power Sector

1901: Electricity was first installed at Ahsan Manjil, Dhaka City (Generation: 21 MW by Public; Distribution: 17 towns by private companies)
1948: Electricity Directorate (ED)
1959: Water and Power Development Authority (WAPDA)
1960: EPWAPDA statuary org.
1972: Bangladesh Water Development Board and Bangladesh Power Development Board
1978: Rural Electrification Board
1991: Dhaka Electricity Supply Authority
1996: Electricity Generation Company of Bangladesh and Dhaka Electricity Supply Company
2002: Ashuganj Power Supply Company Ltd.
2003: West Zone Power Distribution Company Ltd.
2005: North West Zone Power Distribution Company Ltd
Source: http://www.bpdb.gov.bd

1.1 Background Overview of the Power Sector in Bangladesh

The Government of Bangladesh is committed to provide affordable and reliable electricity to all citizens by 2020. However, the nation's 138[8] million people, only 42 percent[9] have access to electricity, which was only 3 percent in 1971; and per capita consumption is about 140 kwh, still one of the lowest in the world where as on *India's this rate is 561 kwt per hour.*[10] Unfortunately, 79 percent of the connected suffer severe load-shedding, and 60 percent of the consumers face low-voltage supply.[11]

[5] Key Informants
[6] World Bank, 2002
[7] Expert in power sector, *The Daily Samokal*, 13 July 2006
[8] Population Census Report 2003, BBS
[9] Power cell, February 2007
[10] UNDP 2004, pp. 207-209
[11] Draft Energy Policy of Bangladesh, 2006

The power sector of Bangladesh is usually characterized by natural monopolies[12]. Conventional wisdom states that since natural monopolies threaten competitive pressures, they should be regulated either by the government, through independent regulatory agencies or directly by public enterprises. Moreover, allowing another firm would increase cost or inefficiency. The Power sector includes the generation, transmission and distribution of electricity among different holdings including residential, commercial, industrial and service sectors under the guidance of the Power Division of MPEMR. At present, BPDB has total installed capacity of generating 4680 MW in 65 units, including the public and private sectors.

Table 1: Key Statistics of the Power Sector

Generation					
Shares	**Installed Capacity**	**De-rated Capacity**	**Available Capacity**	**Maximum Generation (27 Jun'08)**	**Minimum (Jan'07)**
Total (mw)	5245	4631	3500 - 4200	3346	3000
Public/BPDB (mw)	3872				
IPP (mw)	1397				
REB (at 33 kv level) in mw	67				
Demand					
Demand Served	6000 mw*	including consumption from captive generation			
Peak Demand	4300 - 4800	mw			
Captive Power	1200	mw			
Avg. Load Shed	600 - 1300	mw			
Transmission Lines	4119	230 and 132 KV in km			
Distribution Lines	2,64,891	km			
Access to Electricity	40 (%)				
Per capita generation	165 kwh				
Per capita consumption	140 kwh				
Consumers (In Lac)	97.33	Number including WZPDCL			
Agricultural Consumers	2.16 Lac				
System Loss (Average)	19.3 %				

Source: Power Cell, February 25, 2007
*1200 captive power consumption
**http://www.powercell.gov.bd/index.php?page_id=227

The Independent Power Producers (IPP) is now producing 1290 mw in 37 units of power plants located at different parts of the country[13].
In this situation, the GoB drafted an energy policy accounting the increased scope of gas exploration and power generation to meet the future demand for both renewable and non-renewable energy. Currently, 80 percent of power is non-renewable indigenous gas-based, and 70 percent of the commercial energy is recovered by gas[14]; the rest **20 percent is from power** and 10 percent from coal.
Due to poor generation, the maximum demand served was the lowest of less than 3000 mw at peak hours in April, 2008. Though there was no significant increase in power generation, the transmission network was expanded rapidly by the funding from ADB. However, due to the intervention of vested interest groups, poor co-ordination, the absence of accountability and transparency is perverse. Power shortage hampers the contribution of power to GDP growth and creates huge excesses/unbearable demand. Under these critical circumstances there is an immediate need to identify or diagnose the major reasons for the unavailability of power as well as the low level performance of the power sector.

1.2 Corruption – facts and arguments

Corruption and mal-practices is not new in practices through out the world. Irrespective of culture, society and economic conditions of a country it prevails, but from economic point of view, an efficient economy should control corruption in such a way so that it cannot challenge the

[12] Natural monopolies refers sector in which it is more efficient to have only one farm operating due to cost sub additively, and it pushes/maximize the cost inefficiency
[13] PDB, July 2006
[14] Chowdhury Toufique, in a dialogue on "Bangladesh's power situation: Problems and Responses", CPD 23 May' 99

sustainable development. According to Shleifer and Vishny (1993) *corruption cases the lower economic growth and countries grow more slowly where talented people are engaged in rent-seeking activities.*[15] According to the IMF, the World Bank and the CIA Fact Book[16], Bangladesh ranks 31st among 179 countries with respect to the size of the GDP in PPP,[17]. Though the current performance of the country's economy is satisfactory, the economic growth is at risk due to rampant power failure, which hampers production. However, the future potential of the power sector is impressive. Instantaneous crisis in the power sector is not a current phenomena, it started several years back. Alternatively few economists argued in favor of corruption at minimum scale to foster the economic growth such as Mauro (1993), argued that '*speed money' would help to overcome the 'bureaucratic red tape' and 'bribe' works as incentive for the hard working government workers.*

According to the ADB (2005), "The major constraints in the sector were (i) the lack of institutional capability, (ii) the unavailability of long-term domestic capital for financing investments, (iii) limited foreign exchange debt service capability in the economy, (iv) poor management systems and procedures, (v) low employee commitment, and (vi) institutional weaknesses in governance". This study has tried to identify the factors influencing the shortage of power and the access to power; it has also tried to identify the nature and extent of corruption.

According to Transparency International, "corruption means the misuse of public office for private gain, includes cheating, nepotism, bribery, extortion, influence peddling and fraud". Corruption is one of the major threats to global development, especially in developing countries; for instance, "corruption is jacking up the cost of power projects in the Philippines, delaying their implementation and providing Filipino households and businesses with expensive but unreliable electricity services"[18]. According to the Household Survey on Corruption in 2005[19], "around 10 percent of the consumers are using illegal connections and around 48 percent paid bribes for taking a new connection or meter". This corrupt practice was first identified in 1956. According to Husainy, "Dacca Electricity Supply Co. was also nationalized in 1956 due to virulent corruption in new connection due to excess demand, maintaining uninterrupted power supply; though some improvement was observed but not significant at all during that period." [20]

Husainy's study refers to the corrupt practices in the procurement of power plants and machinery; installation; commissioning and maintenance; selection and appointment of consultants; human resource management and disciplinary actions; local purchases, foreign travels and tours; traveling allowance claims and obtaining new electric connections and enhancement of the authorized load; consumer's metering and billing and under-collection of revenues. In terms of distribution of electricity, non-technical loss and pilferage of electricity make the sector more vulnerable and the bribery and harassment of the staff faced by 70 percent of the consumers[21] are few of the examples of the mismanagement of this sector.

Under the above circumstances, it is necessary to identify the prospect and governance in the power sector. This study tries to find the source of corruption in several issues of procurement, generation, transmission, distribution and human resource management, including the effectiveness of the existing act to combat the corruption and abuse of power.

1.3 Validation of the Study

- Electricity is essential to industrial production, transportation, commerce, SME, irrigation and hence the creation of jobs, essential health and education services, enjoying TV, pc and other modern equipments and becoming aware of the social, health and environmental risks related to MDGs
- The national economy has been growing at around 6% and each year additional demand is around 800-100 mw.

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[15] Haque and Muzaffer, *Cost of corruption – an investigation into the rationality of paying bribe, page 2,* forthcoming paper at Jahanginagor University economic journal

[16] http://www.wikipedia.org/wiki/List_of_countries_by_GDP_(PPP), 20 August, 2006

[17] along with Austria, Sweden, Vietnam, Greece, Malaysia, Egypt, Algeria, even Switzerland, Hong Kong, Portugal, Norway, Chile, Denmark and Hungary as well

[18] http://news.inq7.net/nation/index.php?index=1&story_id=54785; ADB, 2005

[19] Transparency International Bangladesh

[20] Husainy, 2001, Transparency International Bangladesh

[21] Corruption HH survey 2005, TIB

- The average growth rate of the demand was projected at 8.98 percent for FY 2000-2015 (PSMP 2006), but the reasons for the unavailability of power and risks were not discussed.
- The power elasticity of GDP in Bangladesh is estimated at 0.03 to 0.05, implying that a 10 percent power shortfall could lower GDP growth by 0.3 to 0.5 percent[22]. During FY 2005, load shedding was resorted to on 287 days, equivalent to 1,433 hours. Power crises, therefore, result in great economic loss.
- According to the Corruption Household Survey done by TIB in 2005, the consumers of PDB, DESA, DESCO and PBSs reported that bribes were taken against the allocation of meters
- The Staff of the power sector are not held accountable and there is inefficiency in the distribution of power as well.

In view of above requirements, risks and constraints, this study has been undertaken to identify the major weaknesses or constraints of the power sector in an attempt to make it more competitive and user-friendly.

1.4 Objectives of the Study

The broader objective is to review the governance system of the power sector and to identify the nature of corruption likely to be present in the different divisions of the power sector.
Specific Objectives of the study

- To identify the existing problems and governance failure (if any) have caused to severe demand-supply shortfall
- To identify the vulnerable areas of corruption/corruption risks as at policy level, procurement, generation, transmission, distribution and commercial operations
- To identify the factors responsible for poor HRM, accountability and transparency of the plant staffs
- To identify the reasons for non-technical loss and estimate economic loss
- To investigate the client-clientele interface and quality of electricity supply to the consumers
- To provide policy guidelines finally

1.5 Scope of the Research

The scope of this study is limited to the governance failures of power shortage, the problems in the power sector and the prospect of future reform, constraints to execute the PSMP, the weaknesses in the existing format of PPR 2008 and whether or not any corrupt practice exists in the process, the financial performance of the different agencies of the power sector, the major weaknesses in the IPP policy, the efficiency of the plants, the problems in maintenance and rehabilitations, the constraints in efficiency of the power plants; governance failure in the commercial operations and accountability of the CBA; the effectiveness of the Electricity Act of 1910 and the constraints faced by BERC. The Scope of this study also includes the weaknesses and constraints in the procurement of new plants, the problems in generation of power, its transmission and distribution, and also the effectiveness or ineffectiveness of the Electricity Act to control the corruption.

1.6 Limitations of the Study

- Officials of the power sector were skeptical and uncooperative in terms of providing the required documents; DESA, in particular, did not cooperate in anyway, despite the official order sent to them from the Secretary of Ministry.
- The Study did not capture all the wings of the power sector due to limited time and information.
- Due to poor data management, the real picture of governance failure could not be included.

[22] Bangladesh: Public Expenditure Review, page 104, Document of World Bank and ADB, May 2003

Chapter Two:
Methods of Research

2.1. Analytical overview on the governance and corruption

Governance is a broader notion than government, whose principal elements include the constitution, legislature, executive and judiciary. Governance involves interaction between these formal institutions and those of civil society[23].*Governance describes the process of decision-making and the process by which decisions are implemented (or not implemented). Hereby, public institutions conduct public affairs, manage public resources, and guarantee the realization of human rights. Good governance accomplishes this in a manner essentially free of abuse and corruption, and with due regard for the rule of law.*[24] The major characteristics of good governance are *participation, rule of law, transparency, responsiveness, consensus orientation, equity and inclusiveness, effectiveness and efficiency and accountability* (World Bank, 2007).

Governance refers to the process whereby elements in society wield power and authority, and influence and enact policies and decisions concerning public life, and economic and social development. The governance of a country or institution is considered to be failed or ineffective when the rampant corruption takes place in the several organs of the government. According to Ahmad (2007), *Corruption takes place because of inadequacies in existing public management systems as well as in social and cultural role of communal bonds and kinship ties within social framework.*

Gray and Kaufman (1998) defined corruption as using of public office for private gain through bribery and extortion, fraud and embezzlement of public funds (by politicians and policy makers at higher level). In *United Nations Manual on Anti-Corruption Policy*, corruption is defined as an abuse of (public) power for private gain that hampers the public interest. In essence, corrupt practices involve public officials acting in the best interest of private concerns (their own or those of others) regardless of, or against, the public interest. According to the Transparency International, corruption *includes embezzlement of funds, theft of corporate or public property as well as corrupt practices such as bribery, extortion or influence peddling.* As per Black's Law Dictionary, an Individual is to be considered corrupt as "spoiled; tainted, vitiated; depraved, debased; morally degenerate" (Ahmad, 2007).

Corruption is the most prevalent in a country of which has colonial history, political instability, bureaucratic red tape, and weak legislative and judicial system[25]; besides, low salaries, a gift culture, absence of rules, regulations, policies and legislation, unaccountable public officials with excessive authority, high range of discretion with respect to interpretation and application of regulations and also driven by greed, the absence of transparency, accountability and watchdog institution influence to be corrupt. In the context of manifestation, involvement and the practices, Mr. Atlas derived nine characteristics of the corruption – *i) corruption involves more than one person; ii) corruption involve secrecy; iii) corruption involves elements of mutual benefit; iv) those who are involves in corruption normally camouflage their activities; v) involves people who want definite decision and those who are able to influence these decisions; vi) involves decision usually a public body; vii) any form of corruption is betrayal of trust; viii) any form of corruption involves a contradictory dual function of those who are committing the act; ix) a corrupt act violates the norms of duty and responsibility*[26].

Corruption cost represents five per cent of the world economy—or more than $1.5 trillion a year, according to World Bank figures published at a United Nations conference on corruption.[27] A country that improves its standing on the corruption index from , say 6 to 8 (0 being the most corrupt, 10 the least) will experience a 4 percentage point increase in its investment rate and a 0.5 percentage point increase in its annual per capita GDP growth rate (Mauro, 1996).

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[23] The Governance Working Group of the International Institute of Administrative Sciences 1996

[24] www.wikipedia.org

[25] Mauro P. , *Corruption: causes, Consequences, and Agenda for Further Research*, International Monetary Fund

[26] Ahmad J., *Challenging Corruption: Professional Accountants at the Crossroad*, presented in the XVI Biennial Conference of Bangladesh Economic Association, 12 -15 December, 2007

[27] http://www.indianexpress.com/res/web/ple/full_story.php?content_id=37059

Klitgaard (1998) has analyzed the corruption from market as well as governance point of view; and he formulated formula of $C = M + D - A$, where corruption equals monopoly plus discretion minus accountability in public, private or non-profit organization where a person has monopoly power over goods and services. Like other developing and developed countries the electricity department of Bangladesh is state owned monopolies/natural monopoly which ahs created inefficiency and rent seeking behavior - *often, governments use these utilities to pursue, political, social, and economic objectives, thereby obfuscating the commercial aspects of the utilities. In the process, the management controls, the accountability of the utility mangers, and the transparency of their operations are compromised. Over these years, this can lead to inefficiency. Corruption, overstaffing, poor standards of supply and service, weak functional performance by the utilities, and fiscal burden.*[28] This research has illustrated the nature and extent of governance and the root causes of poor performance at policy level, generation, transmission, and distribution include commercial operations, the rural-urban disparities and effectiveness of BERC.

2.2. Empirical Support

Several techniques and few estimates have been used to acquire the extent of corruption and opportunity. The following formula have been used to estimate-

Gain in reduction of excess T&D=

$$\sum_{d}^{i} \left\{ (ETD - STD) * IKwt \Big/ 100 \right\} * ASR \quad \text{----------} \quad (1)$$

where, ETD =exiting T&D, STD= Standard T&D (for developing countries) fixed @12 % and other rates as well, IK= Imported Kilowatt by concern distributor agencies, ASR=Average Sales Rate; d=distributors type (PDB, DESA, DESCO, REB or PBS, i=1,2,3,----------,n

Net loss in Profit =

$$\{TETD * (ASR - ADCK)\} \quad \text{----------} \quad (2)$$

where, TEDK= Total of excess T&D or pilferage amounts in Kwt, ADCK = Average Distribution Cost of Per Unit

Yearly transaction pf bribe per year =

$$\sum_{d}^{i} (NCPY * ABP * BPC \quad \text{----------} \quad (3)$$

Where, NCPY= New connections per year, ABP= Average bribe paid, BPC = Bribe paid per consumer, d=distributors type (PDB, DESA, DESCO, REB or PBS), i=1,2,3,--------,n

Opportunity/Productivity loss due to power shortfall=

$$\sum_{d}^{c} (ALP * PCL) \quad \text{----------} \quad (4)$$

Where, ALP= Average loss in production amount, PCL= Percentile (%) of consumers faced losses, d=distributors type (PDB, DESA, DESCO, REB or PBS), i=1,2,3,--------,n

Above equations are applied to estimate in analysis of several sections of findings. To estimate these equations as well as other qualitative and quantitative information on nature and extent of corruption in the procurement system, purchase, performance of pubic power plants, limitation of law and irregularities in enforcement. Besides, policy related problems and mal-practices secondary literatures, reports, articles, periodicals, reports, acts and rules, electronic journals, documents of power sector, case studies on power generation, transmission and distribution have

[28] G. Mohindar and Rao Y., Corruption in the electricity Sector, Page 116, The Many Faces of corruption World Bank

been reviewed. Informal discussions with stakeholders, employees and experts of the power sector are also exercised to verify the report and fine tuning of data.

The primary sources of qualitative data are and documents on the procurement and distribution sides to assess whether any mismanagement or illegal practices such as abuse of power and/or funds and resources took place. Rapport building played an important role in the extraction of the qualitative data. Key informants were sector experts, policy makers, academicians who provided specific case studies and recommendations to improve the governance of the power sector, including procurement, BERC, generation, distribution and legal practice.

Consumer-interface

To extract the information a cross section survey among all types of consumers (residential, commercial, industrialist and users of agricultural pump)s was administered during 5 May to 5 June of 2006 to find out the quality of services provided by different organization including PDB, REB/PBSs, DESA and DESCO. The instrument of the survey, i.e. the questionnaire, was developed by the researcher and then validated through field tests. The components of the questionnaire were - i) the basic profile of the consumers with the information on the socio-economic profiles of the consumers/adult respondents, consumption pattern of electricity, ii) the types of connection, the new connection process, problems and harassment faced by consumers, the amount of bribe transacted during the connection process; iii) the quality of electricity service in terms of meter reading and billing process, illegal practices such as collusion with meter readers, fake billing, and other day-to-day service-related problems; iv) load extension, load shedding and voltage variation, losses of equipment due to voltage fluctuation; v) and finally, the consumers' satisfaction regarding the different commercial services has also been illustrated through this measuring scale.

A multi-stage stratified sampling technique has been followed to determine the sampling of the consumers for the survey considering the proportionate weight for each distributor agencies, and then the proportion of consumers across the distributors is considered in second stage. In third stage, using the standard formula of random sampling (the precision level or observed probability of corrupt practices was extracted at 0.7 at a 5 percent level of error) 1027 sample were determined using the design effect and across agencies in regional clusters. Due to the diversity of the areas and consumer types, geographical, commercial and industrially potential areas of PDB, PBS, DESA and WZPDCL, a balance proportion of the different types of consumers, the concentration of industrial, commercial units in different areas under DESA, CESA/PDB, DESCO and PBSs (where system loss was above 20 percent) were selected randomly. And from 70 PBSs, 2 PBS were considered survey areas. Based on the above information, the sampling areas and the number of sample were selected. Finally, the sample consumers were interviewed, maintaining systematic intervals, in the case of multi-storied buildings, one consumer was chosen randomly; while industrial or commercial consumers from concerns of different sizes, types and locations were considered as well. The final sampling framework is shown in Table 2. Besides, the findings from household survey on corruption are also used to compare the periodical scenario of trend in corruption and harassments.

Besides, to introduce with experiences at household level in getting services from public and private sector a household survey on corruption was administered for the period of June'06 to July'07 by TIB. And one of the important sectors was electricity and *a total of 5,000 households were interviewed for attaining the objectives of the survey, 3,000 (60%) from rural areas and 2,000 (40%) from urban areas. There were 250primary sampling units (PSU).*[29]*Among them 150 were for rural and 100 were for urban areas. At the first stage, PSUs or Mauzas were selected randomly from each of 16 strata according to above allocation. At the second stage a block of 200 households was constructed randomly from each PSU. As there are some PSUs in the IMPS that have less than 200 households, households from adjacent Mauzas were added to those PSUs. At the third stage, 20 households were selected systematically for interview. The selected households were asked questions regarding corruption they experienced in the last one year through a structured*

[29] More weight was given to urban PSU selection, as National Household Survey on Corruption 2005 found higher variability in overall bribe amount in urban areas than in rural areas. Then 250 PSUs were distributed in 16 strata according to the national population weights of those strata.

questionnaire.[30] The findings of this survey are also used to compare the performance of the distributor agencies between two time periods.

Case studies and Key Informant Interview

Several case studies on corrupt practices in procurement; the abuse of input and public money for maintenance, rehabilitation and other development and operational activities; illegal intervention of the vested interest group; and problems in distribution have been included in the relevant section to visualize the extent and nature of corruption. Unpublished official documents and investigation reports are also used as primary sources in the case studies.

Several Key Informant Interviews were conducted with the GO officials, representatives of the World Bank and ADB, experts in the generation, transmission and distribution sides of the power sector, journalists who have extensive experience in reporting on the power sector to gather inputs on governance failures on policy issues; weaknesses in the procurement system, institutional constraints, the role of aid agencies regarding financing; weaknesses and constraints in generation, distribution, and BERC; and the effectiveness of the Electricity Act and the future pathway.

Seven university graduates with relevant work experience in socio economic surveys were recruited to implement the survey in through out May, 2006. Three teams, consisting of two field investigators and a team leader, were appointed in each sampling area. Each team worked in two power distribution area stated in sampling frame. The survey team was coordinated by the researchers.

After the respondents completed the questionnaire, the investigators carefully checked the filled up questionnaire to ensure that all the questions and respective answers were addressed/recorded properly. Supervisors rechecked the filled-up questionnaires from the field and Principal Investigator also visited the field to check the quality of work. Both primary and secondary data have been analyzed to explore the nature and extent of corruption on the supply and demand sides, including the estimate of economic/welfare loss through SPSS an MS.xls.

[30] Report on Household Survey On Corruption, 2007-08, page 7 and 8, Transparency International Bangladesh

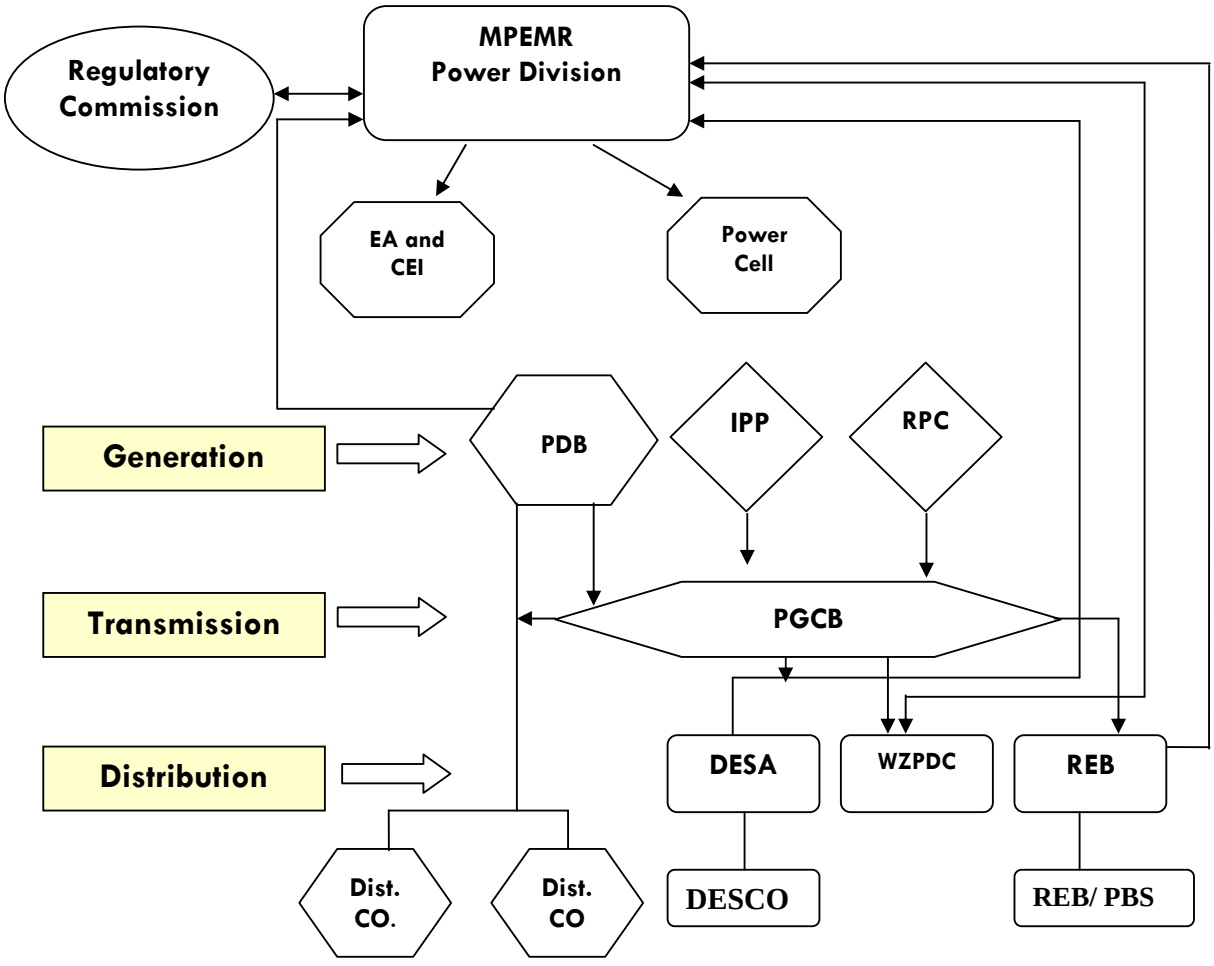
Chapter Three:

Overview on the Governance and Acts of Power Seector

3. Governance Failures and Problems in the Power Sector

Under the co-ordination and guidance of the Power Division, BPDB, a holding company, is solely responsible for generating, transmitting and distributing power through PDB, DESA, DESCO, WZPDCL and REB/PBSs though out the country. Usually, the Prime Minister[31] is in charge of the MPEMR and a State Minister runs the Power Division under the guidance of the PM. The PDB Chairman is Chairman of the newly converted holding company of BPDB[32] and the Secretary of corporatized companies such as PGCB and WZPDCL.. Furthermore, Chairman of DESA is also the Chairman of DESCO. The newly established BERC is to regulate planning, tariff fixing, dispute settlement and licensing. The following Flow Chart-1 shows the functional relationship between the different wings of the power sector.

Flow Chart 1: Functional Activities of the Power Sector



[31] Currently an Advisor of Care Taker is in Charge
[32] Appendix A: 1

Economic Loss due to power outage, ineffieincy and poor governance

Power outage/failure is a common phenomenon now a day. Consumers face severe load shedding, voltage fluctuation throughout the day and this problem is more severe in the rural areas. The frequency and duration of power cuts increase during the peak consumption time (5 pm to 10 pm), and during the irrigation period. According to TIB study (2007), over the performances of the electricity distributor entities, PDB and other entities have reported of frequent power breakdown and voltage variations (highest 38.7% heavy industries face machinery and equipment damage and 35% of the residential consumers face the damage to their electrical equipment due to power outages). *Estimate of TIB shows that due to power shortage and voltage fluctuations the loss is around 1.45 % of the national GDP*. Almost 90% of all RMG factories use diesel- based generators; if they received electricity, the productivity or the export would go up by an additional *5%, roughly $290 million per year*[1]. If we accumulate all opportunity loss inlcuindg productivity and equipment loss due to poer outage, the cost of using the 90 percent diesel-based generators by the RMG sector and by the theft amount around additional **9,000 mw** power could be added into the national grid.

According to Flow Chart 1, the BERC is a watchdog agency responsible for regulating the energy sector; the MPEMR, on the other hand, is solely responsible for implementing the plan and design of the energy sector, including power. Power Cell was created under MPEMR to plan and evaluate several policies on energy use, Private Sector Generation, future reform process, etc. And PGCB was created under the Company Act as a corporation to develop and transmit electricity from the generation to the distribution ends.

3.1. Poor Accountability and Malpractice in Human Resource Management

Alongside the problems, constrains and failures of the Power sector regarding several problems in the access to data or information HR management, accountability of the staffs, tyranny of CBA are portrayed below.

A. Poor access to information or data and inadequate reliability of data

Information is the key input for transparency and accountability in any sector. Besides, reliable and correct information is required to analyze the performance trend of the sector, but there is no unique 'one stop' or integrated center in the power division or other entities of the power sector which can compile all the power sector related information/data, policies or other updates. In fact, there are significant discrepancies in the data circulated by the different stakeholders of this sector. Sometimes, the ambiguous data misleads the policy makers. However, the current advisor for the MPEMR raised the question of the validity of the data supplied.

B. Inefficient HR Management and mal-practices

Several entities such as the BPDB, PGCB, DESA, DESCO and REB are engaged in the generation, transmission, and distribution of power. Earlier, to operate the sector Organogram for the PDB was approved in early '70s; at the current age, however, a dynamic and efficient staff is required. Unfortunately, the PDB staffs were incorporated in the REB, DESA and DESCO.
In such a technical sector, 50,663 staff members are currently engaged in the power sector, *of which only 12 percent (6164) officers have technical expertise. Except for the PGCB, the percentile of 3rd and 4th class employees are more than 80 percent*[33] *in all entities, where around 40 percent is excess in terms of the nature of the work required and technical know-how*, but the vacancies for technical staff are ongoing, and the human resource management has been a critical task due to the CBA's (and other parties') intervention.

[33] Appendix A.5

i. Vacancy and Recruitment Process[34]

According to 'The Bangladesh Power Development Board (Employees) Service Rules, 1982', "Appointment of all Class I and Class II posts shall be made – (a) by direct recruitment; and (b) by promotion- on such promotion as may be fixed in each case by the Board, from time to time, with previous approval of the Government." In the PDB, around 26 percent of the posts among the approved 21,330 positions are vacant. Of the vacancies, around 14 percent are technical position.[35]

The Ministry of Establishment took decision regarding the recruitment of the staff. The PDB advertised the vacancy of 3227 posts in 2003. Only 180 technical and 20 second and third class staff was appointed in 2006; but this recruitment process began in 2001; finally, the Ministry of Establishment gave its approval, but in the mean time, along with the existing vacancies, many other positions became vacant.

ii. Transfer of Staff and Regulation

Transfer is usually a regular process in any sector; however, in the case of the power sector, due to poor accountability there is a lack of regularity in the transfer of the staff. Moreover, this system is abused by corrupt officials. The PDB Chairman has been changed four times within the past few years. Such an important position of Member (admin) of the PDB was also vacant for the last one year. In the last several years, various efficient officials of the power sector were removed and replaced with less efficient and politically motivated officials or staff members. There are several instances of the violation of the rules and regulations regarding the appointment, promotion and posting of officials and other staff members. For instance, one official holding the position of DS was awarded the post of secretary of the power division; furthermore, he gained an unusual double promotion in a single day in January 2006. To make the staff aware that there is no alternative to maintaining the 'hire and fire' policy, the recruitment process should be transparent and should ensure all types of examinations. According to the Service Rules of 1982, any transfer would be made by the Board to ensure

- Better functioning of the Board
- Whether one has worked in a station for more than three years
- Indiscipline activities/objection cases

The CBA and professional groups intervene in the usual transfer process. High officials and management make sudden transfers due to pressure from those groups. Simultaneously, there is an allegation that many 1st class officials take the help of the CBA leader for their transfer and promotion. The major limitations, constraints and problems in the HR management of the power sector are discussed below:

- *Absence of Human Resource Policy*

A unique and visionary human resource policy has not been adopted as yet. As a result, anarchy and indiscipline are being observed in the recruitment process. There has been no effective recruitment for the last ten years.[36] Due to the absence of a recruitment process, there is a severe shortfall of experts as well as efficient and honest chairmen for different organizations of the power sector.

- *Unavailability or Absence of MIS of Staff Members*

For any recruitment, the PDB/DESA has to submit the requisition in a prescribed form to the Ministry of Establishment through the Power Division. It is difficult for the Board to know the information on all the members of staff because there is no central data base. As a result, when the Ministry of Establishment sends query regarding the currents status of human resources, it takes time to respond to the query since even the PDB/DESA is unable to comment on the exact status of staffs' members past and current performance.

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[34] Circular in the news paper against the vacant post , Written test and viva-voce for 1st 2nd and 3rd class employee, Viva voce only for 4th class employee, Separate members and committee for written and viva-voce, Examiner and tabulator members become separate

[35] .Appendix A.5.1

[36] The former PDB chairman, 2006

- *Complicated Recruitment Process*

According to Section 8 of the Service Rules, 1982, (1), "There shall be conducted written, oral and, whenever necessary, practical examinations and test in such subjects as may be determined by the Board for the purpose of selection of persons for appointment to the posts"; the applicants should pass through these examinations, but several claims of the violation of these rules by the intervention of CBA leaders, the Board, as well as the Power division has been reported.

- *Violation of the Merit Order in Recruitment*

"All candidates shall be assessed and evaluated separately in Form No.3. The aggregate of the marks given by each member of the Selection Committee and the marks obtained in the examination and test shall determine the position of the candidates and the selection committee shall make recommendations in order of preference"; this was said in the Service Rules about the maintaining of the merit order. In several cases, however, especially in the last suspended recruitment, this rule was violated.

- *Insignificant appointment of skilled/technical staff*

The PDB started recruitment in 2001, but it has failed to finalize the process. Finally, in 2003, the PMO intervened to complete the recruitment of 130 technical posts (Assistant Engineer) against the 200 vacancies, but the Sub-Assistant Engineer filed a case in the High Court for his promotion and made an injunction upon the recruitment process. This process was started again in 2006, but the number of vacancies went up to 260, including several technical positions, and is severely hampering the service.

- *Appointment of non-technical, less committed and dishonest staff as high officials*

In the case of the REB, the chairman is appointed from the civil service or non-technical side; as a result, s/he is in critical need of understanding the technical aspects of the power sector. Besides, there are several claims that the honest and committed officials cannot be promoted to chairman or any higher position.

- *Frequent Changes of High Officials*

The Chairman of the different organizations should play key role in leading the staff with dynamism, but the frequent changes in the higher positions have made the sector vulnerable; there have even been changes within months. As a result, the ownership, interest and accountability in the decision making process are not ensured, causing delays decision making in the power sector.

- *A good number of staff members in current charge and their corruption linkage*

Due to the vacancy in technical positions there is a good number of non-technical staff members who have been hired to fill these vacancies; there is an allegation that in most cases, those positions have been pursued with the intention of committing corruption or abusing their of power.

- *Absence of effective training program*

There are no continuous training programs for the staff's development; in the case of the power sector, training is a key input for getting the staff oriented with modern technology to improve the sector's efficiency.

- *Selection of non-technical staff for abroad training*

In the selection of non-technical staff, the Ministry intervenes in the process and several allegations have been made that non-technical individual from the power division or other agencies for training abroad.

10% to 15% of the posts are still vacant because of the complicated and time-consuming process of recruitment. Retirement of the staff is a continuous process. Therefore, advanced planning for the recruitment of the staff can ensure a fair, efficient and transparent recruitment process.

- *Rewarding the guilty and punishing the honest*

Several cases have been identified where a corrupt employee has been promoted and the honest one has been punished for maintaining high integrity and showing patriotism in his assigned tasks. According to the investigation report[37] of the Power Division, an order was given in 1999 to

[37] Memo No. 2, Allegation 2, 26/ 02/ 99, the Ministry of Power, Energy and Mineral Resources, Bangladesh Govt

suspend and transfer 21 officer, and staff members for their offences. Unfortunately, the PDB did not implement the order; on the contrary, it promoted or rewarded those employees. On other hand, IO and other smart and efficient staff members were punished as OSD by the collusive efforts of the corrupt staff.

C. Irresponsibile power sector staff

There are rules to make the staff accountable. In Chapter XVII: Punishment and Appeal, of Service Rules 1982, "an employee i) is guilty of negligence to his duties; ii) is inefficient, or has ceased to be efficient; iii) is guilty of misconduct; iv) is corrupt, or may reasonably be considered corrupt because-

Box 12: Unaccountable Corrupt Store Keeper

Mr. 'X', working at the Khulna Power Station as a store keeper for the last 20 years, in collusion with CBA and other senior officials was also engaged in stealing oil for a long time. According to the source, each month 65,700 liters of oil (fuel) were adjusted in the ledger book; the oil was being sold in black market before storing and the govt.'s losses was Taka 16,42,500 (per liter Taka 25 in 2005).

'X' never provided his actual property statement to the Board. He owns a house on 10 kathhas land, a poultry farm of no less than Taka 50 lacs, poultry feed industry of Taka 50 lacs capital and is currently using six phones, including fixed phone. He holds nine accounts in different banks of Khulna, runs rent a car business (ten baby taxi and one micro bus) worth of Taka 50 lacs, two licenses (in his son's name) of contract business and in the civil division of the power sector, a shrimp farm worth not less than TK 1 crore on 26 kathas, and has bought cultivable land in Khulna and his village home Patuakhali, both using two commercial meters without paying any bill. During a new connection of another meter, the distribution office sealed his meter, but he was still using used electricity by breaking the seal of the meter (Key Informants).

i) he is, or any of his dependants or any other person through him or on his behalf is, an possession (for which he cannot reasonably account) of pecuniary resources or of property disproportionate to his known source of income, or
ii) he has assumed a style of living beyond his ostensible means or
iii) is engaged, or is reasonably suspected of being engaged in sub-versive activities, or who is reasonably suspected of being associated with other engaged in sub-versive activities, and whose retention in service is, therefore, considered prejudicial to national security."

Though, as per the Service Rules of 1982, there is a provision for prosecuting the corrupt staff members, only 10 percent of the allegedly corrupt staff members of the PDB are prosecuted.[38] Unfortunately, not a single employee among the hundreds of allegations submitted to the PGCB is prosecuted. In DESA, except for a few recent cases, there have been very few cases of punishment against the corrupt staff members. In the 'name of system loss', the rampant theft of power in the PDB and DESA has made the industry a losing concern and a burden for the Govt. Due to a lack of commitment of the staff and the CBA, the PDB and DESA have become the 'crippled or dead horse' of the nation, and the country has to suffer huge power crises. Despite all of this, the rate of punishment is still low. Though Clause 44 (ka) of the 1910 Act ensures the provision of prosecution against the officer/staff members who is proved to be engaged in any electricity theft, in reality it is hard to find a case to prosecute any member staff of the PDB/DESA/REB for corruption or malpractices. Clause 49 (ka), however, is frequently applied and thousand of consumers are charged with electricity theft.

The example of a corrupt store keeper makes the rule vulnerable. There are several provisions for penalties such as censure, withholding (for a certain period) the employee's increment and promotion; demotion (to a lower post); recovery from pay to compensate for the whole (or part of) loss due to negligence or misconduct; compulsory retirement; removal from service; and dismissal from service. However, in reality, these are not effective.

The following constraints are hindering the process of punishment of the convicted consumers:

- Till the '80s, the 'Detective and Investigation' department of the PDB was effective in prosecuting the corrupt staff members, but since the early 90's, the DI department has been inactive.

[38] Former Chairman of the BPDB, January 2007

- Absence of a central database of the allegations submitted and the actions taken against the staff members.
- Connection of corrupt employees with the CBA and other corrupt higher officials
- Unjustified or negligible punishment (financial or physical) of the corrupt staff[39]
- Absence of effective administrative and financial accountability of the higher officials

3.2. Unbridled Irregularities by the staff and the CBA

A. CBA leaders and their 'Unbridled' corruption

As a bargaining agency, the CBA has been playing negative roles in all sectors. Though these organizations are legitimized to bargain with the higher authorities in favor of labor, unfortunately, the leaders, in connection with political organizations, are now being used to seek rent by a vested interest group. CBA leaders intervene in the appointment, transfer, promotion of employees, as well as the assignment of contracts. In addition they give shelter to corrupt staff members at the payment of 'bribes or commissions' of Taka 3 to 4 lac from each HT connection. Several CBA leaders of the DESA and the PDB, who have become millionaires, were also the policy makers of the two biggest political parties.

B. Ill practice in transfer mechanism

Due to a lack of efficiency and inadequate commitment of top management, illegal practices in transfer and promotion have been identified: i) Management cannot even transfer the third and forth class employee without CBA's clearance', ii) CBA creates pressure on the Board to transfer the staff of the opposite group/party for their own interest; and iii) since the administration cannot transfer the staff members, they become engaged in corruption and are not uncountable to anyone.

C. *Illegal appointment of casual labor process by CBA leaders*

CBA leaders intervene in the recruitment; in most cases, they hamper the functioning of a fair and transparent process. The ruling party CBA gives a list of the final selection of employees that cannot be overlooked. On the other hand, in the recruitment of the 4th class staff, the CBA provides the list of candidates to be appointed for rent-seeking purpose. Several claims have already been identified concerning the appointment of the 'Assistant' to the Meter reader and lineman. In the Chitatgong PDB area, the meter reader appointed 'Bode Alam' as his helper. And in Chittagong, 'Ghatish' was identified as the name of helper or proxy. Though CBA claims to fulfill the 'vacant post' as per 1971 organogram, but 1537 staff members are currently working as 'temporary staff'.

[39] in article 139 there are several options of giving punishments

Box 13: A 'Bode Alam' is now 'a millionaire CBA leader'

A 'Bode Alam' is now a millionaire CBA leader through corruption and muscle power. He started to work as a 'Bode Alam' of a meter reader in Agrabad S & D office in 1983 and worked till 1985. With only his SSC degree, he has been working as a Switch Board Operator (SBO) though, the HSC is the minimum required for this position. This CBA leader has now become a more powerful and rich man of Chittagong PDB office. He has been engaged in several anomalies and unbridled corruption as discussed below:

- He has been working in the same place for the last 22 years; he was once transferred, but returned to the same place within three months.
- In 2003, this SBO became the CBA President of the Chittagong PDB; since then , he has practically, been controlling the activities of the Chittagong PDB through using '*mastans*' including SBA, junior accountants, MR, and linemen in the name of the' *Seven Star Chowdhury Group*'. Influential CBA leaders use him to pursue their interests.
- He also controls the area-wise distribution of meter reading; among the 120 meter readers of the Chittagong PDB, appointment, promotion, allocation of quarter have been made among the 'staff closest to him'. He also engages 'personal people' in primary contracts, allocation of quarters, and each meter reader pays him a 'bribe' a monthly basis in order to get extra benefits. He used political attachment to promote 200 junior staff members including promotion of 30 helpers into the SBA and earning a million Takas; One DD and one UDA helped him to settle the issue of the debatable `mass promotion'.
- He enjoys 200 – 250 hours as overtime without working though as technical staff no none is entitled to enjoy more than 32 hours of overtime per month,. But the higher authority cannot take any action against him out of fear for their lives.
- He used illegally two Govt. vehicles of Halishahar division for his personal and family use;

Source: Daily Samakal, March 2007

D. Irregularities in the uses of entitlements of the staff

Several irregularities are found in the official benefits and entitlements such as the withdrawal of overtime pay without work, the misuse of electricity consumption, office vehicles and phone; the theft of oil and graft of public money by drivers and office staffs through the submission of fake vouchers and bills for repairing and purchasing vehicle related equipments. Besides, the CBA also intervene in the usual process of allocating residential facilities for the staff. A short overview on the several acts and rules formulated and prepared for efficient operation of the power sector is provided below.

3.0 The Government's efforts to increase the capacity of the power sector

Since 1996, two Governments have tried, in discrete ways, to meet the dynamic increase of demand from 500 to 800 mw per year. To meet this excess demand for power, the Government initiated reform measures toward the corporatization of the sector ensuring the participation of private investment through the private power generation policy, adopted in 1996. Due to the effective initiative of the Government, private investments increased magnificently in the mid 90's.

Since early '90s, there has been a paradigm shift regarding state-run businesses; the idea was that the government should govern and should leave everything else to the people. With this view, the donors stopped

Box 2: Haripur 360 mw power project under SBU and Meghnaghat Scheme

PDB dealt with the Meghnaghat and the *Power Cell* was assigned to bring the efficiency of the major Public plant - the Haripur 360 MWMW plant under the SBU scheme. Primary result in case of efficiency gain by Haripur was impressive and by May 2001, the Haripur plant started partial power production and went for full production later that year. This scheme gave the country the cheapest ever power. A competition among two government agencies took place. .

In case of Meghnghat, US Company AES again won the bid by offering a levelised power tariff of 2.72 cents. This Power Purchase Agreement (PPA) and other agreements of this project were signed in late 1998 and the site was inaugurated on May 1999. But, PDB Chairman during that period claimed that AES pursued additional $ 5 million for the land site development through corrupt means.

funding power projects in Bangladesh and pushed the government to create space for private sector investment. This pushed the power division to move towards introducing Independent Power Producers.

Faced with a bleak power scenario, the government in late 1996 opted for comparatively expensive private sector barge-mount plants as a quick solution, and the PDS initiated the long-term solution such as land based bigger and more cost effective power plants. The last political government (2002-2006) planned to add 1300 mw of private power within the next five years. At the same time, the government was also implementing some public sector power projects under the controversial Supplier's Credit scheme. Besides, the Government also took several steps[40] to push the generation and distribution. Though an effective PSMP was prepared with the projection of the emerging demand for power and a transparent, bidder friendly and corruption free procurement manual, and the reduction of system loss by a significant rate, during that period the Govt. failed to ensure an efficient deal with the barge mounted case. As a result, the PDB is still losing millions of dollars per year due to irrational PPA, which is mostly paid @ US dollar.

Box 3: Several Reforms in Power Sector (1996 – 2006)

National Energy Policy	: Jan'1996
Private Power Generation Policy	: 1996
PGCB and DESCO	: 1996
Policy and Vision Statement	: 2000
Ashuganj Power Company Ltd.	: 2002
Western Power Distribution Co. Ltd.	: 2003
Regulatory Commission Act	: Mar'2003
Decision on BPDB as a holding company	: Jan'2004
Financial Restructure and Recovery Plan	: Aug'2006
Third Year Road Map	: Sep'2006

Source: Power Cell, February 2007

The benefits of lowering price (tariff), enhanced services, increased economic efficiency and innovation need to be addressed. For this, BERC can work and conduct public hiring and compile comments to evaluate the pros and cons of the reform. Though the reform measures were initiated in 1994 to make the sector more efficient and productive, due to the shortage in supply, the current demand-supply gap has become worse in terms of the availability of power and the quality of the supply.

Along with the several reforms made during 1995 to 2006 as well as the steps of previous governments[41] and current care taker government[42] to improve the efficiency of the power sector people have been facing overwhelming shortfall of power which will be a total of around 3000 mw in coming 5 years.[43] Major efforts of the current Care Taker Government are below[44]-

- Cancellation of the tendering process of small power plants addressing the allegation of non-transparent process and attempt for re-tender.

Generation

- Under the "Private Sector Power Generation Policy", a power station having the capacity of generating 1230 MW electricity has been installed
- Ashuganj Power Station has been converted into a corporatised entity

[40] Chittagong's 210 mw second unit started its commercial operation, established two 100 mw Barge Mounted plants in Khulna and Haripur, formed PGCB to ensure the reliable transmission system and Dhaka Electricity Supply Company (DESCO); 6th unit of the Ghorashal 210 mw plant was commissioned on a test basis in January 1999; a contact was signed to establish the 6th Shahjibazar 60 mw GT power plant in 1999, an initiative was taken to establish a 100 mw plant in Baghabari under Government finance; it was first decided to establish a Barapukuria coal based power plant, to construct Kabirpur-Tangail-Sirajganj 132 KV line and an 18 Town electricity project

[41] took steps were below- i) converting the PDB into a holding company, ii) bringing Haripur and Baghabri power into the Strategic Business Unit (SBU), iii) reforming the Ashuganj power station into a ltd. company, iv) forming the Shiddirganj power station as the Electricity Generation Company of Bangladesh, v) forming the West Zone Power Distribution Company, and vi) introducing a modern distribution system including the restructure of the SBU of the distribution circle.

[42] During 11 Jan'07 – Onwards; the then advisor of the MPEMR commented that Bangladesh would be free from load shedding by 2010 and the Govt. would generate an additional 229542 mw by the next three years.

[43] Expert in Power Sector

[44] http://www.mof.gov.bd/mof2/budget/07_08/economic_review/chapter_10.pdf

- Electricity Generation Company of Bangladesh (EGCB) has been established to implement, own and operate the proposed 2x120 MW and 2x150 MW peaking power plants at Siddhirgonj and 360 MW combined Cycle Power Plant at Haripur. Existing Power Plants at Siddhirganj and Haripur will be owned by EGCB in future.
- Identification of major targets to rehabilitate and maintain the power station, and sign of treaties to establish both public and private power plants. Unfortunately, it is alleged by local power company that the aid providing agencies have put several clauses in the bid manual so that they cannot submit the bid papers fulfilling the conditions.
- Approval of five IPPs (three foreign companies) of 1,930 mw capacity, increasing the share of IPPs in the total power generated up to 3,190 mw (62%). Unfortunately, no significant decision has been taken yet to identify the leakages and rampant theft of power.

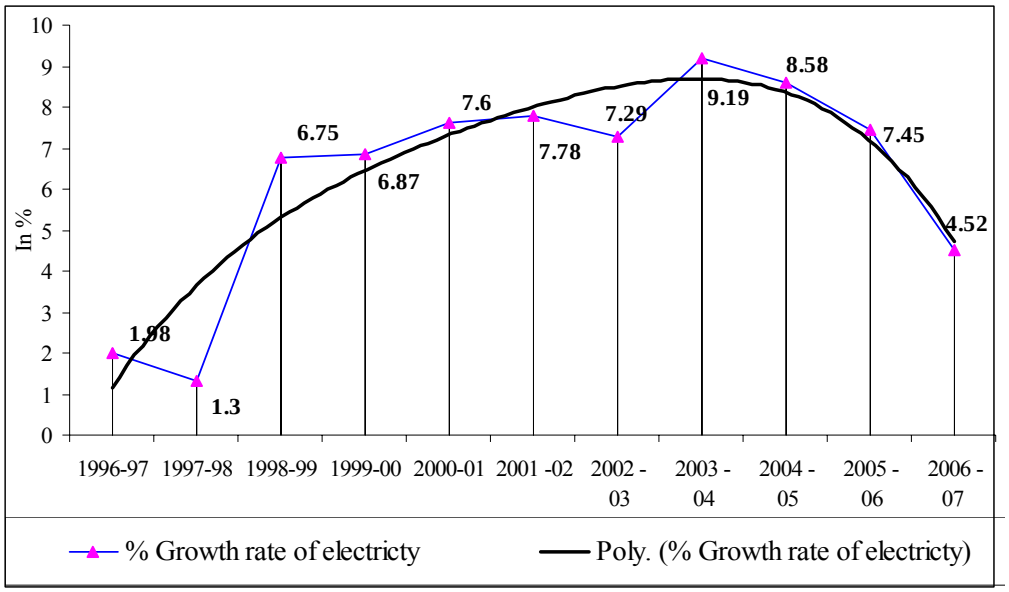
Transmission

- Power Grid Company of Bangladesh Limited (PGCB) has been created in 1996. All the transmission assets (100%) including Load Dispatch Center (LDC) have been transferred from BPDB to PGCB.
- PGCB offloaded its 25 percent share to public through capital market in 2006.

Distribution

- Boundary of DESA redefined. All areas of DESA outside redefined boundary handed over to 8 PBSs. DESCO was established in 1996 and is now functioning at Mirpur, Gulshan, Baridhara, Uttara and Tongi area of Dhaka by taking over assets from DESA. DESCO offloaded its 25 percent share to public through capital market.
- Corporatisation of North West Zone Power Distribution system and South Zone Power Distribution system of BPDB is under process
- Programs have been taken up to introduce pre-paid metering system at Chittagong, Sylhet, Sirajgang and Bogra under BPDB, at Lalbag under DESA and at Uttara under DESCO to increase revenue collection.
- ATM Card introduced for payment of Electricity Bill in Dhaka and Chittagong
- "Remote Area Power Supply System (RAPSS)" programme has adopted to bring the people of remote areas of the country under electricity implemented by the private sector.

Figure 1: % Growth rate of electricity sector in Bangladesh



Source: Bangladesh Economic Review, 2007

BERC and Other

- Appointment of two members for the BERC and development of several guidelines along with the methodology of the determination of power tariff. However, in this methodology, the peak and off-peak demand was not considered. Besides, there is no vivid guideline from BERC on

how submitted documents and information by applicant IPPs would be cross-checked and the previously completed contracts between PDB and IPPs are out of the proposed formula.

- Under the contnous pressure of ADB earlier with the loan for To convert DESA into Dhaka Power Distrbution Company (DPDC) with the effects from 1st of July'08 though the Chairman of Board will traditionally be Energy Secretary, which is contarcdutory with corporate strategy[45]

Though the above steps were taken to improve the power supply, there are several governance failures, unbridled irregularities, misuse of funds and a lack of accountability which have placed the country as well as the future efficiency of the power sector in a vulnerable situation.[46] In a whole the contribution of electricity sector has been declineing over the last years (see below figure 1).

3.3. Major governance failures/problems around the electricity sector of Bangladesh

According to the ADB (2005), "Consumption of electricity in Bangladesh grew at an average annual rate of 8.2% from FY 1994 to FY 2004 and forecast is to grow at an annual rate of about 8% for the next 10 years." Since the early 1990s, the supply of power went down and system loss shot up and the frequency of load shedding increased vigorously by the middle of the 1990s. In this situation, the Government proposed the National Energy Policy in 1995, but this also failed to meet the crisis and finally Power Cell formulated the Private Power Generation policy in 1996 in order to boost the generation of power.

3.4. Legal Aspects of the Power Sector

- *Dhaka Electricity Supply Department Act, 1990 (2)*[47]

This act was introduced in 1990 for the purpose of properly managing the supply of electricity for the greater Dhaka area. The objectives included the sell, the supply of electricity to the area of greater Dhaka; the supervision and extension of the electricity supplying system; and the provision of all sorts of support related to the supply and distribution of electricity among urban consumers. Unfortunately, due to DESA's poor performance, it is gradually losing its service area to DESCO.

- *The Power Development Board (Employees) Service Rule, 1982*

Under the Ministry, the Power Division has prepared this service rule to manage the recruitment, promotion, allowance and honorium, traveling allowance, other benefits, general conduct and discipline, punishment and appeal and other human resource related issues of the staff of PDB. Though this is dated it includes several provisions to make the staff accountable; in reality, however this rule was found to be hard to implement in the case of corruption by the staff. In the section on the diagnosis of human resources, the nature and limitation of mal-practices by the staff have been addressed.

- *Electricity Act, 1910*

The Power Division functions as the Regulator on the basis of the Electricity Act, 1910; and according to this act, it approves investment programs, monitors the performance of the public sector entities/utilities, approves tariff, appoints electrical advisers and the chief electrical inspector (CEI); "CEI performs duties as regulator on behalf of the govt. to provide supply license, provide approval for captive generation, set up security & safety standards and approve electrical installations for safety measures, perform testing & inspection function of electrical installations for security & safety, presently no government provision for stakeholder participation, like public hearings, in the tariff approval process, no scope of appeal to the court against Govt. decision".[48]

Besides, this act is practiced in the working areas of all construction works; supply, transmission and use of energy by non-licensees; protective clauses; criminal offences and procedures. A

[45] As per earlier contract of ADB with Govt. to prvide fund to project on Power Sector Sustainable Devemopment Project (PSSDP) in 2007, ADB made a condition to disburse fund against the convertion of DESA into DPDC and the number of Board emmber would be 11 and the current staff would be reduced from avobe 3000 to 2800. Note that DPDC was registered as company in 25 Oct'05.

[46] Former State Minster For Power Division, The Daily Star, 30 July'06

[47] Act No. of 36, 1990

[48] Power Division, 2006

supplementary Act was made in 2004, but this was not modernized adequately with respect to the diverse nature of governance failure and offences in the current age. The limitation and mal practices regarding this act are addressed in the diagnosis section on failure.

- *Limitation of the Electricity Act 1910*

With respect to socio-economic situations and the nature of corrupt practices there are vast differences between 1910 and the current age. However, though very few changes were made in 2006, the 1910 Act is still the basis for all definitions and judgments. Though this act was passed to ensure equal opportunity, but equity was not considered; and as per the revised Act'06, the provision of punishment/jail[49] is quite low for the high amount that some defaulter owe, but the provision is very high for petty corruptions. That is why, in the maximum cases, the magistrates are not interested in punishing the residential poor/mid level households. Besides, only an Assistant Engineer or an upper level official can file a case against any customer charged with the pilferage/theft of electricity, whereas independent investigation cell of PDB and DESA are either absent/ineffective. Furthermore, the provision of filing any allegation/case by harassed against the alleged staff is absent and no provision for inclusion of any technical person in the judgment process.[50]Consequently, in practices, several irregularities and limitations in electricity court are observed which are below-

- Magistrates do not be oriented about Electricity Act 1910. As a result, in most cases, to understand the technical terms of electricity, the Magistrates have to depend on technical staffs of PDB/DESA officials who might be linked with the specific case of corruption in questions.
- The Magistrate of the electricity court is accountable to the Chief Engineer of division, who might be linked to corruption.

A draft of the updated version Electricity Act was considered for implementation in 1999, but it has yet to be approved and has fallen in the bureaucratic black hole and till now no significant initiative has been taken by the Power Division to re-frame the Act in light of equity and transparency.

[49] A minimum of 1 year and a maximum of 3 years and/or Taka10,000 fine
[50] [1]Clause 2, Revised Electricity Act No. IX of 1910 on February 2006

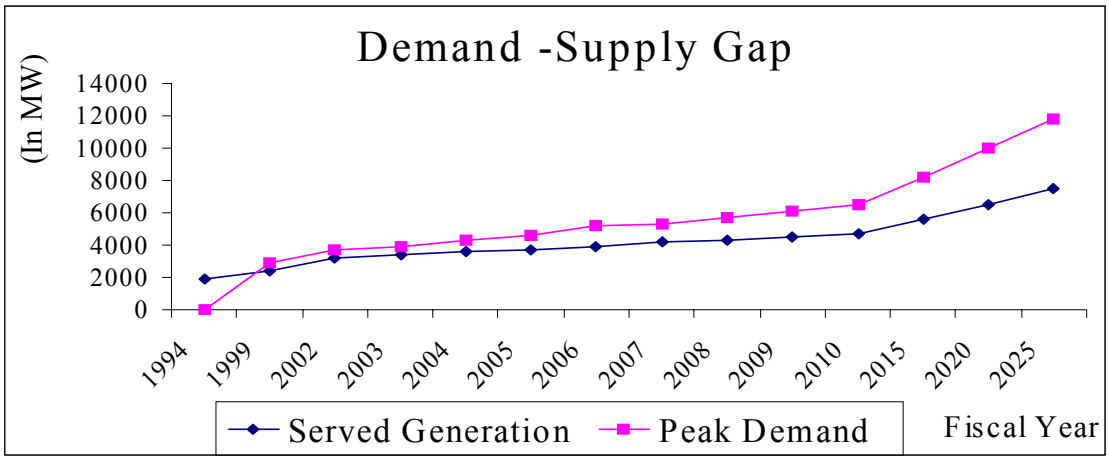
Chapter Four:

Diagnosis of the Crisis and Governance Failures in Power Sector

Adverse Demand-Supply Gap

Crisis in the power sector or the staggering demand-supply gap has emerged due to several key reasons. Since the generation of power did not increase at the rate of the increase in demand, the gap between served generation and peak demand has increased over the period shown in Figure 1. In mid '90, the shortage was almost zero, but the staggering gap[51] and the demand has been increasing around 5000 mw, but the production is only at 3346 mw mw which resulted in around 2000 mw shortfall in generation.[52] According to the PSMP 2006, the real demand was forecasted at 6200 mw in 2007, but at the same time the amount of power generation went down to 3,200 mw[53]. Furthermore, *the total shortage of power would be around 4350[54] mw in 2010 or even more than the current estimate* (shown in figure 2). If the progress of the establishment of the proposed power plants is not completed as per schedule[55]. In estimating demand, the PDB does not usually consider economic growth and the exact demand of the prospective consumers.

Figure 2: Forecasted Demand- Supply Gap in the Power Sector of Bangladesh



Source: Done by author based on PDB Data, 2006

The crisis also emerged due to the absence of a vision and mission by PDB and DESA as well.[56] According to estimate based on TIB survey (2006), the economic loss includes the productivity loss and the damage to capital machinery costs[57] is so high which reflects the cost of adverse power crisis and it has been beyond bearable now. Due to power shortage the overall contribution of electricity in economic growth has started to decline (see figure 3).

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[51] According to PDB, during 1991-1996 the demand for power was 1000 mw and the shortage was 600 mw, during 1996 to 2001 demand went up to 2,250 mw and the shortfall was around 350 mw

[52] PDB

[53] UNB, September 2006

[54] including the 10 percent increase of demand per year

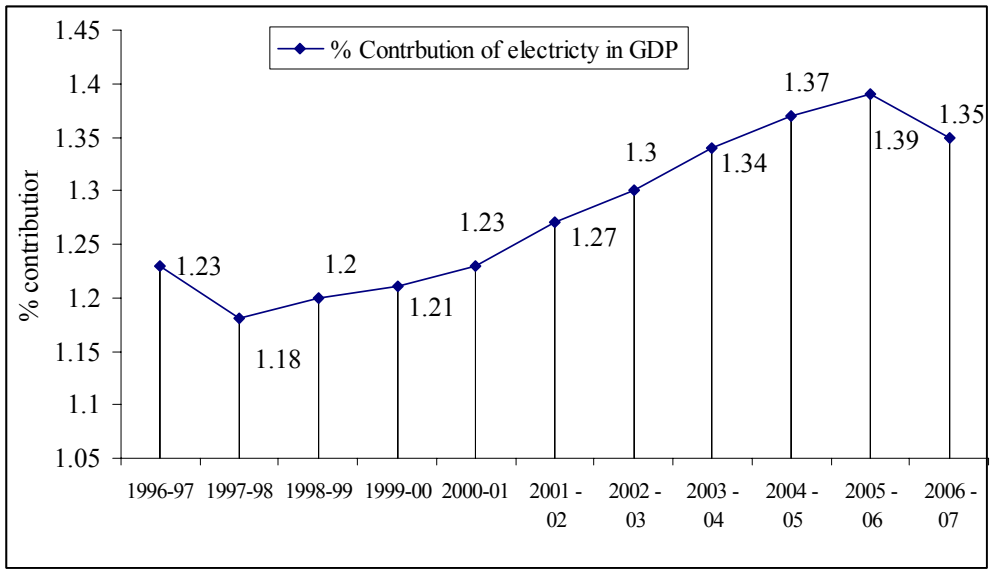
[55] Appendix A: 7

[56] PDB always shows the data what the current demand excluding the shortage and potential demand of the consumers

[57] *Damage of equipments due to voltage fluctuations=*

$\sum_{D}^{i}\sum_{C}^{j} D_{ij}$ × % Victimized Consumers; D = Distributors type (PDB, DESA, DESCO, REB or PBS), C = Different types of consumers such as residential, industrial, commercial and irrigation, i=1,2,3,--------,n, j = 1,2,3……...m

Figure 3: Percnetile contribution of electricity in GDP



Source: Bangladesh Economic Review, 2007

4.1 Cause and Effects of Power Crisis and Major Governance Failures

Policy Level

Electricity is key element to productivity and since it needs the urgent require of steps to ensure the continuation of all tasks related to power. Though several initiatives were adopted by policy makers at different period of time, but maximum cases prioritize their private interest rather than the sector's sustainable development. Though in terms of public investment electricity sector is one of the highest among other sectors but due to myopic thinking this sector is still highly vulnerable and poor capacity. And for this the major impediment is to be considered as the indecision and myopic thinking of policy makers.

Box 4: Economic loss due to power shortage and voltage fluctuations

According to TIB, the economic loss due to the unavailability of power is at least around Taka 8355.35 crore (such as due to power crisis there is strong possibilties of 4.4 lac ton potoato to be damaged of which value is Tk 660 crore as each cold storage faces around 6 – 7 hours power crisis). It is noted here that the damage to capital machinery costs around Taka 1837.4 crore alongwith Taka 327.68 crore in DESA, and the highest degree of damage is caused by the REB/PBSs as there are several industries running on REB lines. According to a CPD and World Bank study, though there is a difference in number, the reported amount of loss is high enough to lower the GDP growth rate as there is multiplier effect of any power outage. Besides, we did not take into account the loss of agricultural production as well as all small production units in the estimation of losses.

Though several positive steps have been adopted to convert the PDB into a holding company and expansion of the transmission lines, due to inadequate commitment, this sector has become vulnerable and even burdensome for the economy. Unfortunately, its performance was not satisfactory in terms of taking sharp decisions regarding the procurement of new power plants and increasing the sector' efficiency.

The major failures or governance problems at policy making level are addressed in Box 5. The Power sector is such a dynamic sector that it requires clear organizational goals or objectives and the strength to take sharp decision. The BPDB is solely responsible for the planning, designing, implementation, maintenance and rehabilitation of the generation, transmission and distribution of the power sector.

Table 3: Visions of Power Division and Realities

Visions	Status/Realities
To make electricity available for all by 2020	Only around 40% of the people have received the electricity connection in the last 35 years
To ensure reliable and quality supply of electricity	People are facing huge crisis
To provide electricity at a reasonable and affordable price	There is a significant difference in the tariff paid by rural and urban consumers
To reform strategy or segregation of generation, transmission, and distribution into separate services	There is no specific guideline and consensus about the future reform strategy, regard to corporatization or unbundling
To corporatize and commercialize of the emerging power sector entities	Still undetermined
To establish the Regulatory Commission	It is still not as effective as expected as earlier
To enable private sector participation	2/3 of the total generation is contributed by IPPs
To Introduce a cost-reflective tariff structure by the government	Due to severe power shortages people are unwilling to pay more for the less consumed amount;
To develop demand-side management, including energy efficiency measures to conserve energy	This issue has been discussed in the section of distribution system
To develop alternative/renewable energy sources	Since the current gas reserves of gas will be depleted by 2012.

Source: Power Cell, 2006

In reality, however, the PDB and DESA do not have clear organizational goals. As a result, there is always a sense of confusion between policy makers and the management. This hampers the productive growth of the sector as well as its day-to-day services. Besides, it holds assets worth of around Taka 12,000 crore, where as the PDB Chairman has the financial power of up to only Taka 25 Crore, which is very low with respect to the price of the equipment needed to tackle an urgent requirement. Due to its inadequate financial power the plant management cannot purchase any equipment even if it is necessary to run the plant smoothly; the plant manger has no financial authority to spend even Taka 100 without consultation with the higher authorities.

PSMP is also considered to be a clear guideline for policy makers of the power sector to help estimating the local resources countering sustainability and the energy security of the country as well.[58] Under the guidance of aid agencies, Power Cell adopted the PSMP primarily for the projection of future demand and the optional mix of different plants such as the CC, GT or SC plants.

Box 5: Nature of problems at policy level

- Absence of clear sectoral as well as organizational goal
- Donor driven reform measures/process and its inefficiency
- In the name of crisis management, emphasis on short-term planning
- Ignoring the PSMP especially on the forecast of increased yearly demand
- Inadequate autonomy in financial and administration decision making level
- Lack of proper expertise of the concern project offcilas to guide the foreign consultant and their work
- Imbalance expansion of distribution lines
- Extra-ordinary absolute power and absence of accountability
- High dependency on the tight conditional foreign loan, poor concentration to local investments
- Favor to foreign investors by policy makers and their link to corruption
- Delay in taking decisions
- Ineffectiveness of Bangladesh Energy Regulatory Commission
- Absence of professionalism, reward and punishment procedure and frequent changes of high officials
- Corruption and anomalies at the Policy Level

[33] Deputy Director of Power Cell, MPEMR, June 2006

Finally, in 2005, the government started realizing that the adopted steps which were not effective in facing the crises in the power sector. Though such a realization should have made the government place the highest emphasis on undertaking the right projects through a fair process, it continued to play the wrong role- allowing the vested interest groups to dominate its decisions. This became evident from the late 2005.

Though the electricity sector is the most integrated and it demands the strong co-ordination, but under the guidance of World Bank and ADB govt. started to unbundle the several ports of power sector into different companies, but govt. did not have any long term plan and actions to ensure the required generation and other related development projects. Policy makers are more interested to take projects which will help to pursue the so-called popularity as well as will create scopes for rent seeking. Most concern is no lack of inadequate autonomy and ineffectiveness of watchdog agency BERC.

Corruption and irregularities conducted by policy makers

In the name of crisis mitigation, such *dubious contracts* were signed by the Govt. officials under the guidance of the Minister and other policy makers. Several governments including the current care taker government ignored/failed to ensure the establishment of power plants to meet the demand 8 to 10 percent increase in the demand for power every year. Regarding appointment of foreign consultants, a former State Minister for Power Division claimed that *huge amounts of foreign currency have been drained out to maintain the foreign consultants appointed for Raujan and Bara Pukuria though local talents are available to appoint in the same purpose* and unusual means of appointing consultants to the LIPPS[59] for RPCL is a prominent example.

Table 4: Areas of inefficiency, corruption and irregularities identified

Issues/Activity	Identified areas of corruption/irregularities	Remarks
Decision Making	Taking decision in favor of vested interest group following collusion, no time limit for taking final decision and bureaucratic tyranny, no/poor accountability for violating time bound or making delay, long-term contract with IPPs to supply gas at subsidized rate[60]	Sector has been vulnerable day-by-day and all productive activities are loosing competitiveness
Estimates of additional demand per year	Manipulation of the estimates ignoring the expert's opinion and demand analysis[61]	Repeating phenomena at each govt. period
Preparation and execution of PSMP	Biased/politically motivated selection of site for power plant, choice of rental plant in the name of crisis management, violating PSMP/guideline of establishing different combination of plants section another type for rent seeking. Ignoring local experts' in preparation	PSMP 2006
Hiring consultants	Dumping of disqualified experts by international financing agencies, appointment of lower qualified experts even local talents are available to appoint in the same purpose[62]	Rauzan power plants, Barhapukuria coal plant
PPPA, Formulating power pricing formula, and Determination of Capacity Charge	Manipulation of the formula in favor of IPPs, offering higher tariff rate (non-competitive) to the IPPs at the payment of bribe, estimating higher man-months	Ignoring peak and off peak demand in pricing issue, PPA with RPCL and Haripur 360 mw
Estimate the additional capacity, site selection as well as development	non-transparent process of demand forecasting, favoritism in the site development at higher rate or excess money	PDB was penalized in the case of site development of Meghnaghat IPP

[59] Lahmeyer International Pollee Power Services Ltd

[60] According to clause 3.5 of the PPG policy, fuel would be provided by the GoB at a subsidized rate to IPPs, which have been incurring losses. The Government has to account for the losses equivalent of pay Taka 440 crore for providing gas at a subsidized rate, but there was no guarantee clause in IPP policy to provide gas as subsidized rate. Besides, due to long term guarantees of providing fuel to IPPs such as Westmont and NEPC (15 years), Haripur (22 years), the loss will be increased cumulatively over the coming years of increasing demand.

[61] Under-estimates results in crisis and vested interest group abuse this crisis (as opportunity) to justify the crisis management to purchase electricity from expensive sources such as rental power plant

[62] "The former Secretary tried to expand the contract further with 27 Chinese engineers at Taka 11 crore for several years and he also sent the proposal in purchase committee. To make this proposal justifiable, the concerned Secretary claimed to have no local experts with practical training, but later the former State Minister found 22 with training in maintenance".

Issues/Activity	Identified areas of corruption/irregularities	Remarks
Selection of higher/top management and appointment as well as action against utility staff	Appointment considering political/personal choice and at the transaction of bribe, dumping of political workers by CBA as staff of utilities, manipulation of selection criteria, not taking action against alleges staff considering political connection, restriction on appointment by corrupt staff especially at commercial operation level	Ongoing appointment process for years after year
Expansion of distribution network[63]	Expansion of distribution network for rent seeking by vested interest group[64]	REB expended 1,24,231 km lines with increase of 1.5 crore consumers to 3 crore and it deepens the power shortage at rural areas
Intervention of policy makers at Procurement	Intervention of vested interest group collusion with the politicians and bureaucrats	Suspension of the procurement of the Sirajganj power plant

Instead, the government succumbed to the ploys of a section of unscrupulous bureaucrats and experts and an emerging vested interest group of the ruling party, which started taking immense "commissions" for project approval. *The proposed power plants both in the public and private sectors can't start its operations on time*. This will deepen the crises in coming days. The current progress of procurement towards the establishment of new plant is not compatible with the proposed schedule for commissioning and consequently the probable commissioning dates will be delayed by 2 to 4 years in case of each plant.[65] Besides, as a large entity of the power sector, the BPDB has failed to perform efficiently due to inadequate capacity with regulatory, financial and other procedural constraints.

According to the PPR 2003, the tender process is conducted in two stages; the technical proposal has to be submitted first and then the financial offer is opened. If the bidder is qualified technically, then the financial paper is opened; otherwise, the offer is ignored. Unfortunately, in significant cases in Bangladesh, the procurement can't be processed without intervention of the vested interest group. The major source of corruption is the action of the politicians and the staff members related to procurement, who is supposed to play an ethical and the significant role. However, this intervention and bureaucratic dilemma instigate the delay in the establishment of new plant at scheduled time.[66] Due to the rapid increase in the demand for electricity, the Government of Bangladesh approved the private power generation policy to increase power generation, and aid-giving agencies are more interested in the scope for financing with regard to IPPs rather than the public sector.[67] Due to absence of accountability at all level and vested interest group the corruption has been rampant and deep rooted. In several cases, it is hard to find out the nature and extent of corruption in estimation, allocation and procurement process In case of win-win situation.

[63] Power Division allocated around $915.78 million63 to improve electrification andother development of the power distribution system, the upgrade of the distribution system. About 10 years ago concrete pole was supplied to REB by only company, but the rampant corruption started at 2004. A cartel among the incumbent 'K' company with the existing 'J' added the clause of 'minimum two years of working experience' as a pre-condition for new bidder by the Parliamentary Standing Committee with full participation of the members. Avoiding the decision of Cabinet, REB bought the pole at minimum 20 to 25 percent high rate from a syndicate of companies. They did business under the collusion with some officers of REB. Each year around 5 lack poles were purchased by REB.

[64] beyond capacity to provide electricity

[65] Appendix A:6

[66] It is noted here that based on the white paper on corruption 2001, the procurement related jobs were suspended in Bhola 20 mw project (which was being awarded to Harbin), Khulna's 210 mw project under a Chinese supplier's credit, Sylhet's 150 mw CC plant (supplier's credit), Bheramara's 450 mw CC plant (supplier's credit), the 210 mw Siddirganj project under Russian supplier's credit, and the land development of the Meghnaghat Project.

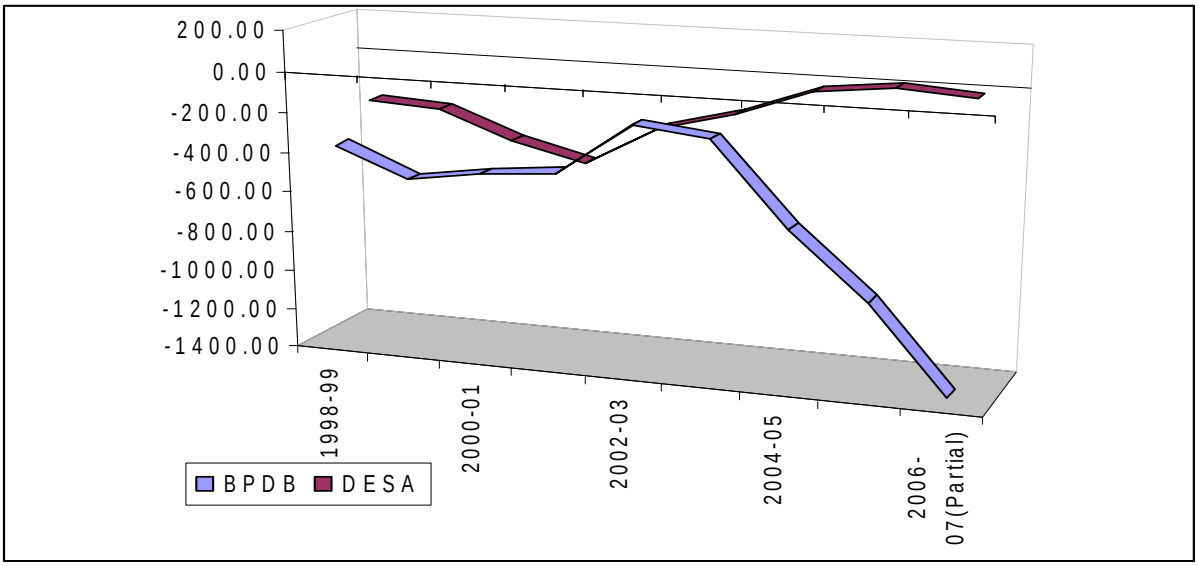
[67] In case of procurement of public plant the Power Division usually opts for this best equipment and in the case of IPP, its responsibility is only to select the specific company which offers the lowest tariff under the PPA.

Inadequate/Poor Financial Capacity of the sector/electricity distributors

The power sector is required to invest around Taka 17,000 crore up to 2010 to meet the demand for power up to around 8000 mw by 2010[68]; in reality. However, the PDB, DESA and REB, if audited correctly, will be found to be financially inadequate due to cumulative losses and huge amounts of outstanding payments. According to the Finance Ministry, "due to huge system loss, the cost of production increases relatively and this increases the Long Run Marginal Cost (LRMC), which is 20 % below the BPDB tariff and 32% below for DESA which covers a nearly 300 square kilometer area around Dhaka with 6 lacs 13 thousand consumers. Officially its peak demand is 1150 MW and its increase rate is 8.8%."

Besides, the Government had to spend an additional Taka 1150 crore up to 2006 due to the obligation to maintain the tariff of power purchase which was made an agreement with IPP at dollar currency. Ironically, the volume of investment in this sector started to decline in 1973 and it has been decreased from 84 to 70 percent of the total allocation of the power and other renewable energy. As a result, every year this sector has to borrow from the Govt. to survive, creating another financial anomaly. The major constraints to the financial viability of this sector are low-import collection ration.

Figure 4: Financial performance of the distributor agencies



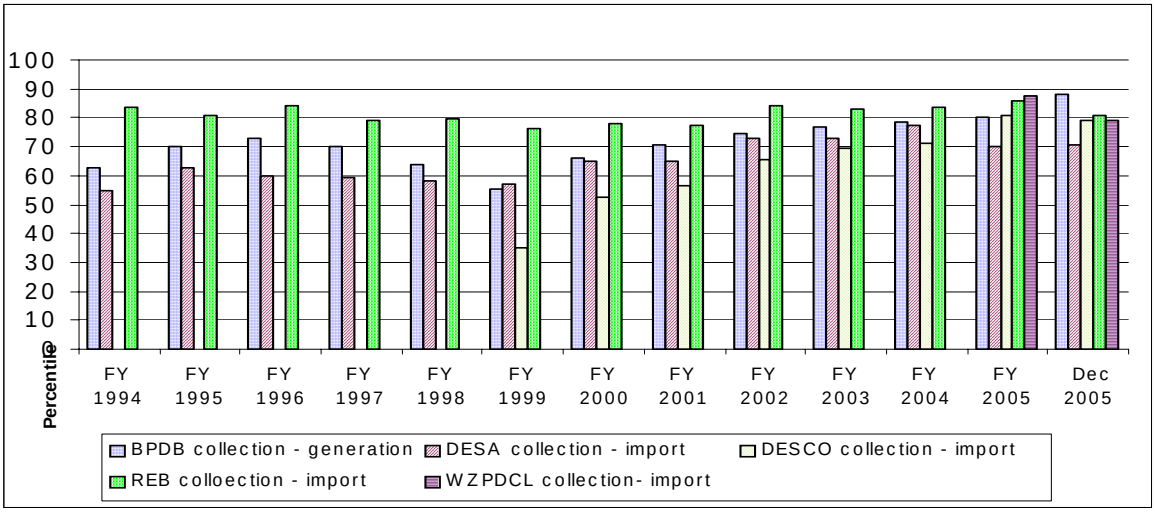
Source: Bangladesh Economic Review, 2007

The official staff, appointed in revenue collection, is engaged in meter tampering, line bypassing and providing illegal connections. Among several developing countries, Bangladesh scored unsatisfactorily (only 1 out of 6), and though several steps have been taken to reduce theft or T & D loss and increase the overall efficiency in this sector, the target has remained out of reach. Electricity distributor agencies cannot cut off the lines of certain consumers, especially Govt., autonomous and influential private customers, who are the major bill defaulters of the country. Sometimes, the private defaulters take the shelter of the High Court by placing an injunction order upon the supplier to ensure an uninterrupted power supply without the payment of bills. There are several bill defaulters in the PDB, DESA who have not paid their bills for the last 15 – 20 years. In the case of the REB, the gap between the bill receivable and bill payable amount has been increasing over this period, starting from FY 1999[69].

[68] USD 2388 million as per the proposed PSMP 2006 to expand the generation capacity up to 7,986 mw by 2010 and USD 13,050 million up to 2025, Draft Final Report: Component B: PSMP, 2006

[69] Appendix A: 10

Figure 5: Sub-optimal Collection – Import Ratio



Source: BPDB/ADB, June 2006

The Govt. and other autonomous agencies is the major bill defaulter[70]. Though DESA and other distributors purchase electricity from PDB but it has no power to adopt any measure to make DESA accountable to pay the outstanding bills. DESA is major defaulter, owing the PDB an amount of Taka 2795.01 crore from October 1991 to June 2005.[71] Upto December 2006, the accumulated receivable amount of PDB is Taka 38,840.25 million. If this sum is paid, the power crises can be solved without any loan or credit from aid agencies. Though several efforts[72] have been made toward the recovery of the unpaid bills, the situation has remained the same. PDB and DESA are incapable of taking any action against the public and semi public bill defaulters. Besides, the intra-agencies co-operation sometimes become critical; some urban areas are now transferring to the PBSs, but sometimes, due to bureaucracy and a lack of co-ordination, the GoB is deprived of the revenue.

Due to the abandonment of all surcharges and instantaneous efforts, the outstanding bills of Government agencies, autonomous and semi-autonomous bodies have been reduced.[73] In fact, there is no other valid reason for DESA's current state as it sells electricity at a higher rate than the rate at which it purchases power from the PDB.

[70] Economic Review, 2006

[71] Bangladesh Economic Review 2006, page 100, Table 10.7

[72] According to ADB (2006), "*As of 30 June 2002, arrears owed by Government ministries were estimated to be about Taka 3.30 billion and those owed by the Government's autonomous and semi-autonomous bodies about Taka 6.80 billion*". To settle the bills owed by Government agencies, a senior inter-ministerial meeting was held on 23 March 2005 and the decision was taken below –
Ministry of Finance (MOF) would arrange the allocation of additional funds for the Government ministries and divisions through a combination of cash payments and accounting against debt service liabilities to reconcile the outstanding of DESA and DESCO, Under the supervision of the Ministry of Power, Energy, and Mineral Resources (MPEMR) it would continue to reconcile the outstanding and inform MOF of the results for settlement; In the future, outstanding amount should not exceed 3 months' consumption, and all the Government ministries and divisions should ensure regular payments; and following settlement of all past dues, ministry would develop and implement a work plan to avoid accumulation of dues. Though those efforts the cumulative amount of receivable amount of PDB has been increasing and due to absence of commitment and CBA's intervention there is no significant change is observed among agencies to overcome this liability and to enhance the financial capacity of the PDB.

[73] from about Taka 3.3 billion as of June 2002 to about Taka 1.2 billion in June 2005

Table 5: Causes of poor financial capacity of the power sector

Issues/Activity	Causes/Effects	Remarks
Low-import collection ratio	High T & D loss, unaccountable as wel as taking legal shelter by huge bill defaulters, Cumulative increase of unpaid bills, Intra-distributors Co-ordination Failure74, Low consumer density in PBSs	Around Taka 18930.04 crore or worth of 6000 mw of power plants has been theft during FY 1994 – 2005[75]
Instantaneous increase of financial burden due to contract with IPP	Due to contract on Tariff with foreign IPP at floating exchange rate payment to IPPS at foreign currency by PDB for earlier contact	PDB paid an extra amount of Taka 1513[76] crore between FY 1998 - 99 and FY 2003 -04 due to the increase of exchange rate of dollar
PPA with IPPS and tariff rate determination[77]	▪ Contract signed at an exaggerated tariff rate; an increase of Taka 0.20 for thousand mw for 10 to 15 years results in a huge incremental loss for PDB. ▪ Absence of authority of Bangladesh Energy Regulatory Commission in negotiation.	For power prices, Taka 1,300 crore has gone as implicit subsidy per year
Subsidy in all types of tariff rate	Only 40 percent people have access to electricity, poor are higher in number	residential to industrial/commercial clients)
Input costs of oil-based power stations	PDB is increasingly blood shedding by generation in diesel base power plants; absence of gas connection at western zone	The cost of generation in oil based plants ranges from Taka 6 to 12 per unit; around 10 percent of the total generation is oil based, Public power plants are frequently shutting down
Provision for local entrepreneurs in IPP policy	Marginalized local entrepreneurs; provision on tax exemption on technical know-how, interest on foreign loans, capital gains, and share transfers has pushed to build IPPs by foreigner	If PDB encourage local investors to build power station at BOOT process then it would protect drain out of foreign exchange of around 1000 crore Tk. per year
Availability of foreign loan/funding[78]	Poor capacity of govt. as well as PDB and DESA to invest in development and expansion	

Major external sources of loan/aid in the power sector are USAID, World Bank, JICA and ADB. Up to June 2006, ADB provided 1.4 billion USD, the former World Bank president[79] committed to providing USD 150 million for implementing a 240 mw peaking plant at Siddhirganj.[80] Despite the fact that aid agencies are eager to invest in the power sector, several policy makers and concerned citizens have raised the justification of putting conditions of aid giving agencies.
Among the above mentioned problems, governance failures and the reasons for adverse power crisis are diagnosed to identify the nature, causes and extent of the problems, failures, limitations and constraints at the different levels/tires of the power sector.

[74] Around 1300 consumers of four villages beside the Halda River of Hathazari Thana have not been paying the bills for the last three years. It was found that, under a project of World Bank, the PDB transferred the 3 km-long feeder line (Baruapara of Madunaghat to Madaripul) to the concerned PBS on 15 August, 2003. In this situation, the self-made local management committee filed a case to remain with the PDB, but no action has yet been taken to save the GoB revenue. (Source: PDB and Jaijai Din)

[75] Data on DESA is included upto 2003-04, Apendix:15

[76] Taka 193.22 crore to Haripur IPP, Taka 530.56 crore to KPCL, Taka 427.85 crore to NEPC, Taka 237.26 to Westmont and Taka 124.56 crore to Meghnaghat IPPs

[77] A mechanism shall be provided for the adjustment of certain tariff components to account for variations in the Taka/Dollar exchange rate

[78] such as the privatization of all publicized units, specific obligation to hire the foreign consultants, priority on IPPs, influence to specific foreign companies for power plant

[79] *Christina Wallich*

[80] The Weekly Courier, Dhaka

Procurement process of electric equipments at public sector

Though as a holding company PDB is solely responsible to procure the power plant and other equipments for reliable supply of electricity but ironically it has been degraded in investing due to poor financial capacity. Until FY 2003-04, the growth in the power sector rose up to 9 percent through the expansion of the generation capacity and a significant reduction of system loss.[81] After that period, the contribution of power in economic development has declined in the recent period due to delays in the procurement of new plants, misuse/inadequacy of allocated resources, delays in the disbursement of foreign funds and the lack of emphasis on the importance of the power sector the amount of power generation has again started to fall.

Procurement is the key process to get the best quality of equipment or instruments for any sector; unfortunately, however, "*still no standard tender documents for purchase of power plants and major stations have been adopted for strict compliance*"[82]. Several problems and weaknesses in the procurement process have been the source of corrupt practices or abuse of public money. "Except REB, most of the departments and organizations have no set rules for the approval of BD or amendments thereof. They just practice it."[83]Though it was expected that after the initiate of the PPR 2003, the mal- practices in procurement would be reduced, but in reality, however, cases still exist.

According to the World Bank (2005), the utmost weaknesses in procurement are "poor advertisement, a short bidding period, poor specifications, nondisclosure of selection criteria, award of contract by lottery, one-sided contract documents, negotiation with all bidders, re-bidding without adequate grounds, other miscellaneous irregularities, and corruption and outside influence."If a bidder wants to compete in any bidding, the company has to face several complexities, several interventions, and inefficiency in order to get final approval, which delays the process, and makes it more complicated and cost-bearing for the bidders.[84]

Shortcomings/Weaknesses, Complexities, Constraints in the Bidding Process

The recent past PDB Chair commented, "Though Baghabari power plant was purchased in a transparent bidding process but I know the equipment of Singapore made by one company and it is of a lesser quality and has stopped several times. In this situation, if we adopt Direct Procurement Method then again question of transparency would arise; even though the equipment is of best quality and the process is free from corruption." The policy makers also criticize this OTM, which has already been floated by corruption, so how can direct purchase be exempt form corruption?

Several allegations have been reported by the bidders, journalists and the policy makers with regard to the bidding process, starting from the bid invitation to the selection of the companies' bid documents. The last two political governments both failed to handle the tender process efficiently, which triggered the power crisis. Tender was invited for 18 power stations but most of the tender processes are still unsettled. The following leakages and forgery related activities were found during the bidding process:

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[81] Appendix A: 16

[82] Islam S. 2007, Electricity Sector Problems and Solutions, page 49, Good Governance Journal, June-July 2007

[83] Bangladesh Country Procurement Assessment Report, 2002, World Bank, p. 36

[84] "REB has set rules for preparation and approval of BD. In the absence of Standard Bidding Documents (SDBs) in some organizations serious delays occur in the preparation of bidding documents including specification drawings etc. WB and ADB have introduced SBDs and REB has introduced SBDs as well in PDB the BD is approved by the offices as per delegation of financial power i.e. if the officer has approval power to decide on procurement of Taka Fifty lakh, s/he will approve BD. Any changes and amendments of BD in PDB is approved by an officer of one step below as per delegation of financial power. Power Division of MEMR decides on amendment and changes in BD for procurement up to Taka 25 crore. Amendment and Changes in BD up to Taka 25 crore is approved by authority next below i.e. PDB Board."

Table 6: Complexities, Constraints and Inefficiency in the procurement process

Issues/Activity	Nature and Extent of Anomalies and Problems	Remarks/Effects
Financial capacity to invest/procurement for new plants	Decay in the growth and the financial capacity to invest in development and operations	
Estimate of the bid value and other purchase from foreign companies	Exaggerate estimation of the bid value of the new power plant and purchase form outside Bangladesh	Rural Power Company Ltd. (RPCL)
Bidding process and dispute resolution	Complicated regulation and inadequate information; in case of allegation by defended bidder/dispute arisen	
Capacity of Bid officials/ negotiator	Inadequate knowledge and training of public officials lead to improper technical and commercial evaluation, incorrect direction on tine interval issue, identification problems of the original bidder, biased imposition of penalty and punishment system applied to bidder and delay in dispute regulation	Though CPTU is providing training to the staff but, officers are seemed to be shaky in practice
Formation of Tender Evaluation Committee	Absence of uniform tender evaluation committee,	Instant appoints of inexperienced and less educated staff
Hiring consultants or experts	Bureaucratic red tapes, conditional loan and intervention in selection process make delay in hiring consultant	
Knowledge of the bidders	Bidders are found submitting incomplete bids due to inadequate knowledge and lack of experience. Sometimes, due to carelessness, the evaluator cannot detect these mistakes and fill the bid documents properly. As a result, bidders cannot identify gaps in bid security.	Inadequate knowledge of the bidders and the quoting of different prices lead to bidders filling the bidding documents in the wrong format.
Evaluation of bid documents	Linkage of corruption and irregularities with making delay (around 4 to 5 years) in evaluation of bids	Increase in shortfall of generation and cost of projects

Several bidders claimed that, according to the PPR 2003, they faced several constraints and complexities regarding the definition of several clauses of the PPR, especially the new technical terminology which is not defined clearly.[85]Any delay in evaluation helps to lobby for getting chance of corruption is high and it's usual practice, to makes delay to be commissioned of the plants.[86]

Usually TEC is formed by instant decision, and the members are selected on the basis of secretariat position; as a result, less efficient or inefficient and inexperienced/less qualified officials from different divisions are incorporated into the team. Consequently, the members, except for their participation in the meeting, contribute less, which causes delay to finalize the decisions. Besides, violation of bid validity for the submission of bid security (in case of giving penalty), and regressive punishment system applied to bidder are the major deviations from the regulations of the PPR 2003.

Since the Govt. lacks the efficient number of experts in several cases, a delay also occurs due to local pressure. In several cases, the defeated bidders file a case, submit a complaint or take an injunction from the court or embark on a media campaign to protest the allegedly corrupt bid process, though Ministry of Power orders the parties concerned to settle the dispute within a specific time.

[85] Appendix A:12

[86] Recently, "ADB has already withdrawn US $ 36.2 million from three projects including $ 7 million for the development of Dhaka Electricity Supply and $ 8 million for development of power system in West Zone on 30 June'06, alleged the delay in project works and because of inadequate transparency and Integrity Division of ADB found the submission of false documents in bidding process and finally won the bid based on the documents, getting work order of the institution without any registration". Moreover, the several weaknesses are identified in the procurement process. (Source: ADB, 2007)

Corruption and anomalies in the procurement at public sector generation

Due to the high of technical nature of the equipment and the expensive nature of power plants, general people are not educated to identify any corruption in the power sector. Due to political and bureaucratic corruption, the staff members- especially high officials of the power sector almost go untouched. In Philippines, 'deeply rooted' corruption is jacking up costs of power projects, delaying their implementation and providing Philipino households and businesses with expensive but unreliable electricity services[87]. The frequent practice of corruption at the policy level has made the power sector, as well as the country's development, vulnerable.

Box 6: Who are accountable for inefficiency operation of the Rauzan Plant

- A 210 MW steam power plant of the People's Republic of China was placed by a farm through supplier's credit, though there were strong objections concerning their unproven technology. The unit produced a maximum of 185 mw instead of 210 mw and frequently went out of service and could not be hot started; consequently, once it tripped, operators had to wait for at least 72 hours before commencing restart procedures. In spite of such frequent forced outages and other pernicious problems, a second unit of the same company was ordered with great haste, without evaluating the performance of the first unit.
- Most interestingly, no arrangement was made for the gas supply for operating the plant, and there was no transmission line in place to supply the generated power to the grid. Now 132KV line is being built from Raozan to Comilla with internal resources, having failed to utilize a KFW loan for it in 1992.[1]

Due to the official secrecy act of 1932, bidder, the media and the general citizens are not informed about the bidding process, including the method of evaluation and the marking criteria. Thus the whole bid evaluation process is exercised secretly. *Unfortunately, all the important documents on the evaluation papers are be available for the price of a bribe*. A former WB representative, criticized the bidding process by saying, "lack of transparency was evident in the proposed tender process of 10-30 mw small power projects as well as in the 450 mw Sirajganj power plant which are delayed in their implementation due to political intervention; this has led to the present power crisis." She also voiced this allegation in public after a meeting with former State Minister of Power[88].

The procurement of new power plants, the outsourcing of maintenance, and the purchase of equipment and machinery are the key sub-sectors which are more vulnerable to corruption and anomalies. Based on consultations with Key informants, several pieces of evidence of corrupt practices and allegations against corruption in the procurement process have been found. According to the decision made at the meeting between the Power Minister and the World Bank representatives, IFC (the financer of World Bank Group) will now directly get involved in the tender process to ensure transparency. Due to several cases of intervention[89], including the SPP, the current Care-taker Govt. has cancelled the earlier tender process and has asked for a re-tender for political intervention.[90]

The Review panel studied the proposals and the process; however, they cannot change the act or law, though such was done in the case of the Chandpur power plant. Besides, due to the intervention of vested interest groups the tender process of the proposed 450 MW Sirajganj power plant was cancelled twice on charges of lack of transparency.

Table 7: Corruption and anomalies in the procurement at public sector generation

Issues/Activity	Identified areas of corruption/irregularities	Remarks/Effects
Estimate/budget preparation	Over budgeting and abuse of public money by the policy makers, and government officials, were reported	

87 Corruption Jacking Up Electricity Cost - ADB Study, Written by Doris C. Dumlao Friday, 28 October 2005; http://news.inq7.net/nation/index.php?index=1&story_id=54785

88 Feb 12,2006, The Daily Star

89 Besides, several corrupt practices in the procurement process such as the purchase of a PP by RPCL, site selection of Raozan power plants, exaggerated billing in Sirajgonj power plants, over budgeting of Barapukuria power plants as well as outsourcing the maintenance and rehabilitation work and so on are discussed later in the chapter on corrupt practices.

90 Summit offered tariff rate at 2.79 cents/unit

Issues/Activity	Identified areas of corruption/irregularities	Remarks/Effects
Collection of confidential information by bidder	Due to presence of Official Secret Act, bidders collect the bid related bidders gather confidential information regarding the evaluation process by bribing the bid-related staffs	
time schedule of evaluation process	In several cases, Power Cell and IMED fail to submit the evaluation report within 150 days of bid submission	
Transparency in bidding process	Procurement processes of around 15 power plants were initiated; however, the process became stagnant	According to the experts, this is due to undesired intervention of the policy makers at different level of the process and the GoB was able to establish only the Tongi, Chandpur and Fenchuganj power plants during 2002-06.
Preparation of specification	Specification Preparation (specific condition/clause, capacity, type of machinery in the bid manual in favor of the specific company, use vague/confusing terminology in order to create the scope for pursuing illegal benefits in the future	
Relation between bidders and bid officials	Bidders sometimes work in collusion with government officials to pursue undue privileges, limiting the time schedule of the invitation and submission of bid papers, hiding the weaknesses or discrepancies in the technical and financial offers of specific companies in the evaluation report, fitness criteria, fabricated advertisement or printing of limited number of newspaper with the specific ad.	Biased evaluation and making delay and creating complexities until the targeted company is offered the bid
Bid offer	Unsolicited offer and unusual delay; irrational cancel of the bid process and unwanted intervention (Sirajganj power plant[91])	A Request for proposal for a 360 mw CC power plant was issued by the BPDB in April, 1997. The bid was received in June, 1997, but the BPDB took six months to issue the letter of intent (a lot of lobbies)
Bidding process	Inadequate exercise of bidding schedule (delay in around 70 percent cases), Submission of false experience certificate by bidders and bid without Manufacturer's Authorization warranty, irregularities in quoting price	
Approval of supply of the equipments and civil works for power plant	At the payment of bribe the approval of low quality product/equipments, Ghost bills of civil work in the Shiddhirganj Power Plant[92]	An MP of the last parliament placed the demand of Taka 300 crore by submitting fake documents against the work order of Taka 70 crore.
Site selection of power plant	Biased selection of site for power plants for political gain and abuse of power such as Politicized 210 Chittagong (Rauzan) power plant -the water source was 6 kilometers from the station and it takes time for hot start	During Jul'93 to Feb'07 two units were out of operation of 30,948 hours and 13,462.45 hours respectively and its economic loss of around million dollars

[91] Though several officials and politicians took bribes from the Summit, the PMO cancelled it abruptly; decision makers alleged a linkage between the CEO of Summit and opponent political parties. If the bid had been finalized, this plant would have started partial power generation from 2006.

[92] To justify the demand, he started delaying the completion of the work by several months, but the PDB refused to disburse extra money beyond the approved budget. Finally, the contractor went to the High Court to finalize his claim. Interestingly, the High Court gave a judgment in favor of the contractor and asked the PDB to pay the additional amount worth Taka 120 crore to the contractor against the claimed amount due to the submission of poor arguments and proceedings. The PDB then filed a writ in the Appellate Division against the judgment of the High Court. This matter is yet to be unsettled. (Source: PDB, 2006)

Issues/Activity	Identified areas of corruption/irregularities	Remarks/Effects
Delay by contractors	In several cases, Contactors create delays in development work in oder to enjoy the extra illegal payment through political or high connection for the extended work	
PPA with IPPs,	PPA with IPPS at higher tariff rate,	Electricity Purchase at a high rate from the Haripur 360 mw CC Power Project and contact with[93] RPCL as well
Site development of the power plant area and the PDB's penalty	Favoritism in the site development of the Meghnaghat PP and the PDB's penalty: While the AES deal was free from any allegations of corruption, the government mishandled Meghnaghat's 100 hectare site development project through bribe contract of Taka 150 crore. This contract was awarded to a Chinese company through blatant bid manipulation and re-tendering, as the local agent of that company was a ruling party parliamentarian. This scheme itself stands as an example of how political interference affects Bangladesh such this Taka 150 crore land site developments deals-fails to deliver the right value to the citizens of the nation. Allegedly, as much as Taka 20 crore was offered as a bribe by a section of the PDB and power ministry officials, as well as some policymakers; the PDB was trying to force the AES to accept the land. The fate of the project was uncertain for months during 2000. The AES, on the other hand, threatened to suspend the construction of its other power project-the Haripur 360 mw scheme under the support of the World Bank. Already, the project was running 146 days behind schedule; and finally; the PMO intervened and asked the power ministry to prioritize this issue and resolve. The PDB ultimately paid a penalty of 4.5 million USD to the AES to undertake remedial work at the land site.	

Having dropped the 12 MOU's signed till June 1996 with those who had submitted unsolicited offers for private power generation,; the negotiations and signing of the contract required another nine months. The company took seven months after that to make acceptable financial arrangements, and the financial closing was done as late as April, 1999 (the plant was not expected to be in commercial operation till some time in 2001/02). There is a reason to believe that such protected negotiations provided a lot of scope for manipulation and compromises[94]. With the help of the design and planning section of the PDB, the officials of the Power Division have been engaged in a tricky corruption process in the preparation of the specifications.

According to the high officials of the Power Division, several claims against bidders (especially of China, Korean and India) have been found to provide false endorsements and papers relating to work experience, which are the key documents of bid-related matters. According to the ADB Report[95], several claims have been made against bidders who are found to submit the fake documents related to unauthorized use of expert's CV, false claim, over-billing of bidding companies, and over-pricing.

Bidders fail to differentiate between the price of a previously imported item and the item to be imported after award or item to be supplied by ex-factory; they fail to fill out the bid form properly, which creates problems in evaluation.

Table 8: Summary of the Nature of Corruption and Abuse of Money in Procurement

Power Plant	Nature and Extent of Corruption
Tongi Power Plant	• Refusing the offer of Malaysian Company to establish the Tongi plant at $ 35 million Offer, which is around $25 million less than the costs incurred **Technical Faults** • Wrong site selection adjacent to an industrial area; as a result, the industrial or air pollution enters into the GBC and it cause of machinery failure at the power plants to be failure. • Domestic gas connection for industrial power plant. As a result, the usual function of the GBC is being hampered and it is a mystery as to how the technical experts allowed this mistake to happen?

[93] Annexure-----

[94] Power Supply and corruption in BPDB, Transparency International Bangladesh Chapter

[95] Integrity Division : 2005 Annual Report , January 2006

Power Plant	Nature and Extent of Corruption
	• Supply of low quality GBC and violation of contract. • Harbin cheated the BPDB of Taka 20 crore by not supplying GBC of Capacity 39,700 Nm3/Hour from Man Turbo, GE/ Germany/ USA/ France as were agreed. • Other anomalies and instances of corruption have occurred, including the supply of other equipment and development work in the Tongi Power plant.[96] (Source: MPEMR/PDB Documents 2006)
450 Meghnaghat - 3 Power Project	Unsolicited proposal violated the private power generation policy guidelines, Agreement on high tariff rate, Conditional bid bond violated the rules, AES had no earlier experience in the establishment of IPPs
Chandpur 100 mw power plant	Tender notice was published seventeen days later and submission deadline was within 36 days, Bid process is the cause of the high rate of the offer, 30% of the budget was over-estimated
Ghorashal 110 mw Power Plant	Any negotiation before inviting international tenders between ERD and suppliers and the related order to the PDB linked to corruption, only TPE submitted a tender both times, Delay in establishment
Barapukuria Power Plant	Over budgeting of the establishment cost, Intervention of pressure group in the procurement, Over-priced by at least USD 70 million
Haripur (33.5*3) 100 mw Project	Over-budgeting (almost doubled) in the actual cost of overhauling, the plants cant continue due to their limited life span, overhauling cost of Taka 110 crore of the project was a wastage of money
210 mw Fanchuganj CC Power Plant	Political interfere in procurement; Violation of the contract; PDB did not take any action against the company; 7 years' delay in the completion of the work due to intervention of the rent seekers
Other Corruption allegations/links in Procurement of Power plants	
• Extortion in the award of the Baghabri Berge Mounted Power Plant • Modernization and Rehabilitation of the Ghorashal Thermal Power Plant • Establishment of the Bhola 20 mw Power Station • Power purchase agreement from The Haripur 360 mw Plant at an exaggerated tariff • Cancellation of the expansion project of the Khulna 210 mw Thermal Plant • Appointment of a contractor for the establishment of the Shiddirganj 210 mw Plant	

Source: Investigation and documents, Key Informants, 2006

In the late 90's, IPPs came into operation to produce the power (along with the 83 percent share of public) and the decision was taken to set the maximum contribution of IPPs at 30 percent. The Govt. signed seven private IPPs to purchase their generated power, in reality; the total generation including the tariff rate of gas at a subsidized rate was not reflected in the negotiation while fixing the tariff rate under the PPA. The officials of the Power Division reported the corruption to be linked with the negotiations.

All out corruption in RPCL

In the name of Maintenance and Rehabilitation of RPCL, aid agency pressured and bypassed the GoB and directly funded to REB; besides, they appointed LIPPS without any tender at an inflated rate and MD abused crores of Taka in collusion with a group of the RPCL staff and the graft amount almost USD 27 million. Under the finance of KFW, RPCL placed pressure on the PDB through the Ministry, to impose their offered tariff rate i.e. Taka 2.5 per unit; however, then the PDB Chairman refused to accept this rate and proposed a rate of Taka 1.5 per unit. At one stage, RPCL was ready to sell at Taka 2.1 per unit, but suddenly they stopped bargaining. After the departure of the then Chairman, the rate was settled at Taka 2.5 per unit for the next 22 years, resulting in a net loss of around Taka 150 crore for the PDB. Besides, the Capacity Charge was somewhere to the tune of Taka 140 million/month. The motive behind the Capacity Charge was that the PDB will pay RPCL Taka 140 million/month whether they use the total capacity of the generated power or not. The Energy Charge was the generated power by the plant which was consumed by the PDB. The most interesting part was that the PDB never utilized the full load of the plant until 2005; rather, they utilized the full load only during the peak hours i.e. in the evening from 6 p.m. till 10 or 11 p.m. Three turbines were sitting idle for the rest of the day, which helped certain people of the power sector to earn extra money from the huge capacity Charge.

RPCL decided to build its third phase, which is the establishment of a 70 mw single steam turbine. It was planned to make the power station a combined cycle power station. A huge energy cost could be saved by making it a combined cycle power station as the steam turbine doesn't require any extra fuel; it will use the exhaust steam from the gas turbines as its fuel. Theoretically and

[96] Appendix A:17

practically, it was a very good idea as the gas consumption would not increase, which would result to a low generation cost; however, corruption eclipsed the project from the very beginning of the third phase in 2002, i.e. from the employment of the consultants. *No bidding process was followed, and the consultancy agreement was signed with Lahmeyer International GmbH of Germany after a brief discussion where some of the current REB (Rural Electrification Board) officials were also present. It was decided after a so-called stiff bargaining session that* ***52 Man Month will be*** *required to complete the consultancy work and finally* ***the cost was decided of 20,000*** *Euro/Man Month. Some of the honest officials of the REB and RPCL commented that* ***42 Man Month was sufficient for the consultancy part and the cost could be maximum 12,000 Euro/ Man Month****. But the whole consultancy cost was floated by the local agent of Lahmeyer International, who negotiated the deal with a few REB and RPCL officials, and the officials played a vital role in awarding the contract to Li covertly. This consultancy agreement resulted in an* ***extra payment of about 42 Million Taka****; many officials of both the REB and RPCL were the beneficiaries.*[97] This consultancy agreement, was facilitated by LI's local agent '*Ventures International*", and these two companies were already in one Operation & Maintenance Company named LIPPS. The RPCL again unilaterally signed the EPC (Engineering, Procurement and Construction) contract with Siemens Netherlands for the 3rd Phase, though it was publicized that the contractor's name is Siemens Germany. *The Cost of the project was fixed at Euro 100 million, whereas the KFW earlier estimated the cost of Euro 77 million; moreover, according to independent experts, the cost would be a maximum of Euro 65 million.* In this process, the project had to pay about Euro 23 million or Taka 18.4 billion; the extra money was spent to buy expensive watches (Montblanc) to pay off the government leaders and the officials of REB, PDB and RPCL. RPCL was not established based on the PSMP and the tariff was also fixed with PDB under imposition. Actually, under the guidance and instruction of the aid agencies, the REB established RPCL (a mix of public and private company) to examine the future of private-public ownership; unfortunately, the experience is not only bitter but also upsetting. Instances of rampant corruption and miss-management are depicted in appendix.

Primary Estimate of Corruption Value during Procurement of PP

With the help of different sources and experts, this study has tried to estimate the volume of procurement of new plants in different areas of the country. Since there are no clear-cut documents of corruption, the value is estimated based on the information provided by different experts and by assessing the market price of the new plants. And finally, the monetary value of corrupt transactions from the procurement of six new plants was estimated at around Taka 4007.3 crore or US $ 688 million[98]; with this amount, an additional 3000 mw of power could be transmitted at national grade by setting up different power station though the country. PDB Chairman criticized the existing format of procurement process by saying, "if any huge corruption is committed within the usual process then no one objects, but if any positive initiative **proceeds beyond the process then one has a chance of being caught."**

The corruption at the policy level is the major constraint to the efficiency of the power sector and the aforementioned nature and extent of corruption only present a snapshot of the real situation. In case of win-win situation it is quite tough to be informed about the real picture of distribution/extension. Due to high profit margins and assurance or guarantee of purchasing power multi-national companies are engaged in bribery and unethical practices; in addition, sometimes aid agencies bargain with the govt. to create space for multinationals in the power sector.

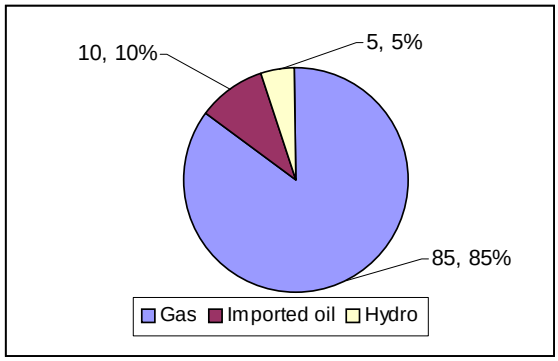
[97] Loss due to excess man month = Taka 1, 44, 00,000.00; Loss due to excess rate = Taka 5, 24, 16,000.00

[98] Appendix A :20

Poor Performances of the Public Power Generation Units

The generation capacity of the existing public power plants has already been reduced from 5275 mw to 4350 mw, and the PDB has been supplying around 3000-3200 mw, including 1260 mw from IPPs. The public plants have failed to generate power at the optimal level. Several problems have caused to decrease the generation. Under the current capacity, at least one-fourth of the units of 1000-1200 mw power should be overhauled[99]. According to the former PDB Chairman, "It is required regularly to purchase equipment to run power station or supply of electricity, but the Board does not have enough financial power to purchase the equipment if the price is Taka 30/35 crore (if the value is more than Taka 10 crore). For the maintenance and rehabilitation of any power plant, the PDB has to take approval from the purchase committee, which causes delays in the procurement and the supply of power". The several inefficiency and poor governance failures addressed below are identified in the existing public generation.

Figure 6: Different Inputs in power generation



Source: PDB, 2006

Table 9: Causes and natures of inefficiency, corruption/irregularities

Issues/Activity	Vulnerable areas of inefficiency, corruption/irregularities	Remarks/Effects
Life time of the existing public power plants	Outdated or expired life-time; the total capacity of 168 units of 3867 mw has been de-rated capacity of only 3164.0 mw[100]; Absence of reserve margin in power generation unit	Out of the 63 public plants, around 66 % have already exhausted their lifetime and rests of 34 % are serving at more than 100 to 300 percent of their life time[101].
Huge gap in peak and off-peak demand	High fluctuations in peak load[102] and off-peak load or demand	Yet to establish of peaking power plants
Inputs cost of generation	High input cost of generation by public power plants; in case of GT plants, the per unit cost of generation is around Tk 1.5103 which is Taka 6 -12 in case of diesel based plants	Three power plants (capacity of 396 mw) burn liquid fuel of around Taka 650 crore (33 percent of the total expenditure)[104]; Environmental risk associated with use of diesel for power generation
Availability of inputs	Several plants have been closed due to unavailability of gas/coal105.	Due to the unavailability of gas 90 percent RMG are using diesel based generator increase the production cost.
Financial availability for the developments of power plants	Poor financial capacity to purchase equipment for power plants for the power plants is strong barrier	The cabinet committee approved a down payment of Taka 52 crore or 10 percent of the total cost of the 90 mw Fenchuganj Power Project to the Chinese company Harbin. Several units of the existing generation plants[106]

[99] Expert in the power sector
[100] PDB, June, 2007
[101] Appendix A: 7.a
[102] Peak Load (mw) = Energy (mw)/ (Load Factor* Time (Hours))
[103] Assume that price of 1 MCF gas in international market is Tk. 73.91
[104] Power Cell, June 2006
[105] The Daily Naydiganta, 27 January 2007
[106] such as 4 no. unit of Kaptai Hydropower project (50 MW), Haripur 33 MW power stations, 5 no. unit of Ashuganj Plant, Westmont (Baghabri) 45 MW power plants

Issues/Activity	Vulnerable areas of inefficiency, corruption/irregularities	Remarks/Effects
Rehabilitation and maintenance of power plants	Due to huge shortfall in generation and financial constraints, usually routine maintenance of power plants is not done[107].	Khulna's 60 mw and 110 mw power plants were built in 1973 and 1984 respectively, by a Czech government company Skodaexport, but due to intervention of rent seeker group the process was not advanced
Performance of human resources,	Lack of incentives given to efficient and honest staff members of the plant, Inefficiency and absence of accountability of the plant staff, no incentive for power plant staff[108]	Poor performance of the staff and increase the operation costs
Snapshots of the corrupt practices in generation	Corruption link with the hiring foreign consultants	In case of the Barapukuria Plant, the Secretary at that moment tried to extend the contract for 27 Chinese engineers at Taka 11 crore for several years, and he also sent the proposal to the purchase committee by showing unavailability of practical training of local experts though 22 local experts were trained on maintenance.
	Corruption in overhauling and maintenance[109], theft of money from the purchase of excess air filters[110], theft of oil from the store[111], theft of spare parts of the power plants and materials Sold to the Power Plants	Second Unit of Shahjibazar management demanded and requested for replacement of its air filters. The officials submitted fake documents for purchase of air filters, whereas they were not required
	No balance sheet is prepared by the staff of the power plant and the real picture of its financial performance is never evaluated.	The recent past State Minister discovered an "inconsistency in the balance sheet for income and expenditure which showed a loss of Taka 6 to 7 crore in place of at least Taka 50 to 60 crore in the Raujan Plant.

Though most of the plants are supposed to be suspended from generation for scheduled maintenance and rehabilitation, those plants cannot stop their generation due to the massive crisis. In this situation, several steps (including the revision of the earlier PSMP and separation of all existing power generation units including those under construction and the making of future power stations into corporative entities) have been taken to ensure the least-cost generation and a balanced mix of the generation capacity from public and private source. The PDB could save Taka 525 crore yearly if those three plants were gas based.

The former State Minister identified *the grafts case of Taka 180 crore, while a bill* of expenses is not available against the allocation of Taka 600 crore for the Khulna Power Plant. The same irregularities have been observed in the Tongi Power Plant with regard to the uses of Gas Buster. Besides, most of the staff members of the power plants are either inefficient or do not perform their assigned work. The technical staffs including engineers of the plants maintain official hours

[107] Unit number 3 (210 MW) and unit number 1 (55 MW) of the Ghorashal PP; unit number 5 (150 MW) of the Ashuganj PP; unit number 1 of 210 MW Siddirganj Plant, 110 MW and 60 MW units of the Khulna PP Haripur 100 MW unit, Baghabri's 45 MW unit; 35 MW unit of RPCL and other units were closed due to over load and inadequate maintenance at the scheduled time; July 2008

[108] Who is responsible for the damage of 100 m.ton of glass wool at the cost of $ 83,000?

[109] "The former secretary of power emphasized on for power station replacement, rehabilitation, overhauling to seek rent in collusion with a vested interest group and ignored the need for the urgent purchase of captive power, implementation of load management, maintenance of power stations, setting of the capacitor, improvement of collection as well as distributional efficiency and reduction of non-technical loss", said by a former State Minster for Power[109].

[110] A power engineering company reported this allegation, source : Investigation and inquiry division of PDB, 2006

[111] Around 65,700 liters worth Taka 16,42,500 is assumed to be stolen, and the money earned from the sale of the oil has been distributed among counter parts, security officers, security inspectors, CBA leaders and even some of the high officials of the power station. Besides, in September 2005, the store keeper took a 1% commission/ bribe from the total bill of the oil companies (i.e. Taka 3 crore).

from 9.00 am to 4.00 pm, but the other technical staff usually starts work at 4.00 pm, therefore, since no adequate instructions are provided to the staff, the process becomes slow and hampers the power supply because of the non-cooperation among the plant staff. The reasons are i) an absence of incentives for efficient staff, ii) the PDB staff are not found accountable for any negligence or theft of fuel[112] and iii) Qualified Engineers are suppressed by less qualified and politicized staff members.

Generation of power must be handled in a way so that people can enjoy an uninterrupted power supply, due to inefficiency and corrupt practices; the generation of power has become unreliable and inefficient. As a result, the consumers are suffering, and the future direction of power generation (70-30 percent mix of public and private respectively) is questionable; this mix should be maintained to ensure the PDB's sustainability and energy security, and in that case consumers may be the potential owners of the public power plants.

Governance Failures in Transmission Sector

Electricity transmission lines transform electricity from the source of generation to the concentrated areas of the customers. Earlier, the BPDB was responsible for transmitting the electricity, but now the PGCB, a newly established company, has been maintaining, operating, and developing this system since 1996.

The transmission sector is only the sector which has not faced any loss ever since the establishment of the PDB, however, (under ADB financing) because of the donor's suggestions/pressure to unbundled the PDB, the PGCB was created. However, the imbalanced expansion or renovation of transmission lines without the balanced expansion of generation is not consistent with the sector's efficacy. Besides, there are several allegations and cases of abuse of the funds in a systematic way. Though a huge expansion was made in the last 10 years, with the construction of new lines and grid sub stations, several anomalies have been reported in this sub-sector.

Due to a condition placed by the ADB, PGCB was created; and officials of PGCB, it was expected earlier that the corporatization of PGCB would be free from corruption. Unfortunately, several risk areas for corruption were identified in procurement, and conditions for the transaction of money in the prescribed Government banks. The nature and extent of the problems in PGCB are discussed below.

- Non-transparency in the bidding process and syndication among bidders and official staff such as Assistant General Manager of the PGCB.
- Unsettled of hundreds of allegations concerning financial anomalies
- the existence of syndicates in the tender process, and the abuse of supplied input were submitted
- Ignoring national security concerns related to KPI for rent seeking purpose[113]
- There is an allegation that, in the name of auction of materials, millions of Taka have been grafted collusion with the Director (Finance) of the PGCB.
- Several lines[114] have been constructed without conducting soil tests and ensuring the required protection, as a result, the legs of the tower have entered into the soil.
- The legs of the tower of the recently-constructed transmission line have been entered into the soil sue to poor feasibility studies
- An unplanned 33 KV submarine cable line was established in the Bishkhali River under 16 towns' project by river crossing and it was not in PP. Consequently, the capital loss was at least Taka 10 core in this project and labor cost was Tk. 62 lacks taka. (Source: 6 towns, no: 42, date: 7.4. 2001)

The policy makers have raised the question of efficiency of the corporatized units such as WZPDCL and other organizations.

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[112] In the words of a former State Minister for power "*a major overhauling was made in the Khulna 60 MW plant but it is not working*". He also suspended two plant officials of KPP for irresponsible actions.

[113] The PGCB withdrew the professionals and appointed untrained lay people instead. This would obviously allow the theft of equipment without barriers.

[114] Including 230 KV double circuit line from Baghabri to Khulna through Ishwardi and to Barapukuria

Distributional Inefficiency and the Reduction of Access to Electricity

Bangladesh Power Sector has been suffering from high non-technical or system losses. In Bangladesh, the distribution system is operated by the PDB, DESA, DESCO and WZPDCL in urban areas, while REB/PBS[115] covers the rural people. According to Table 10, the highest numbers of consumers are under the PBSs/REB, but they also have the lowest import-collection ration is due to the highest T& D loss/perverse theft of electricity in DESA. The tariff or sale rate is high in the newly corporatized DESCO; DESCO also purchases electricity from the PDB at a subsidized rate.

Table 10: Key Statistics of Distributor Agencies

Key Components	PDB	DESA	DESCO	WZPDCL	REB/PBS
Consumers	14,59,054	5,57,011	2,59,580	-	**61,29,817**
Collection - Import Ratio (%)	84.16	**71.09**	80.92	**89.05**	84.44
System Loss (%)	20.01	**29.96**	16.64	21.38	**13.78**
Purchase (GWh)	5993.05	4598.89	1842.89	**388.57**	**7489.15**
Sell (GWh)	4794.64	3589.69	1536.31	312.2	**6457.14**
Purchase Rate (Tk.)	2.17	2.12	2.17	2.17	**2.29**
Sales Rate (Tk.)	3.42	3.34	3.81	3.58	**3.77**

Source: Power Division, MPEMR, June, 2006 and www.powercell.gov.bd/index.php?page_id=241

However, under the restructure of the distribution sector, there will be a major change in load sharing DESCO and REB's share will increase steadily from 2005 to 2025[116] and BPDB's share will decline from 32.4% in 2005 to 31 % in 2025, DESA's share will decline from 22.9 % in 2005 to 22 % in 2025 (after transfer of Tongi) and DESCO's current share is 11.1 %, in 2025, it will be 12 % in 2025 (after handover of Tongi).

Though the above steps have been taken, high non-technical losses/theft and pilferages of power at the consumers' end are the root cause of miss-management of the entire power system. The diagnosis of the problems and governance failures are discussed below. Along with system

Box 7: Are the public limited electricity entities efficient?

The main components of the reform program are the segregation of the power generation, transmission and distribution functions; the corporatization and commercialization of emerging power sector entities; the establishment of a power market under the regulatory regime; the overseeing of the competitive tariff, more private participation or dependable private investment; and the development of alternative/renewable energy resources.[1]In line with that process, several reform measures in the power sector including Power Cell, Haripur Plant have been taken under the SBU[1], the introducing Rural Electrification Board in 1977[1], formation of DESA and tehn DESCO, WZPDCL, public-private partnership in generation (IPPs and RPCL), EGCB and Ashugonj Power Generation Company, PGCB and BERC etc. It was expected earlier that after these reform measures, the sector will run smoothly and the PDB would get autonomy in the actual sense and the staff would not get be more accountable to the board; in reality, however, except for the slight improvement in terms of the reduction of system loss, one can observe the inefficiency and mismanagement in the reform process and the following issues are raised about the reform process -

- There is no specific guideline or a clear step-by-step approach for a future reform process
- After enacting of BERC in 2003, what is the significant role in bringing efficiency of the power sector?
- Practice of corporate governance in recruitment for Board and operations is absent in the corporatized units
- A huge knowledge gap and lack of commitment at the policy-making level is absent
- Absence of a corporate culture among the sector staff and the efficiency of the sector as well; "CBA plays the main role barricades any action against corruption (whether petty or major in nature"[1]
- Absence of a 'hire and fire policy' in human resource management
- Mal-practice in coporatized units such as DESCO[1], RPCL[1], WZPDCL[1],

Besides several allegations on the abuse of power, graft of public fund allocated for maintenance and developments have been identified in the corproatized units.

[115] REB coordinates the PBS

[116] Load Forecast, Draft Final Report: Component B, PSMP 2006, Page 3 - 23

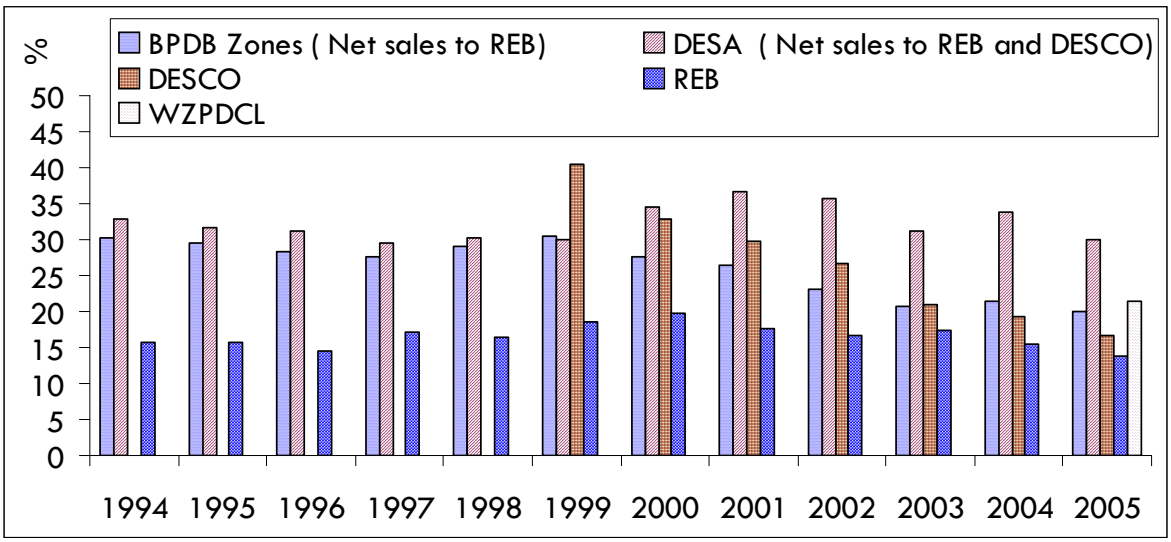
loss/theft of power and the following problems/failures are the key constraints to bring about efficiency at the distribution level as well as quality of supply to the consumers.

High T& D: Theft of Electricity

System loss refers to both the technical loss and the non-technical/distribution loss which is constituted by different process and forms. It is noted here, theft amount is equal to the difference between the amount of electricity that is generated and the amount for which customers are billed and the official average T & D loss is approximately 22 percent; but the several estimate states that this rate is around 25 – 30 percent highest in the developing world.[117]

Due to absence of accountability[118] and other reasons the distribution losses are high in the PDB and DESA. Interestingly, after the formation of DESCO, the T & D loss (which was around 40 percent earlier) has been reduced over the time. Figure 7 shows that the T & D loss in REB is below 20 percent; in FY 2000 and over all system loss went up to 20 percent. It has been reduced to around 15 percent, but the DESA is still the highest in terms of losses i.e. around 30 %. For instance, approximately half of the total T & D loss of BPDB and DESA are a result of mismanagement and falsified meter reading.[119]

Figure 7: T & D Loss in Different Agencies



Source: ADB/PDB, 2006

According to the WB, the excepted system loss for a standardized system of power is 8.75 percent, it is 12.63 percent for a medium level system; and 16.5 percent for a weak system; in reference to this, for a medium to poor level country, and around 12 percent a T & D loss is expected fro Bangladesh. *Around Taka 18930 crore was lost due to theft away in the name of system loss during FY 1994 – FY 2005.*[120]

Mode of theft

A high ranking official of the Power Division stated that "in the name of system loss, most of the electricity is lost due to theft. The beneficiary groups are a portion of consumers engaged in pilferage and the respective office staff members, from the meter reader to the Executive Engineer. The concerned meter readers (3rd/4th class employees to Assistant Engineer/Divisional Engineer) ask/offer consumers to pay at reduced the bill against the payment of bribe. If the particular consumer agrees to make an illegal deal then processes become faster. The modes of theft are below-

[117] Miyan M. Alimullah, Richards J.D., et al 2002,"Electricity for All- Electrification and Development in Rural Bangladesh", Centre for Policy Research, International University of Business, Agriculture and Technology, Dhaka

[118] A high official of the PDB stated that "CBA leaders are also sometimes used by the higher officials for their interest, such as the abuse of public money and transfer purpose"

[119] Mathias Ruth, 2002

[120] Alam S., Director, Institute of Energy Technology, Chittagong University of Engineering and Technology

a. Fake consumer list belongs 25 percent or 24/25 las consumers accounted as bill defaulters[121]
b. Illegal connection, hooking or pilferage by direct hooking from 11 Kv and 33 Kv lines
c. Tampering meters through
- Broken/Damaged/Torn and Tottered seal of the meter[122]
- Burning / Replacing the old meter which has a high number of unpaid bills
- Bypassing the meter[123]/ Fake seal on meter / No seal/Base plate on/off Meter-box
- Direct line from the pole (Direct connection)
- Earthlink/Service by passing or linking the internal connection with the main line
- Gear slipping
- Making meter (7.8 percent) and fast KV meter (1.06 percent) slow/inactive by using magnet, drilling meter and a thick small stick for stopping the movement of the meter.
- Opening the terminal of the B phase CT/secondary terminal of CT in collaboration with the officials
- Tampering with the Meter-register/Hologram Seal

Box-16: Reduction of bills at cost of bribe in DESA

The S & D Office disconnected the line with an outstanding amount of Taka.3, 00,000 and filed a case against 'x' consumer of Lalbagh S&D.
The Meter Reader proposed a bribe of Taka.1, 50,000 to settle the case. The concerned consumer agreed to the proposal in order to become benefited and to avoid harassment. Finally, the case was dismissed and office issued the reduced bill for only Taka.28, 000 for the following month. It is noted here that the meter reader did not provide any bank receipt to the consumers, just a paper upto clearance. This is a reflection of the DESA's management system.

d. System Metering
e. Supply of low quality meters and supply lines which reduces the revenue[124]
f. Load and Transformer related mal-practice
- Consuming more electricity more than the approved load, especially in DESA area125
- Transformer of higher KVA

g. Theft of revenue by faulty billing procedure –
- No bill/estimate bill/handmade bill through collusion with meter readers
- Inaccurate/lower amount of bill than consumption
- Minimum bill or inaccurate reading/issuing bill without physical inspection
- Showing bill as being paid (in ledger) but not in reality
- Paying residential bill, but using power commercially

h. Existence of illegal points of connection and unplanned structures

The cumulative amount of outstanding bills is increasing drastically, and though the audit division submitted the report of graft of electricity, no action has been taken. At best, in a few instances, "eye wash" punishment was given to the officials.

Table 11: Reasons for Perverse Theft

Factors cause to theft of power	Descriptions/Effects
Ineffectiveness of the existing Electricity Acts and Magistracy (Out of the 113,677 cases filed against the alleged graft/unpaid bills, 76 % cases are finalized and rest of 24 % has been accumulating with the	- Inadequate number of magistartes[127] - Lack of experiences of the PDB staff on prosecution - Communication gap in terms of names and address with law enforcing agenices - In several cases, alleged accused is released due to transfer of the offcials due to absence of transferred plaintiff

[121] There are big discrepancies among the ledger book, billing register and meter readings. These bogus billing accounts were first introduced in early '90s in the Chittagong Division, and gradually this corrupt practice expanded throughout the PDB and DESA.
[122] Report on MPEMR related Standing Committee of 8th Parliament, September 2006, page 67, 8.2 (kha)
[123] Report on MPEMR related Standing Committee of 8th Parliament, September 2006, page 67, 8.2 (ka)
[124] Report on MPEMR related Standing Committee of 8th Parliament, September 2006, page 67, 8.2 (gha)
[125] Report on MPEMR related Standing Committee of 8th Parliament, September 2006, page 67, 8.2 (uma)
[126] At present 23,237 caeses are unsettled in two courts of Chittagong PDB; activities of courts are being conducted for only two hours of Sunday and Tuesday of each week

Factors cause to theft of power	Descriptions/Effects
regular cases)[126]	Usually, cases of corruption are filed against the honest[128] and poor clients, but not against influential or rich clients", by Magistrate of a Bidyut Court Inefefctiveness of the apply of law; under clause 39 of the Electrity Act cases are filed against the alleged consumers but, in collusion with the staff in transaction of illegal money, plantiff withdraw the acses and as a result the theft of electrity increases
Limitation of the Electricity Act 1910	The act is not ell defined and equitable with the current age, magistrates are not oriented about the act during courses, abuse of legal compulsion for continuing power supply to huge defaulters,
Shortcomings and mal-practices in Magistracy	Few staff (might be linked with corruption) is engaged in both filing cases and investigation, absence of an independent investigation cell of power division, extent of punishments are almost same for small and large corruption, there is no obligation of incorporating the technical person in the judgment process129., under collusion with the defaulter consumers, the distributor organization do not appoint efficient lawyer.
Absence of Watchdog bodies and ineffective BERC to address the grievance of the consumers.	
CBA's shelter to the corrupt staff and rent seeking	In connection with the CBA and high officials, the meter readers are engaged in the theft of power. Under the shelter of the CBA, frequent cases of the cases of the organized theft of power are taking place
Ineffectiveness of the system loss reduction project as well	
Poor accountability and inadequate monitoring of the staff130	Undefined job description, responsibility of the staff is not distributed on a feeder basis

The judgments are given based on the Electricity Act, 1910 of Bangladesh in the PDB/DESA. Both the Mobile Court131 and Specialized Bidyut Court132 are operated to prosecute the illegal users of power or bill defaulters133. Though few changes in the Act have been made, in practice, the Electricity Act of 1910 is not effective in 2007. Besides, From FY 1998 to FY 2005, around Taka 19316.37 crore has been allocated for development expenses.[134] The GoB has adopted several measures to reduce the system loss by introducing the pre-paid metering system, performance target achievement, corporatization of DESCO and WZPDCL, and collection outsourcing, in reality, however, achievement in the other areas has been quite insignificant.

In this situation, it is urgent to introduce a system to check the T & D loss. It may include making meter readers or staff members accountable for the amount of the meter is supplied per month in the specific feeder, and the corrupt consumers and staff should be prosecuted by the court.

[127] Upto 2007, only magistrate was appointed to manage all cases of north and south courts of PDB, but after speration of judiciary, no other judge for PDB courts and this problem is rampant in all entities including DESA and DESCO

[128] For taking bribes

[129] [1]Clause 2, Revised Electricity Act No. IX of 1910 on February 2006

[130] Under the ordinances and order no. 59 of 1972, the PDB was formed with the responsibility for the generation, transmission and distribution of electricity, except to areas covered by the REB

[131] Case file on the spot at the presence of the magistrate

[132] Each Magistrate conducts at least 8 mobile courts in a month.

[133] Case filed by the divisional office for hooking, by passing and theft of electricity

[134] Bangladesh Economic Review 2006

- **High T&D Loss and Justification of Increase in Consumer Tariff Rate**

Due to high load shedding/unreliability of electricity and harassment, people are less willing to pay for power at an increased rate. From the equitable distribution point of view, an increase in tariff is not consistent and rational under the current state of inefficiency, neither is it adverse to T & D loss. According to the Power Cell, the gain from the 5 percent increase in the tariff would be around *Taka 426 crore*; but if the system loss or pilferage can be reduced to the average 12 percent level, than the gain would be **Taka 1003.50 crore** (10 times higher than the gain from the tariff increase). Even if the theft or system loss is reduced to the 15 percent level, then the gain would be around **Taka 625.72 crore**[135]. From the welfare point of view, it is always feasible to reduce the system loss but not to increase the consumer tariff. Besides, an increase in the tariff rate is a concern for rural consumers, especially agricultural consumers. Since the high officials, along with the corrupt staff, are engaged in corruption, the consumers have to face suffer and real access to electricity is still low, then the accountability system would work.

Withdrawal of minimum charge in case of more than 45 hours

According to the survey, except DESCO (72 percent) more than 90 percent of the consumers of all the distributors reported instances of load shedding for more than 45 hours per week, but almost 90 percent of the consumers reported that there was no withdrawal of the minimum charge. The highest percentage of consumers (96 percent) is in the DESA's[136].

Irregularities and corrupt practices in electricity suppliers

In organization major amoney are abused in the name of maintenance and rehabilations and a sysnidacate of contarctos and aoffcials are linked with this 'cartel' and

Table 12: Illegal Practices and Beneficiaries from Maintenance Work

Working area	Area of corruption	Types of corruption	Beneficiary person / group
Reconstruction of line and maintenance of lines	Tender process Monitoring the work Purchase	Nepotism Abuse of allocated funds without completion of the reconstruction of lines	Contractors Project related executive engineer and higher level officers
33 KV and 11 KV substation maintenance	Purchase and tender process	Over budgeting	Executive engineers and higher level officers of the PDB/DESA/REB

Source: Key Informants (2006)

The above stages/areas of corruption and anomalies are usual cases in the power sector. The divisional office violates the rules of maintenance and repair work during emergencies. The office assigns an agency to repair and provide routine services to the vehicles. After repairing of the vehicle, the tender is invited at a certain time of the year, but not published. It is sent to other divisions and handled in silence. The other offices also keep it a secret because they too have sent some sort of tender at some time. According to the Account Officer (establishment) S&D of DESA, sometimes without inviting a tender, the money for repair and maintenance has been drawn by the officials through contractors.

Tabe 13: Description/Effects of poor power sypply by entities

Organizational problems	Descriptions/Effects	Beneficiaries
Inefficiency in the operation and maintenance of distribution lines	Disputes between the REB and PDB in transfer of the electricity distribution line and sub-stations Frequent exercise of hooking from the distribution lines Frequent burning of overloaded transformers and equipment caused by illegal hooking Lack of reliability of power supply	

[135] Appendix A: 17
[136] Appendix A:39(b)

Organizational problems	Descriptions/Effects	Beneficiaries
High technical losses[137]	• poor maintenance and abuse of the input supplied for maintenance, defects in system design, overloaded transformers and lines • undersized and overloaded equipments, poor maintenance of the distribution network, • abuse of the supplied equipment for maintenance, shortcomings of the system-design, expiry of the distribution network, especially in Old Dhaka	
High load-shedding and voltage fluctuation	On average, 95 percent[138]including 93% of PDB/ DESA/DESCO of the consumer reported that load shedding occurred for more than 45 hours per month; 99 percent of the consumers of the REB/PBS face more than 45 hours of load shedding in a month.[139].	
Abuse/corrpt practices at distrbutional organisations		
Abuse of supplied equipment or fund for local purchase, Abuse of funds during emergencies or natural disaster[140]	Unadjusted Equipments between PDB and REB; A decision was made that after the transfer of the distribution lines from the PDB to the REB, the equipment such as 33 KV, 11 KV, 440 KV, 220 KV lines should be returned to the PDB, but the PDB did not receive any poles, transformers, cables, others fittings from REB, Showing bogus supply of inputs from store of WZPDCL	Store keeper, linemen, concerned engineers and the suppliers, are engaged in the theft of supplied input.
CBA'a illegal intervention and activities in the commercial service	Political affiliation of CBAs, Engagement of higher officials and policy makers in corrupt deals, weak implications of the act in terms of capturing the criminals, Lack of commitment of the CBA to the corporate and sustainable industry, like power	
Political Intervention in Bidding Process of Maintenance and Development in	According to a DESA official, "in most of the cases, the office cannot control the tender process and allocate the work order to the recommended bidder of the power party.	Concen Asst./Exec. Eng. are engaged in the process of PDB and DESA
Purchase of low quality digital meters and corruption in meter change, missing of brand meter	Kalurghat S&D changed the HT meter (UNISCO Fabrics), but the office did not follow the guidelines for maintaining seal records properly, and by using fake reading documentation, the meter reading at the time of the investigation were 16,500 units 16 town projects have collapsed due to rampant corruption.[141]	Brand Meter were missed from the store of DESA
Abuse of resources allocated for system loss reduction and Organized theft of electric transformers of REB	Previously installed 1250 meters meters of the consumers were withdrawn from the field an another 100 were shown as missing, 80% of the rest of the meters were damaged within 3 months of installation	out of 1250 analog meters only 480 meters were distributed
Corruption in local tender.bid process and purchase @ high rate	One purchase process of WZPDCL was determined at open tender method, but through negotiations the equipment was purchased by a tender at a 250% high rate	
Abuse of oil, ill behavior, illegal collusion and abuse of overtime by drivers of DESA	Drivers steal the oil allocated for govt. vehicles showing by fake vouchers; if the higher authorities object to their activities, then they behave badly and sometimes even threaten the officers	CBA leaders, drivers of the PDB and DESA

[137] Chapter 3 : Power, Private Solution for Infrastructure in Bangladesh, WB and Public-Private Infrastructure Advisory Facility

[138] Appendix : A:39 (a)

[139] Consumer Survey 2006

[140] On 19 May 1997, the PDB allocated Taka 1.05 crore to rehabilitate the damaged transmission lines; however, based on an allegation from a person of Khatunganj, it was discovered that the work was completed within Taka 8.96 lac which is 1/10 of the originally approved funds

[141] The aid agency provided funds to improve the efficiency of the distribution sides of WZPDCL and to purchase transformers under the contact with Energy Pac, and Energy Pac paid Taka 1 crore as a bribe on 20 June 2005 to higher officials for supplying low quality transformers at an exaggerated rate.

The abuse of supplied inputs is the key constraint to enjoying a reliable supply of electricity. If the ledger and disbursed amount from the store are examined, it will be that the theft amount and the allocated equipment such as transformer oil, cables, old and new meters and other equipment are frequently stolen by the concerned staff. According to the Service Rule, "If any Government official is accused of abuse or theft of money, then he or she would be prosecuted for the highest Taka 50 thousand or 2 years in jail". From an equitable point of view, the said punishment is very low considering the extent of the theft amount (i.e. earning lacs of Taka by meter tampering of HTI connection).

- Embezzlement of Taka 11, 04, 84,549 electricity revenue from agricultural consumers of REB

In Sirajganj, during farming period around Taka 94, 701,042 were embezzled between 1998 and 2001. As a result of the collusion between agricultural ('B'grade) consumers and PDB officials, 107 three phase meters installed at home premises were shown to be stolen, and the office provided the 'estimate bill' of 10 hours of use per day (= 6,31,34,028 kw × Taka 1.5). (Source: DI-2, 2002)

- Work order beyond the allocated fund in PP

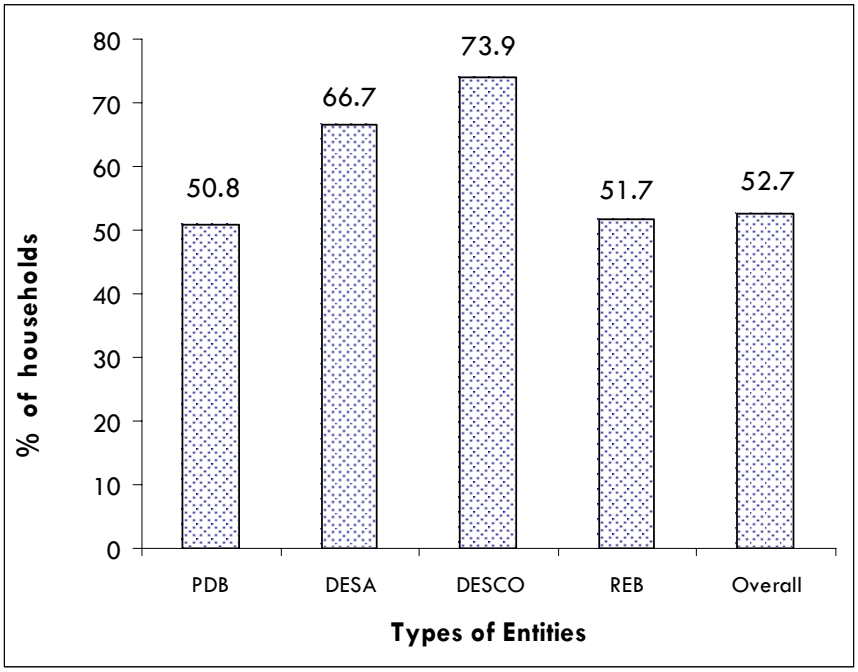
i. The 9 Towns Project's allocated fund was Taka 114.18 lac; the work order was Taka 141.20 lac, with an extra 27.02 lac as remainder
ii. Improvement of the distribution system of Barguna District: allocated fund was Taka 85.63 lac and work order was given of Taka 122.73 lac

Corruption and Harassments in Commercial Services

In the name of system loss the graft of electricity has been tough reality in the elctricity sector and not this is not only Bangladesh phenomena it is also fpund in neighbor country in India[142]. This scenario is the same in Bangladesh, and about 1/4th of the net generated electricity is lost in the distribution networks. On other hand, 5 percent of the bills remain uncollected each year.

According to the Organogram of the PDB[143], under the coordination of circle and zonal offices, local level commercial services are implemented through the S&D office in a particular area; S&D offices provide electricity service to the consumers and also function as the Board. In the DESA area, engineers have the responsibility of specific feeders, per instruction.[144] In REB/PBSs, the General Manger (GM) works to

Figure 8: Incidence of hararssemnts and corruption faced by clients



Source: Household survey on corruption, 2007

[142] 20% to 30% electricity attributed to un-metered agricultural consumption is in fact appropriated by high income households, industries and large commercial establishments (Ruth, 2002,World Bank)

[143] Appendix A:1

[144] The SD or Asst. engineer in charge of feeders in S&D, the Sub-Assistant Engineer, the Meter reader and the Gang, all work under the SD/Assistant Engineers

provide the commercial or consumer services.

Services of the Distribution Office

Commercial services[145] include the services to the consumers on a) new connection, disconnection, reconnection and replacement; b) meter reading, billing and revenue collection; c) extension of load/ load management; d) register consumers' complaints/day to day servicing of existing distribution line; e) substation maintenance and emergency services.

The excess demand for new connections, the avoidance of complex paperwork, illegal connections and tendency to reduce the meter reading have created the scopes for further corruption. High cost, but low quality, of service to the consumers is a common feature of the power sector of Bangladesh.[146] The bribery mechanism for the distribution sector may range from small fees paid to clerical staff to large-scale bribes paid to top-level officials. The lack of revenue from electricity generation and distribution may jeopardize the financial stability of the power sector. Accoridng to HHSC 2007, on average 52.7% consumers have reported about the harassments and corruption. Unfortunately, World Bank guided public ltd. company DESCO are supposed to be more customer friendly, the incidence of harassment and corruption is paradoxically found the highest (73.9%) in it.

New connections and experiences on harrassments

In a particular holding, no more than one residential connection is provided, with each flat considered flat as a separate entity. Requirements need to be fulfilled as per tariff rules and pro-poor documentation. In reality, it is quite tough for an applicant to complete the process by himself due to harassments by the staff and agents or media. According to the 2006 survey, among the applicants for a new connection of both LTI and HT connections three types of contracts are found with applicants for new connections: 40 % contract for the whole package, 54.6 % for urgent connection; and only 5.4% to avoid hassle. The applicant faces severe harassment at each step if he processes the connection without earlier contact caught by the office staff and different officials or brokers[147] of the particular feeder and when the load becomes higher (LTI & HT), the connection engineers become involved in the process in order to enjoy huge bribes. Consumers take the help of brokers to avoid any complications, such as, minimizing time duration and unusual harassment. According to the 2006 survey findings, the office claims that the delay is due to the insufficiency of MLSS and inadequacy of the required documents, the real cause of the delay is illegal practice and the longest delay in DESCO for providing a new connection was 103 days, but at the payment of bribe the connection took only 6 to 7 days for getting new connections from DESA and RDB respectively.

Box-18: Harassment or Delay in Issuing a Meter

Consumers of the Siddirgonj S&D were harassed in the process of new connection, from the store section. 87 consumers deposited their required money but store section did not issue the meter to the consumers. Even he did not put up the account no. after depositing the money as the consumers should get the connection within three days, but it took three months to issue meter. As per rules store section put the account no on meter within 1 day, if meter is unavailable in the store it will take time. But storekeeper can not put account no. for personal gain and delay to issue meter. (Source: Key Informants)

officers, in charge of the specific feeder, though CBA leaders share in the earnings from their illegal transactions. CEI's certificate/clearance must be verified, but the Inspector does not visit willingly without a bribe. Moreover, the consumer has to bear all the costs, including air ticket, transport facilities, accommodation, food and a gift or cash during his stay. According to the survey data, 61percent of the applicants influenced or paid extra money to the concerned party for getting a meter and 55 percent of DESA paid extra money for meter[148]. Consumers of several

[145] Flow chart of commercial services are in Appendix A.21

[146] Urban Service Delivery Report, 2002

[147] Lineman, Helper, MLSS to Executive Engineer work as agents or brokers for new connection on a contact basis; Office staff includes Meter Reader, Lineman and other 3rd class staff (unauthorized) assistant such as '*Gatish*' and '*Bode Aami*' to conduct his regular duty in the office and in the field

[148] Appendix A: 24(c)

categories have paid bribes averaging a total of Taka 447 crore in FY 2005 for new connection. DESA consumers have paid the highest amount of Taka 252 crore as bribes. [149] The beneficiaries staff are the involved with new connections, load sanctions, and inspection reports as well as linesman, CBA leaders, Store keepers, Assistant to Executive Engineers, Superintendent Engineers, and CEIs. All these parties are supposed to be engaged in corruption

Table 14: Nature and irregularties and corrupt practices in cutomer-interface services

Serivce types/Activities	Nature of irregularties and corrupt practices	Remarks
All types of services of all electricity entities	Unusual delay in service providing (overall 27.8%) Ramapnt bribery (overlal 41.8%) Inflated bill (overall 9.8 %) Distribution of bill without taking reading of the meter (overall 1.4%) Others services (overall 19.2%)	Highest 41.9% in DESCO Highest 44.7% in REB Highest 31.6% in DESA Highest 2.6% in DESA Highest 19.9% in REB
New connection Process[150]	On average 27 percent[151] faced hararssemnts and corruption in getting new connections[152] (as per 2006 consumer survey), but now this rate has been increased at 79.5% (HHSC 2007 conducted by TIB) Tyranny of brokers/media and middlemen (such as brokers, meter readers, MLSS/fourth class employees, electrical contractors) Unusal delay if do not pay bribe Extram money for backward points, load sanction, demand note issue, new meter, installation of conection, permission from electric inspector Complex file processing or bureaucratic dilemma	94.2% enaged broker in order to avoid the hassle and to save time[153] 94% percent of the applicants took the help of brokers/agents (consumer survey,2006) Highest 103 days (30 days time limit, but at payment of bribe only 6 to 7 days. Rolling around 36/38 hands/tables.
Meter reading and billing	Providing erroneous[154]/exaggerated bills without reading the meter Not cross-cehck of the meter reading by supervisors[155] With the help of high offcials uses of false seals; breaking the seals of the meters Not following the schedule before start (the first working day) of the reading month The index of the meter with the company name, size, date of original and subsequent tests and the address of the premises are not available; furthermore, 15 years-old meters are also available at the market Bill are not served on time Bribe for meter change *(the highest amount paid by the consumers of the corporatized/socalled efficient organisation REB/PBS and DESCO)*[156] Complications in bill corrections[157] Wrong accounting system to estimate bills (when amont. Is less than the billing amount) More than 60% of the domestic meters are defective Not giving entry of the paid bill in the bank ledger as a result, office identifes those consumers as bill	86.2 % consumers in meter reading and 56.03% consumers in billing section experienced corruption and harraasemnts Almost 50% consumers of both PDB and DPDC (eralrier DESA) are dissatisfied over the meter reading and billing process of these entities. Unfortunately, a significant proportion of cosnmuers are also dissatisfied in socalled effient entities of REB amd DESCO (Figure 7) Earlier "millions of units consumed are shown as

[149] Detail calculation in Appendix A: 27

[150]Register the application form, Issue receipt to the consumers, Issue business release letter, Load survey through field inspection, Demand Note issue, Entry Bank Statement in the ledger section, Service drop construction, Issuing meter, Meter test and report, Examine service drop and meter seal, Submission of the Connection report by the staff,

[151] Appendix A:25

[152] There are three types of connection based on load for different level of consumers are LT (Sanctioned Load 1-7.5 KW), LTI (7.5 KW –up to 50 KW) and HT (50 KW and above).On the basis of load, different meter are used for single phase, 3-phase and also HT meter, but residential connection is 220 kwt, while commercial lines are 440 kwt. Temporary Connection is another type of connection

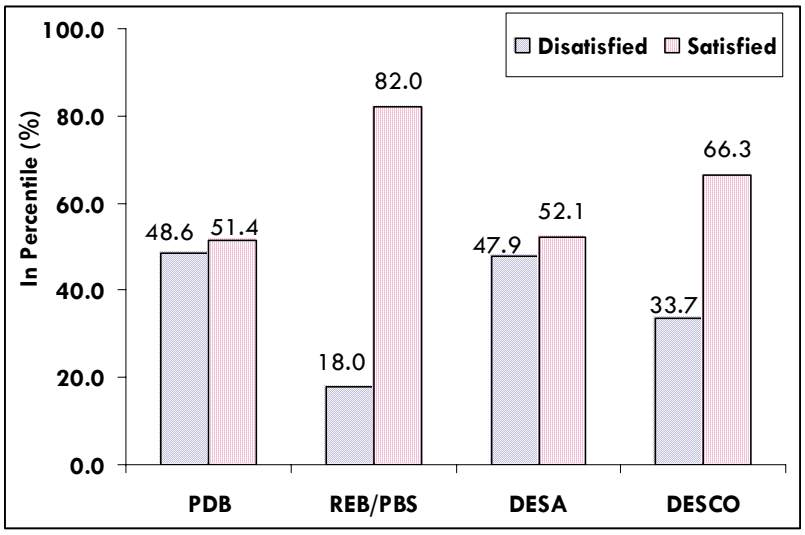
[153] Appendix A:24(b) and A:24(c)

Serivce types/Activities	Nature of irregularties and corrupt practices	Remarks
	defaulters	extra units in Chittagong Stadium Division of PDB. A huge discrepancy in billing has been identified among Monthly operation data, Bill Register,Ledger Control and Meter Control Sheets during 1995-2002
Low voltage	Cretaes due to illegal connections (gets aggravated during the peak hours of evening and morning)	
Implementation of Disconnection and Reconnection Rules	In the case of LTI and HT consumers, officials take extra money for reducing the bill, breaking the seal of the meter, not cut off illegal lines.	Though the rate of bypass of meters is only 16.4%, but revenue loss is high in DESA

2. Horrible incidences of meter reading and billing

Four types of meter readers are responsible for 20 percent billing of toal supply and rest of 80% of total supply is accounted by Asst. to Executive Engineers of the PDB/DPDC/DESCO[158]. The PDB and DESA follow the same system, but the REB and DESCO outsource the billing and commercial operations. Seevral means of violation of rules[159] in meter reading and billing. Violation of rules[160] in meter reading and billing are addressed in Table 14.

Figure 9: Experience based satisfaction of consumer over meter reading biing sections



Through meter tampering[161], hooking, and erroneous billing meter readers have become 'millionaires[162]. After becoming rich, 3rd and 4th class meter readers feel ashamed to read meters

[154] 39 percent of the consumers of all the distributor agencies claimed that they received excess bills and the meter readers with the help of ledger keeper and the billing section. In case of the unavailability of receipts, consumer has to pay the bill with a fine including a surcharge; the significance of the chi-square value

[155] Appendix A:30; Recently one meter reader has been caught from his house with huge materials of meter tampering

[156] Appendix A.32

[157] *such as* running from table to table and face at least three people before the correction can be made, as the concerned bill collector does not have the authority to correct the bill even if he realizes that the bill is incorrec

[158] Appendix A: 29

[159] Appendix A: 29.1.

[160] Appendix A:31

[161] In the Chittagong circle, Kalurghat S & D changed an HT meter (UNISCO Fabrics), but did not follow the meter changing guidelines. They did not maintain the sealing record properly. Specific data on the seal of the earlier used meter was missing. Fake readings were documented. The Reading at the time of investigation was 16,900 units. Tampering of the meter can be dealt with if the billed unit is compared by checking the meter. The billing

and appoint assistants such as "Gatish" or 'Bode Alma' to collect meter readings as well as meter tampering. *Adverse pilferage/ theft of electricity is also found in the 1st class reading section, in the case of load levels beyond 100 Kwt. Executive Engineers* deal with these types of billing, and they seek rent from the meter reader on a monthly basis. CBA leaders also get a percentage from the meter readers to protect their interests. Meter Readers take Taka. 5000 per month as bribe and reduce the bill amount by upto Taka.10, 000 – Taka.15, 000 of the total amount that is payable. This is the main cause of low revenue collection (Key Informants).

If any honest consumer, particularly, is the small industries category (such as cold storage, cinema halls etc.) where refrigeration plants, air conditioners had standard loads, does not agree to collude with the meter reader and wants to pay the correct bills, he is likely to be in serious trouble."[163]

The power distribution office sends the bill at more than 3 months' intervals which is illegal. If the bill is unpaid for more than three months, the consent of the executive engineer is required; unfortunately, the customers have to face a delay of three or four months for the bill to be corrected. If a consumer receives an incorrect bill, the utility agency often takes months together to resolve complaint and provide a correct bill

Penal Bills and Abuse of Leagal Options

Consumers' illegal use of electricity is considered as a punishable offence as per the Electricity Act 1910[164]. When the fine is high the customers contact the Executive Engineer/GM to reduce the fine, and he asks the costumer to talk to the Assistant Engineer/DGM in charge of feeders and come into an agreement with him. According to survey findings[165], Asst. to Executive Engineer seeks rent for re-connection/disconnection, and 50 percent of the linemen of the REB are engaged in taking bribes. The judgment is frequently abused in the case of penal billing upon the consumers. If any unauthorized electric supply is detected by the supply agency, the respective engineer/staff offer the consumers a contract and this illegal dealing is settled under the shadow of the legal process

Operation and Maintenance of distribution lines

When the consumers pay money illegally, the work goes to the supplier's side. The office then processes the work as a 'Public Safety Issue'[166]. The legal process is always violated; such as, when it is required to shut down a feeder, an announcement should be delivered earlier in the area of the particular feeder. However, the office frequently shuts down in the name of 'urgent need' without any notice after taking bribe from the consumers to do maintenance work. According to the survey, around 64 percent (the highest of 96 percent in DESCO) of all distributor agencies claimed that the supplier did not inform them earlier about the shut down or load shedding[167]. The area of corruption and the staff involved in maintenance works are listed below:

Table 11: Matrix of Maintenance Work

Working area	Area of corruption	Types of corruption	Beneficiary person / group
Load management	Load distribution for specific area/ industry	Ensuring maximum load	Switch board attendant Line man

record showed 10,000 units, but the actual figure was 16,900 units before checking the meter; then, the next two month's consumed units jumped to 36,500 units and 41,700 units. The previous meter had been tempered with by breaking the seal. At the time of checking it was found that the meter was running slow (67%). The office assists with theft of electricity in this way. (Source: Investigation, May 2006)

[162] In Chittagong Zone of PDB, recently a corrupt multi-millionaire have been identified, (Prothom Alo, June 2006)

[163] Husainy, TIB, 2000

[164] Article 20, "the consumers shall pay as penalty an amount of three times the basic rate for the fraudulent portion of the energy consumption; If the board can't identify or conform the time length of the fraudulent energy consumption by the consumer, such time length will be determine by the judgment of the board which will not be less than three month."

[165] Appendix A:34.a

[166] The office claims that if this situation continues, it will hamper public life and there may be chances of endangering lives; therefore, so it is required to change the placement of the pole soon. They should attached it to their routine work and change the pole's place as early as possible.

[167] Appendix A:35

Services	• Disconnection • Reconnection • Line and transformer maintenance	• Taking bribe to reconnect the line • Taking money for not performing scheduled disconnection • Collecting money by threating to disconnect the line	• Helper to Executive engineer • CBA Leader

Source: Group Discussion and In-depth Interview, 2006

- Transformer installation, change and service

For a new transformer, the consumer has to pay a large amount; otherwise, he/she faces several types of harassment. For instance, the office does not sanction the load if the money is not provided; the office processes the file on the basis of the payment; they use the excuse that existing transformer is overloaded and the consumer has to pay after the meter has been approved by the chairman; and they also claim that there's a shortage of transformers in the storage.

Along with other organizations, the REB and DESA officials earn illegal money from transformer related activities because consumers are willing to pay money to avoid the official harassments.

- Clumsy process of file approval in DESA

In all organizations, especially in DESA, the process of the file for the Transformer starts from the sub-assistant engineer level; the divisional office sends it through the SD and Executive Engineer to the SE office and verifies the reasons/justifications and places it with the SE. Then, the file is sent to the GM's office and finally, it is sent to the Chairman's office. It is a clumsy process. The office deals with two types of transformer related activities – a) Burning transformers; b) Load operation (new transformer).

Due to illegal connections or overloads at least one transformer is found burnt in each S & D. According to survey findings, the highest 54.4 percent customers of DESA reported that the officials demanded a bribe for changing the damaged transformer. 36.2 % of the PDB and 21% of the REB/PBS consumers also reported the demand for bribes for the transformer change[168]. The types of corrupt practices and beneficiaries from maintenance work are addressed below:

5. Load Distribution/ Extension and Harassment

Load is distributed on the basis of imported/entitled power. Both the PDB and PGCB charge bills each month for imported units by the distributor agencies. The Executive Engineer asks his subordinates (who are responsible for each feeder) to issue bills at an 80 % reduced amount of the imported unit, accounting for a 20 percent system losses which they consider to be acceptable (!).

A new load is sanctioned through the Divisional Office. If the load is below 7 KW, AE or DE can sanction the load, but if it crosses the limit, the Executive Engineer, Supervisor Engineer and Chairman have to sanction it. During the process, extra money has to be paid to the above mentioned officials.

6. Using a load beyond the approval limit

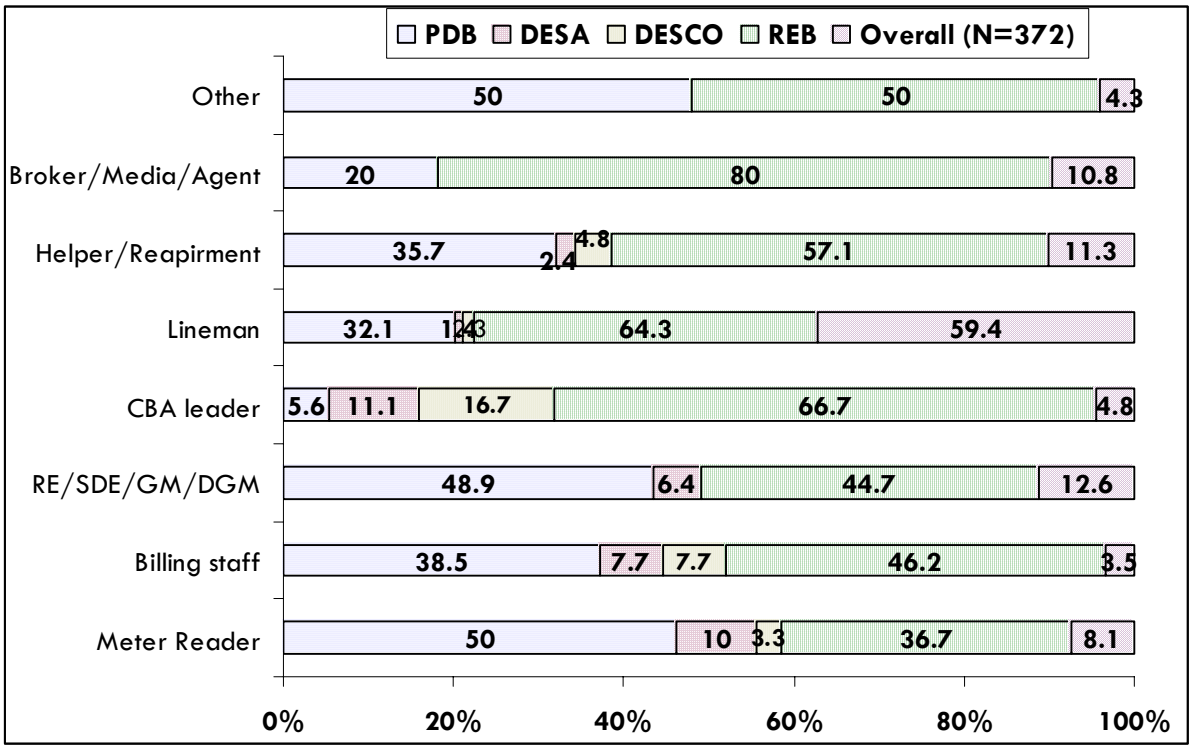
Chittagong 'M' Engineering were using direct 33 kv Kulshi Jalalabad line, 10 mw load electricity from number 1 circuit, but they did not pay the bill. Even emergency situation the 'M' industries were not allowed for load shedding. (Source: Intelligence report).

Benificaries from corrupt transactions

According to both studies on electricity distribution 2006 and household survey on corruption 2007 its is found that staff of several elvel of all entities are enaged in the transaction of unauthorized payments and harassing the consumers in providing the commercial services such as new connection process includes timely processing, Load sanction, submission of inspection report (expecially for HTI, meter reading and billing, graft of electricity and electric equipments supplied for consumers and other forms. (See Figure 10)

[168] Appendix A:36

Figure 10: % Enagment of staff of several levels in transactions of unauthorized payments of distributor entities



Source: HHSC, 2007

According to household survey on corruption 2007, the tyranny of borker/agent is the highest 80% in PBSs and significant proportion of meter reader, linemen and concern engineers/GM are also active in transactions of unauthorized payments.

Chapter Five:

Rural-Urban Disparities, REB's Performances and Consumers' Satisfaction

The PBS is an electricity distributing agency which works as the representative of the rural consumers under the Rural Electrification Board (REB). According to Section: 2, Clause 16 of the Rural Development and Agricultural Revolution of Bangladesh Constitution, "The GoB is bound to provide electricity for the rural people", the Bangladesh Govt. is bound to provide a reliable supply of electricity to the rural people at a feasible tariff. Keeping this in mind, the REB[169] was created in 1977 to make electricity available to all, to ensure the reliability and quality of the supply of the electricity, to provide electricity at a reasonable price and to enhance poverty alleviation by bringing rural areas under electrification and minimizing the disparity between rural and urban areas in terms of access to electricity. In reality, however, it is far behind in meeting these objectives. In the Nawabganj PBS[170], consumers held processions against irregularities and the Kansat tragedy is a 'stark example' of the REB's deviation from the target. Several irregularities, harassment or other forms of oppression led to the Kansat incident[171]which resuted in the loss of 23 valuable lives and around Taka.50 crore due to the indefinite 'Strike' and 'Obarodh' in Sona Masjid.

5.1 Irregularities and Corruptions in REB/PBSs

- Political intervention in establishing new distribution was reported by the President of Shariatpur PBS; he stated, "Around 130 km of distribution lines were constructed, violating Master Plan, and alongwith the distribution lines exist, there is no power supply. Besides, the people have to pay bribes to the GM or DGM for distribution line."
- PTA conferences has been not arranging for last two years
- REB has influences in the election of President of PBS
- GM of Several PBS took this political decision as a scope for their personal gains and they started to obey the order of MPs rather to follow the REBs instruction and in collusion with MPs, they have been engaged in corruption. Few examples of their corrupt practice are listed below:
  - i) According to the President of the Manikganj PBS, "The GM and Treasurers are engaged in corrupt practices; sometimes, the President/Director of the PBS is asked to sign cheques which have been back dated"
  - ii) allocation of distribution lines, new connections, transformers at the payment of bribe
  - iii) through bribe providing the connection of transformers violating the maximum distance limit
  - iv) at the payment of bribe to bring changes in the assumptions made for penal billing and not to execute the rule of the disconnection in the case of more than 90 days overdue
  - v) not to address the allegations of the consumers about the 'excess moving/mal-functioning meters' without payment of bribe
  - vi) through bribe resuming the obligation for contractors to pay the carrying costs of equipments for new distribution network and giving scopes to contractors to shift this cost burden to the consumers
  - vii) Horrible load shedding; "electricity becomes available for only 3-4 hours per day; high minimum charge; usual delay in new connection, sometimes 10-15 hours per day; illegal meter rent.'

[169] 70 PBSs or co-operative system

[170] Nawbganj PBS 2[170], energized power in 1995, provided 57, 500 connections or around 30 lacks of whom only 5.14 percent inhabitants have access to the electricity against the huge demand in 5 Upazillas (sub-district) including Shibganj where Kansat is one of the populous centers belonging to the office of Nawabganj PBS since 2005. To investigate into the reason of the Kansat occurrence, we have already interviewed the rebel consumers, reviewed other allegations from another PBSs and REB's commercial manuals.

[171] To withdraw minimum charge i.e. Taka.105 - Taka. 121, to withdraw meter charge i.e. Taka. 10 per month, Uninterrupted supply of electricity, To stop the harassment of the staff of PBS, Other facilities for PBS customers"

viii) The consumers also submitted the allegations on harassments for unexpected damage of meters, bribery in the collection of poles, illegal punishment fee for the theft of transformers, late fee and confiscating the meter

Though the REB/PBS show the rates of the new poles, the prices do not follow the accurate structure of the charges, and sometimes they charge more than the fee, ranging from Taka.3000 – 30000[172]. Facing this kind of harassment and injustice, the people of REB were compelled to make a consensus with the Poleee Bidyut Sangaram Committee on 14 demands[173].

Equity in Access: Rural - Urban Disparity in Electrification

Rural people are constitutionally entitled to enjoy a reliable supply of electricity at a reasonable tariff; however, based on the review of documents and surveys in 2006, great disparities among rural-urban consumers in terms of tariff rate, fees duration and supply of power and other day-to-day services have been identified in several cases. Table 12 below illustrates these disparities. Besides, the tyranny of the PBS`s staff is harassment and adds to this problem[174].

Table 12: Overview of Rural-Urban Gap/Disparity in Electrification

Issues	REB/PBS	PDB/DESA/DESCO/ WZPDCL
Tariff Rate		
Residential (to 100 unit)	Difference in different PBSs[175]	Average rate at Tk 2.7
Agricultural Pump	Commercial rate	On average Tk 1.84
Average Bill (FY 2006) paid by Consumers in May 2006	Tk 156.29 @ consumption of 38.07 unit or Tk 4.11 per unit	Tk 3.83 per unit (PDB) ; Tk 3.13 per unit in DESA
Minimum Charge	Tk 78 @ 25 unit; 73.7 % consumers pay less than the billed amount	Tk. 105 @115 unit; only 44.1 % reported higher bills
Meter Charge	Yes	No
Service Charge	Subject to Load Amount	Fixed at Tk 5.00
Rate of Load shedding more than 45 hours per week[176]	**99 percent**	93 percent
Liability of Load shedding	Upon Consumers at Minimum Charge	Absorb by high consumption
Time Limit for paying the Bill	One month	Three months
Punishment of accidental theft of any Transformer or Poles	Consumer had to share the 50 percent of the loss amount	Organization is liable for safety of any transformer
Load Shedding more than the 5 hours /day	70 percent consumers of REB	52 percent consumers of DESA
Load Expansion	On average Tk.7000 for LTI consumers	Average Tk 7292 for LTI consumers
Average Cost + Bribe for New Transformers	On average Tk. 3,00,000 is paid in REB	On Average Tk 2,00,000 in DESA;
Reconnection	Average 45 Months	Average 14 months in DESA
Reasons of Disconnection	79 percent are unknown	67 percent of DESA are unknown
Meter Change	71 days	25 days
Duration to Provide the New Connection	Average 3.22 months (Max 50 months)	Average 2.51 months (Max 21 months)
Exaggerated Bills	68 percent of REB/PBSs	60 percent (PDB) ; 64 percent (DESA)

[172] Mr. Golam Kabir Fakir, of Dharnagar Union, Shaibganj stated that the poles were set across his land at primary stage, but after a certain period when he demanded the PBS for the relocation of these poles for the purpose of building a new road, the staff demanded Taka 30000 as charge + bribe; since then, the matter has remained unresolved..

173 Withdrawal of meter rent; Minimum charge would be at least Taka.78 (against 25 unit); No punishment fee will be charged for providing side connection to the religious occasion or institution, No punishment fee will be charged without checking the meter accused for being tamper in the presence of customer; in case of loss of theft of any transformer or cable, PBS will not impose any penalty fee on farmer; Compensation for those who have already lost their member during movement, and injured people, A monument will be constructed to honor the people who lost their lives during movement, No fine will be imposed on the customers of Nawabganj PBS for their due amount; 'Doa Dibash' will be held on 4 or 23 January of each coming year

[174] constitution/ clause

[175] Tk 3.9 in Sylhet; Tk 2.7 in Gazipur;

[176] Appendix A:22

Issues	REB/PBS	PDB/DESA/DESCO/ WZPDCL
Harassment[177] faced by applicants for new connections	19 percent	16 percent

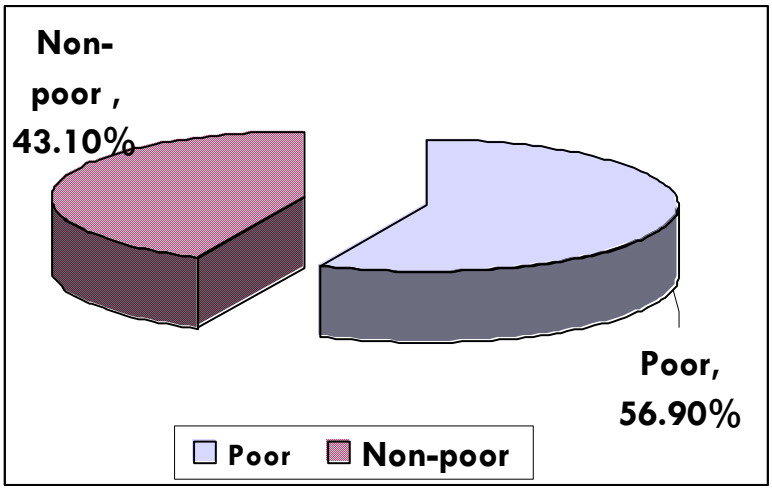
Source: PDB, DESA, REB, DESCO and Survey Data

Poor face more Harssements

Accoriodng to the findings poor are the more sufferer and the face more hararssemnts and corruption in getting connections and otehd ay to day services (Shown in Figure 11)

Figure 11: Incidence of corruptiona and Harssemnts

Faced by Different Income Group



Overall Satisfaction[178] regarding the commercial services of the Distributors

As per regulation, if-due to power shortage or any unexpected circumstances- the load shedding occurs for more than 45 hours, and then the minimum charge is not applicable. *According to the survey, on average 90 percent of the consumers stated that they have faced more than 45 hours of load shedding or the unavailability of electricity per week*. The performance of the distributors of the different services, according to the consumer's perception, is addressed in Table 16.

- New Connection:

On average 59 percent of the consumers of all agencies are dissatisfied with the services provided; among them, the highest 70 percent consumers of DESA are dissatisfied over the new connection process. Only 41 percent of the consumers (or score = 2.45) of the REB/PBSs are moderately satisfied with the new connection process.

- Equipment or meter, transformer or cable supply:

In the case of the supply of entitled equipment from the distribution office, 72 percent of the consumers have shown their dissatisfaction and among them the PDB has scored the lower of 1.84. The highest number (42 percent = 2.7) of the PBS consumers are satisfied with the current process of equipment supply. In the case of Tariff rate and billing[179]on average, 35 percent of all consumers have expressed their dissatisfaction with the current tariff rate and billing process. As usual, PBS shows the highest 47 percent (score = 3.17) satisfaction regarding the supply of billing paper on time. 47 percent consumers of the DESA are dissatisfied with the tariff rate and billing process. The Parliamentary Standing Committee on MEMR has asked for the identification of the irregularities in meter tampering, bogus billing, and non-registration bills in the ledger book.

[177] Appendix A44
[178] Appendix A:40
[179] Appendix A:40

- Official service and Day-to-day service

77 percent or ¾ of the consumers have already expressed their bitter experiences regarding the harassment they had to face in the distribution office. Only the REB/PBSs have been able to satisfy their consumers to a littlie extent (2.58). Unfortunately, on average 90 percent consumers of all distributors (below 2 out of 5 score) reported rampant harassment, bureaucratic complications and service provider's negligence at the office. Interestingly, the lowest rate of dissatisfaction (1.25) is shown in the PDB, which may be due to the inadequacy and the lack of accountability of the PDB staff.

- Magistracy and harassment of the Mobile Court

Surveyed consumers of the PDB have shown their highest dissatisfaction about the magistracy and mobile court activities and this is reflected in the low index (0.59).

- Overall Service of Power Sector

On average, 77 percent of the surveyed consumers (only 1.65 out of a 5.0 scales) of all the distributor agencies have expressed their dissatisfaction with the power sector's performance.

Though, as a service delivery institution, the agencies engaged in the distribution of power are obliged to provide a high standard of service. The extreme occurrence in Kansat has provided the basis for investigating the rural-urban disparity in terms of service delivery and other indicators of the power sector.

Based on the above economic loss and lower level satisfaction of the consumers the performance of power sector including all public and corporatized distributors are far away to reach the satisfactory level of commercial services. This is due to the lack of commitment and unaccountability of the staff. BERC can play vital role to make the sector more consumers friendly.

Perfromances of Bangladesh Energy Regulatory Commission (BERC)

BERC Act 2003[180] was passed in the parliament in March 2003 for the establishment of an independent and impartial regulatory commission to regulate the electricity, gas and petroleum sector. Under the Electricity Act 1910, the earlier responsibilities of the Power Division included working as a regulator to approve investment programs, to monitor the performance of the public sector entities/utilities, to approve tariff, to appoint electrical advisers and to perform other duties as a regulator. The BERC has taken over the responsibilities of issuing license, tariff approval, approving the application for captive generation, setting up security and safety standards, approving electrical installations' for safety measures, performing testing and inspection of electrical installations for the security and safety of the energy sector with the addition of the provision for public hearings, and scope of appeal to the court against government's decision in April 2004. The major inadequacy of the earlier act was that there was no provision for stakeholder participation in decision making. The commission is also responsible for protecting consumer's and industry's interests in order to promote a competitive market.
Though several experts questioned the justification of establishing the donor-driven BERC, the expectation of the general citizen from the commission is that it will ensure the preservation of country's interest at any cost, since Bangladesh has already lost the comfortable position in managing the energy sector in the last couple of years due to inefficiency[181] and corruption in several contracts signed with multinationals.

i) Current Capacity of BERC

Since establishment the BERC had been functioning with only seven staff members, including the Chairman. Government appointed primarily two members of the BERC in April 2004 and the Chairman joined in 4 June 2005, and the two remaining members have joined recently. Since February 2005, the BERC has been taking both financial and technical assistance of USAID. The tasks are yet to be started fully due to inadequate staff and a lack of co-operation from the Government. They have only started to provide the license for the captive generation under the policy framed by it and to formulate the methodology of tariff. It is also been observed that BERC is dependent on the assistance of USAID. Though the BERC is a watchdog agency, it is still accountable to parliament and the nation's citizens.

ii) Accountability of the BERC

The commission is only accountable to the parliament; the BERC is supposed to submit its annual report to the parliament through the ministry. The Ministry offers the report to the parliamentary committee within 45 days of submission. The commission gives priority to taking decisions based on the consensus of the members. On the basis of the consensus, they finalize the procedure and guidelines and then send the report to the review committee.

iii) Progress[182] of the BERC Activities

To finalize any guideline, the commission calls a public hearing by issuing a letter to the stakeholders. Any citizen can participate in this hearing, news of which is sent an advertisement in print media. In the public hearing, several important comments may be raised by the participants and finally the comments and feedback are considered when finalizing the guidelines. Aggrieved persons may appeal against the decision of the Commission in the High Court Division of the Supreme Court.

- Draft law and guideline on the methodology for the determination of tariff structure have been finalized, but the generation and transmission tariff and distribution tariff have not been developed yet
- Licensing Policy has been prepared; the BERC issued 16 licenses for captive power generation till Aug'06

[180] Act No. 13 of 2003

[181] Speaking at the discussion, Jason Czyzsaid of USAID "*politicians around the world are ill-equipped to handle energy-related issues and that's why 80 per cent of the nations across the globe formed regulatory commissions*"

[182] Appendix A:19

- BERC finalizes cases within 45 days, effective from the day of submission of the relevant document; in this case, there is a chance of bureaucratic complications and delays
- Though citizens don't have much participation, under the public hearing policy, a few cases or disputes have been finalized

Though the progress has been made, the several gaps and constraints still remain, which are addressed below.

iv) Constraints and weaknesses of BERC

The BERC was formed as part of the reform process, the WB influenced to set up as per the structure of USERC[183]. The formation of any regulatory commission is generally established based on a holistic approach; however in the case of BERC, this approach was not followed.

Mustafa H. Abdullah[184] commented, "Political interference in the regulatory affairs not only exists in Bangladesh but also in other countries but the degree of interference varies." The politicized administration of Bangladesh, and its frequent unethical influence and intervention.

Box-19: Limitations of BERC

- Donor Driven Agency
- Lack of political will
- Wide list of acts, but limited capacity
- Low focus on the conomic issues in the policy frame, guideline prpepartion by BERC
- Allegation against BERC as a carbon copy of PERC; rationales of target
- Bureaucratic dilemma in the Approval of

The commission is running slowly due to the delay in getting the approval of Organogram by MoF, MoEstd.[185]It has been said that "the formation of BERC has taken 17 years to be formed". According to Quazi Faruque[186], "the suffering of the common people has intensified due to the mess in the power sector. Energy and power sector saw several changes at the ministerial level but things did not improve; it is very frustrating that the BERC did not get a complete shape in spite of its formation in 2003. The BERC has become another ineffective commission in Bangladesh. Consumers will be benefited a lot if the BERC can exercise its power properly".[187] The citizen of Bangladesh wants to see the BERC being effective and its representative to ensure a justified tariff and play a vital role in preserving the nation's renewable and non–renewable resources.

[183] Expert in Power Sector,2006

[184] Chief of party of an USAID project for Regulatory Capacity Building in Bangladesh

[185] According to the current format, any law has to be passed through the following process – it goes to the respective ministry →establishment ministry → finance ministry → secretariat cabinet → ministry of law → then back through the same process and it finally goes to the BG press and is printed out as law; as a result, it cannot be effective fully

[186] General secretary of Consumers Association of Bangladesh

[187] Daily Star, 1 August 1, 2006

Chapter Six:

Conclusion and Policy Recommendation

A number of efforts have been made by the present caretaker government in order to mitigate the power failures. These efforts include the following:

- Cancellation of the tendering process of small power plants addressing the allegation of non-transparent process and attempt for re-tender.
- Identification of major targets to rehabilitate and maintain the power station, and sign of treaties to establish both public and private power plants. Unfortunately, it is alleged by local power company that the aid providing agencies have put several clauses in the bid manual so that they cannot submit the bid papers fulfilling the conditions.
- Approval of five IPPs (three foreign companies) of 1,930 mw capacity, increasing the share of IPPs in the total power generated up to 3,190 mw (62%). Unfortunately, no significant decision has been taken yet to identify the leakages and rampant theft of power.
- Appointment of two members for the BERC and development of several guidelines along with the methodology of the determination of power tariff. However, in this methodology, the peak and off-peak demand was not considered. Besides, there is no vivid guideline from BERC on how submitted documents and information by applicant IPPs would be cross-checked and the previously completed contracts between PDB and IPPs are out of the proposed formula.

This study was undertaken with the aim to diagnose the problems prevailing in this sector. The scope of this study includes review the state of governance in this sector, demand-supply shortfalls, the current procedure of power plant procurements and identifying the nature and extent of corruption, accountability of the staff, investigate the sufferings and harassments faced by the consumers, day-to-day services, billing, load shedding, and rural-urban disparities.

Information from both primary and secondary sources has been used in preparing the report. Sources of secondary information included acts and rules, published articles, periodicals, reports, as well as official documents. Primary sources of information include a consumer survey, informal discussion with stakeholders, employees, and experts of the power sector. The consumer survey covered the nature and the extent of corruption and harassments faced by the consumers. The cross section survey among all types of consumers (1027) was administered to find out the quality of services provided by different organization including PDB, REB/PBSs, DESA and DESCO.

Major Findings of the Study

Limitation and Ineffectiveness of the Electricity Acts and Magistracy

Around 25 percent cases related to bill defaulters or pilferages, illegal connections or distribution of power are unsettled. Major reasons of this unsettlement include: the act is not well defined and equitable with the current age, magistrates are not oriented about the act during courses, abuse of legal compulsion for continuing power supply to huge defaulters, same staff (might be linked with corruption) is engaged in both filing cases and investigation, absence of an independent investigation cell of power division, extent of punishments are almost same for small and large corruption, there is no obligation of incorporating the technical person in the judgment process, under collusion with the defaulter consumers, the distributor organization do not appoint efficient lawyer.

Adverse power crises and governance failures

The PDB's official report shows a shortfall of generation of around 2000 – 2200 mw. However, according to PSMP 2006, the total shortage of power would be around 4350 mw in 2010. The reasons for power shortages are identified below.

A. Policy Level Failures

The government failed to put adequate emphasis on the power sector; there has not been any clear and specific guideline to estimate the real demand and supply; there have also been violation of the PSMP in the form of politicization of the location, size and types of plants, emphasis on short-term planning, inadequate autonomy in making financial and administrative decisions, appointment of foreign consultants for rent-seeking purpose despite the availability of local hands, and imbalanced expansion of distribution lines for rent-seeking purposes.

- **Limitations and malpractice within the procurement process**

The procurement process in power sector has been distorted due to unwanted intervention in the procurement process, complexities of the bidding process, wrong evaluations, absence of uniform Technical Evaluation Committee (TEC), delay in hiring consultants and resolving disputes due to bureaucratic dilemma, corruption such as putting specific condition, nepotism, extortion by vested interest groups, collusion between the bid officials and bidders, false experience certificate submitted by bidders, appointment of contractors for maintenance and rehabilitations without any tender, abuse of funds by plant and policy-level staff, supply of low quality machinery violating the contract, and power purchase agreements made at high rates. As a result, around *Tk 4,007 crore or US$ 688 million (from purchase of the 6 power plants and outsourcing the maintenance and rehabilitation works to a foreign company) during 1996-2005 have been abused.*

- **Inadequate financial capacity**

Around 17000 crore Taka is required to meet the demand for power of 8000 mw by next 2010; but the concerned organizations have inadequate financial capacity due to i) cumulative increase of unpaid bills and unaccountable indebted organizations, ii) poor rate of collection (caused by high T&D losses, legal shelter taken by large bill defaulters, low density of consumers in several PBSs of REB), and iii) instantaneous increase of financial burden due to contract with IPPs at a floating exchange rate, iv) contract, under PPA, with IPPs at high tariff arte, v) high input cost of diesel based generation plants.

- **Constraints and inefficiency in reform measure**

The reform measure suffers from the absence of corporate governance and experts on the Board, absence of future guidelines, knowledge gap, inadequate commitment at the policy-making level, and absence of corporate culture among the sector staff, malpractice and widespread corruption in the corporatized units, and poor quality of services.

- **Conditional loans from International Financing Agencies and Its Effectiveness**

Conditions of aid agencies are sometimes unattainable such as ask for the privatization of all publicized units against the disbursement of specific loans/credit to the power sector, or conditional loan with the provision of spending a specific amount on consultancy purposes and hiring foreign consultants against the disbursed funds. The aid agency prioritizes the scope of investment of Western or developed/financially strong countries and more IPPs and also create pressure the GoB to pursue the interest of specific companies.

- **IPP policy and Its Inequality**

The provision of tax exemption on technical know-how, interest on foreign loans, capital gains, and share transfer for foreign investors have made them the beneficiaries of investment and enabled them to offer a competitive tariff. In collusion with the higher officials IPPs and RPP charges higher tariff and due to purchase at higher rate from IPPs and Rental Power Plant PDB would face at least Tk. 467 crore.

- **Ineffectiveness of BERC**

BERC is still ineffective owing to the lack of political will, lack of human resource and other resources, donor interference, political interferences.

B. Institutional or Administrative Malpractices

Irregularities, constraints and problems in HRM are caused by poor access to information or data and inadequate reliability of data, and inadequate recruitment of technical staff (10% to 15% of the posts are still vacant). The constraints of the HR management of the power sector include the absence of a human resource policy, complicated recruitment process, malpractice in the recruitment process, and frequent changes of the high officials, absence of effective human resource development programs, and rewarding the guilty and punishing the honest staff.

Several cases of corruption have been identified with regard to appointment of casual labor, commission of transfer, promotion, contracts and shelter with bribes, taking of bribes for HT connection by CBA leaders, payment of overtime without work, abuse of resources, and CBA leaders' intervention in the usual process of allocating residential facilities for the staff.

The accountability in this sector is weak due to stripping down the 'Detective and Investigation' department of the PDB, absence of a central database of the allegations submitted and the actions taken against the concerned staff, connection of corrupt staff with the CBA and high-level

officials, and absence of effective administrative and financial accountability of the high officials. This poor accountability system is one of the major reasons of the poor performance of the public power plants and abrupt corrupt practice.

C. Poor Performances of Public Power Plants and Corrupt Practices

The PDB has been supplying around 4000 mw, including around 2000 mw from IPPs, against a demand of around 6000 mw. The major reason of the *Poor Performance of Generation at Public Plants are* - lack of plan to replace the outdated or expired life time of public plants[188]; Unusual delay in taking decision on rehabilitation due to administrative and poor financial accountability; High cost of diesel based power generation; Lack of incentive or benefit for the efficient and honest staff members of the plant; Malpractices and abuse of inputs by the staff of the existing public power plants,

Malpractices and irregularities in Power Generation

The main obstacles to ensuring that the generation of power from the public plants is at the optimal level are mal-practice in hiring foreign consultants without any practical experiences, abuse of public money by vested interest groups for overhauling, maintenance and repair, and irresponsibility of the staff in storing and maintaining the imported/purchased items, theft of oil from the store, theft of spare parts, and sold equipment of the power stations.

D. Corruption in Transmission System

In the administrative and finance divisions of PGCB, corrupt practices include appointment of surplus CAs for a limited number of staff members, engagement of the same staff members for both the bidding process as well as billing section related to bidders, financial allegations, syndicating in the tender process, abuse of supplied input by submitting equipments without a serial number, and ignoring the national security related to KPI in order to create space for graft of materials.

E. Distributional Inefficiency and Reduction of Access to Electricity

The highest officially accumulated T&D loss is around 30 percent. The problems/failures/key constraints to bringing about the efficiency at the distribution level or the quality of supply to the consumers are i) unplanned expansion of distribution lines, ii) high non-technical or distribution loss, iii) poor accountability and inadequate monitoring of the staff, iv) abuse of supplied equipment or funds for local purchase, v) inefficiency in the operation and maintenance of distribution lines are the cause of several disputes between the REB and PDB/DESA, high technical losses and overloaded transformers, frequent hooking, burnt transformer and equipment, inadequate reliability of power supply, vi) CBA's illegal intervention and activities in the commercial service, vii) high technical losses due to poor maintenance, shortcomings in system design, expiry of the distribution network and poor maintenance, and viii) high load shedding.

High T&D Losses and Increase in Tariff

The gain from a 5% increase in the tariff would be around Tk 426 crore. If the non-technical/T&D losses could be reduced to 12% then the gain would have been Tk 1853.50 crore.

Irregularities and corrupt practices on the distribution sides

A few examples of corrupt practices are inconsistency in the balance sheet, graft of bills and tampering with the meter or making the meter slow, abuse of the funds through the purchase of low quality digital meters to reduce distribution loss and the supply of equipment or funds for local procurement of the '5 Town', '16 Town' projects, and replacement of low quality and smaller amount of equipment by the REB to the PDB.

Problems in Maintenance and Development

Problems in maintenance and development include political intervention in bidding process and allocation of work orders for maintenance and development to the recommended bidder, withdrawal of funds without the completion of work, and the supply of low quality input.

E.4. Abuse of Equipments from Store

Theft of brand-name meters without seals from the store, abuse of funds during emergencies or natural disasters, theft of oil, theft of electric transformers in the collusion with the staff, bogus

[188] only 37 to 40 percent of the plants have standard 85 to 90 percent level, out of 63 around 42 or 66 % have already exhausted their life time and 29 plants are serving at 100 to 300 percent of their life time; 168 units of 20 power stations was 3867 mw, but the de-rated capacity of the power plant is around only 3164 mw

supply of input from the store, embezzlement of bills/revenue from agricultural consumers, and work orders for amounts over the approved funds are the major areas of corruption on the distribution side.

F. Corruption and Harassments Faced by Consumers

The findings in this section (F) are illustrated from the consumer survey which was conducted in June, 2006.

New Connection Process and Harassments faced by Consumers

On average, 27% of the consumers face harassment during the new connection process. Around 80% of the consumers of PDB reported unusual delays in the new connection process. The 30-day time limit goes up to 103 days, but at the payment of a bribe in place of 30 days they took only 6 and 7 days for getting a new connection (in case of DESA and PDB respectively). Application files usually move around 36/38 tables until the applicants finally gets a connection.

1. *Tyranny of the Broker*

In case of both LTI and HT connections 94% of the applicants took the new connection through brokers/agents to avoid the hassle and to save time. They include meter readers, MLSS/fourth class employees, and electrical contractors. In case of taking connection from REB, 42.4% took assistance of brokers. Usually, the contracts for getting new connections from the brokers include 40% contract for the whole package, 55% for urgent connection, and 5% to avoid hassles.

2. *Load approval and collection of meter*

In DESA areas, without even visiting the place, the CEI provides the certificate against the average bribe of at least Tk 15,000. 61% of the applicants influenced the officials or paid extra money for getting meters, while 55% of DESA paid extra money for meters.

3. *Transactions of approximate total bribes for new connection and beneficiaries*

Consumers of several categories paid bribes worth Tk 447 crore in FY 2005-06 for new connections. DESA consumers paid the highest amount of Tk 252 crore as bribe. The beneficiaries of the bribes from providing a new connection, load sanction, and inspection report are line man, CBA leader, store keeper, assistant to executive/superintendent engineer, and CEI when are supposed to be engaged in corruption.

Meter Reading and Billing Procedure

- The appointment of illegal helpers ('Bode Alam' and 'Gatish') by the meter reader and adverse pilferage/theft of electricity is found in the 1st class reading section in the case of load levels beyond 100 Kwt.
- With the help of the Executive Engineers, meter readers use false seal. They also break the seals of the meters collected from the store and tamper with them and then, replace the seals. They do not make and follow the schedule before start (the first working day) of the reading month; neither do they follow the rules of meter sealing. Usually, executive engineers do not record the meter's company name, size, and date of original and subsequent tests and the address of the premises. Also they do not serve bills on time. Consumers, on average, had to pay an extra amount of Tk 2,056 as bribes to meter reader, lineman, foreman, sometime through the Gatish of the meter reader, if he/she wanted to change the damaged meter.
- Usually, meter readers and supervisors do not provide the correct bills to the consumers. Readers do not visit the consumers' field. 39% of the consumers informed that Supervisors did not cross-check the meter reading and issuance bills. The same percentage also feels that the office provides exaggerated bills (chi-square values are significant).
- C*onsumers face harassment such as delays in getting their monthly* bills, and the consumers also face delays if the bill needs correction as the bill maker has no authority to correct the bill.
- The highest (54.4%) customers of DESA reported about the officials on demanding bribe for changing the damaged transformer. 36.2% of the PDB and 21% of the REB/PBS consumers also reported the demand for bribes for the transformer, and clumsy process of file approval in DESA.
- The highest (39%) heavy industries faced machinery and equipment disorder due to voltage fluctuation, and 35% of the residential consumers faced damage to their electrical equipment due to power outages. Since FY 2005-06 almost 90% of the consumers reported about load shedding more than 45 hours and hence, not withdrawal of the minimum charge.

⇨ *Opportunity loss of productivity/the export due to not availability of electricity* in the 90% of all RMG factories (due to use of the diesel-based generators) is additional 5%, or is roughly US$ 290 million per year[189]. The economic/welfare loss is equivalent to Tk 27,361 crore (or worth of 9,122 mw), which constitutes of the losses faced due to power shortages of Tk. 8355.35 crore (FY 2005-06), the unavailability of electricity in the 90% diesel-based generators used in the RMG sector is 1824 crore Taka (FY 2005-06) and the money value of the excess T&D/non-technical losses (theft) is of 18930 crore Taka (FY 1994 – FY 2005).

G. Irregularities and Corruptions in REB/PBS

- Political intervention in establishing new distribution line violating the existing policy,
- PTA conferences has not been arranging for last two years,
- REB's influence in the election of President of PBS, break down of the chain of command among REB staff,
- GMs are more committed to MP rather the line supervisors, taking bribe by GM/DGM of PBSs in allocation of distribution lines, new connections, transformers for agriclututral purposes, providing the connection of transformers violating the maximum distance limit, bringing changes in the assumptions made for penal billing and not to execute the rule of the disconnection in the case of more than 90 days overdue. Besides, GM sometimes do not address the allegations of the consumers about the 'excess moving/mal-functioning meters', unexpected damage of meters, bribery in the collection of poles, illegal punishment fee for the theft of transformers, late fee and confiscating the meter without payment of bribe and withdraw the obligation for contractors to pay the carrying costs of equipments for new distribution network and giving scopes to contractors to shift this cost burden to the consumers at the payment of bribe.

H. Rural-urban disparities

These were evident among the consumers of the REB. The rural clients are deprived more as they face higher tariffs, relatively high minimum charge, service charges, higher load-shedding than the urban areas, poor time limit for the submission of due bills, liability due to theft of equipment, harassment and bribes for new connections such as delay in getting a connection, delays in reconnection, harassments during meter change, and in the billing and disconnection of lines.

I. Overall Satisfaction regarding the commercial services of the Distributors

On average, 77% of the surveyed consumers of all distributor agencies have expressed their dissatisfaction (1.65 out of 5.0 score). In case of new connection, 59% consumers of all agencies were dissatisfied. However, 41% consumers (or score = 2.45) of the REB/PBSs stated that they were moderately satisfied. 72% were dissatisfied with the supply of meter and other equipments. On average, 35% of all consumers showed dissatisfaction with the current tariff rate and billing process. Unfortunately, on average 90% of the consumers of all distributors (below 2 out of 5 score) reported about rampant harassment, bureaucratic complexities and service provider's negligence. Consumers of the PDB expressed the highest level of dissatisfaction with the magistracy and the mobile court activities.

Policy and Institutional Recommendations

A. For Improvement of Governance and Combat Corruption

I. Policy Level

- An 'Independent Commission' should be formed to prepare the 'Vision 2025' plan for the power sector.
- PMO/Ministry should formulate only policy level decision and the executive decision (on including public procurement) should be adopted by the Board of the concern distributor agency
- A full fledged and honest Minister/Adviser and technically sound Secretary with adequate power to take any policy level decision independently should be appointed.

[189] Star Weekend Magazine, 2 March 2007

- An experienced professional with leadership quality should be appointed as CEO and other board members should be professionally committed for all distributor units of the power sector.
- Power Cell and Hydrocarbon Unit should be attached to PDB ad Petrobangla respectively rather than the current attachment with the Ministry
- The government should give the deadline to all public, autonomous and private agencies' to pay the outstanding to increase the financial capacity.
- An Ombudsman for energy sector including power division should be appointed soon.
- Intervention of vested interest group in procurement of the plants should be removed.
- A review committee consisting of High Court judges, economists, concerned experts, economists and senior citizens should be formed to work as watchdog as well as to review the procurement process.
- A high-powered committee should evaluate the transparency and accountability of the PGCB and the steps should be taken as per the recommendations made.
- The 'Right to Information Act' should be approved and implemented soon and the document of all the big procurement and financial performance should be made available to the people.
- As a holding company, the PDB should be downsized and bring the dynamism in the works through the practice of corporate culture
- Financial, HR and commercial policy should be introduced soon by local experts
- Political intervention in allocation of the distribution network has to be stopped by law.
- 'Engineers Act' should be introduced soon
- Ministry should not allow the share of foreign IPPs more than 25 percent of total generation and the rest amount should be generated by both Govt. and local IPPs
- In the universities, more funds to conduct research on alternative energy and the governance should be expedited.
- Govt. should only accept the unconditional loan from international financing agencies and will offer 'Bond' or 'share certificates' to Bangladeshi citizens
- PSMP should be a legislative document so that each Govt. is bound to follow and it should be prepared through consultation with multidisciplinary experts
- Ministry should make a contract with DESCO to supply the required number of 'pre-paid meters' for all consumers by next 5 years

II. Electricity Act and Effectiveness of Court

- Existing 'Electricity Act' The law should be revised with the provision of the justifiable punishments with respect to the extent and nature of corruption
- Under the "Speedy Tribunal Act" special courts and required judicial magistrates should be appointed to make the judgments of the ongoing cases.
- The Inquiry and Prosecution units should be different and free from any intervention.

III. Efficient and Transparent Procurement Process for New Plants or Others

- The Ministry should evaluate the bids before the presence of media, citizens and bidders.
- Import/renting of all out-dated/old machineries should be band by law and will encourage to import the 4th generation units
- Ministry should justify the bid offers including the price as per the world market
- Agencies should allow the highest two week time limit for publication of Tender Invitation Notice.
- Both bid-related staff members and bidders should be oriented on PPR 2003; and incentives for bid-related experts, which should not be transferred too soon as well.
- Unsolicited proposal should be accepted through transparent process.
- Exemplary punishment should be ensured for the bidders who fabricate documents, false experience certificate, irregularities in quoting price, losing or hide the important documents.

IV. Organization/Institutional Level

- Recognized and experienced professionals should be appointed as Chairman or members for BERC.
- PDB should be empowered to prosecute the bill defaulters including public agencies.

- The 'Detective and Investigation' department should be reinforced by appointing the honest, efficient and committed staff.
- To manage the information on bill collection, financial and human resource and purchase as well as storing a complete MIS system should be introduced
- 'One stop' center for clients should be introduced
- PTA conferences of REB should be arranged regularly
- REB's influence/intervention in the election of President of PBS should be stopped and Board Chairman should be selected from REB Officers
- Staffs at all levels should be brought under the effective and transparent accountability system
- Instant punishment to the GM/DGM of PBSs in the case of any bribes charged from consumers

B. Efficiency and Governance in the Generation

- The Power Division should take all out efforts to settle the ongoing procurement process of plants to ensure the low cost of establishment.
- The Ministry should take decision to use alternative sustainable technologies such as nuclear power plant for national energy security.
- GoB should ensure at least 51 percent shares of users/Bangladeshi citizens (outside and inside the country) into the generation
- The industrial zone, EPZs and PBSs/Investors at district level of which demand is more than 1 MW should have captive power generator/allow to establish independent power plants
- The concern management should be given the financial power to conduct the scheduled maintenance and rehabilitation work of the power plants
- Local experts should be appointed for rehabilitation and maintenance purposes
- Attractive financial packages (salary, incentive, bonus, training) should be provided to the power plants Engineers and other staffs
- The higher authorities should visit the power plants regularly and spend time with the engineers and employees to listen to their prevailing problems and try to solve them
- In the case of establishing the IPP, the provisions should be the same for local and foreign investors and the guarantee on FSA with IPP should be removed
- The adjustments of certain tariff components such as variations in Taka/Dollar exchange rate, fuel price and inflation rates should be brought soon

C. Efficiency in the Distribution Sides

C.1. Reduction of High T&D or Non-Technical Losses

- Pre-paid meters should be introduced at all ldistributor agenices.
- The meter reader for specific 'meter route' should selected randomly every month.
- Several 'mobile courts' should be constituted to disconnect the illegal lines and collect the outstanding bills from both public and private organizations.
- Election process of CBA should be reformed to bring the transparency of their activities and political affiliation of CBA should be banned.
- Underground cable lines should be introduced and brought under strict monitoring
- Meter readers who have spent over three years in the same place should be transferred.
- Independent feeder for industrial zone and direct connection to the consumers who are believed to be faithful.
- The inspection of the electric meters, especially of HT consumers, should be undertaken by third party, excluding the concerned distributors.
- The distribution system of the BPDB and DPDC (earlier DESA) should be outsourced in large scale
- To empower high officials of the concern agency in the case of the transfer of the staff.
- The feeder database of consumers, meter reading sheets, ledger and monthly payment bills should be kept and checked regularly.
- Report of Energy balancing and effectiveness of meter of DPDC (earlier DESA) should be available for public to know the exact system loss.
- Meter reader of the concern feeder should be accountable to adjust the monthly revenue against the disbursed total amount.

D. Effectiveness of Reform Measures

- Government should have clear role/position about the future reform process
- A specific guideline or future reform process should be initiated based on the evaluation
- Full autonomy of power division to take any decision on plan of operation, agreement, regulation, human resource management of corporatization
- Irrespective of public or private, an optimum mix of the efficient, honest, and committed professionals for the newly and upcoming coproratized units should be appointed
- In the case of HRM or staff recruitment, Incentive package for efficient staffs and 'Hire and fire policy' should be followed

E. Effective BERC

- Increase of the licensing fee at progressive rate to bring the financial self-sufficiency of BERC
- Co-operation between BERC and MPEMR must be increased in the planning and designing of the future development of the sector, and the determination of tariffs
- BERC's activities should receive wider coverage in the print and electronic media in order to make the process transparent
- BERC should consider the peak and off-peak issues in the determination of the methodology of generation tariff and also a transparent mechanism of auditing the submitted documents by IPP
- Status and other regulated benefits for BERC officials will be ensured soon as per rule.

F. Human Resource Management

- A dynamic and feasible 'HR policy' for the power sector should be prepared.
- A central database on Staffs' joining date, current position held promotion, expected retirement dates and place or area of work and duration of stay and trainings.
- In the case of recruitment OMR based recruiting system of REB can be followed.
- The result would be published with the result scores and appointments should be ensured based on the serial list against the vacant posts.
- To arrange the training programs for the staff based on the evaluation of their demand.
- Existing salary structure and other benefits of the staff should be feasible with the market price.

Power is the fuel of the modern society. As a progressive nation, we can't miss the train of development, economic growth and overall productivity. The policy makers and the citizens should place priority on the power sector and make it a more dynamic and dependable industry, free from all sorts of corruption. Furthermore, the access to the power should be at an affordable tariff for all the people of the country by the year 2015.

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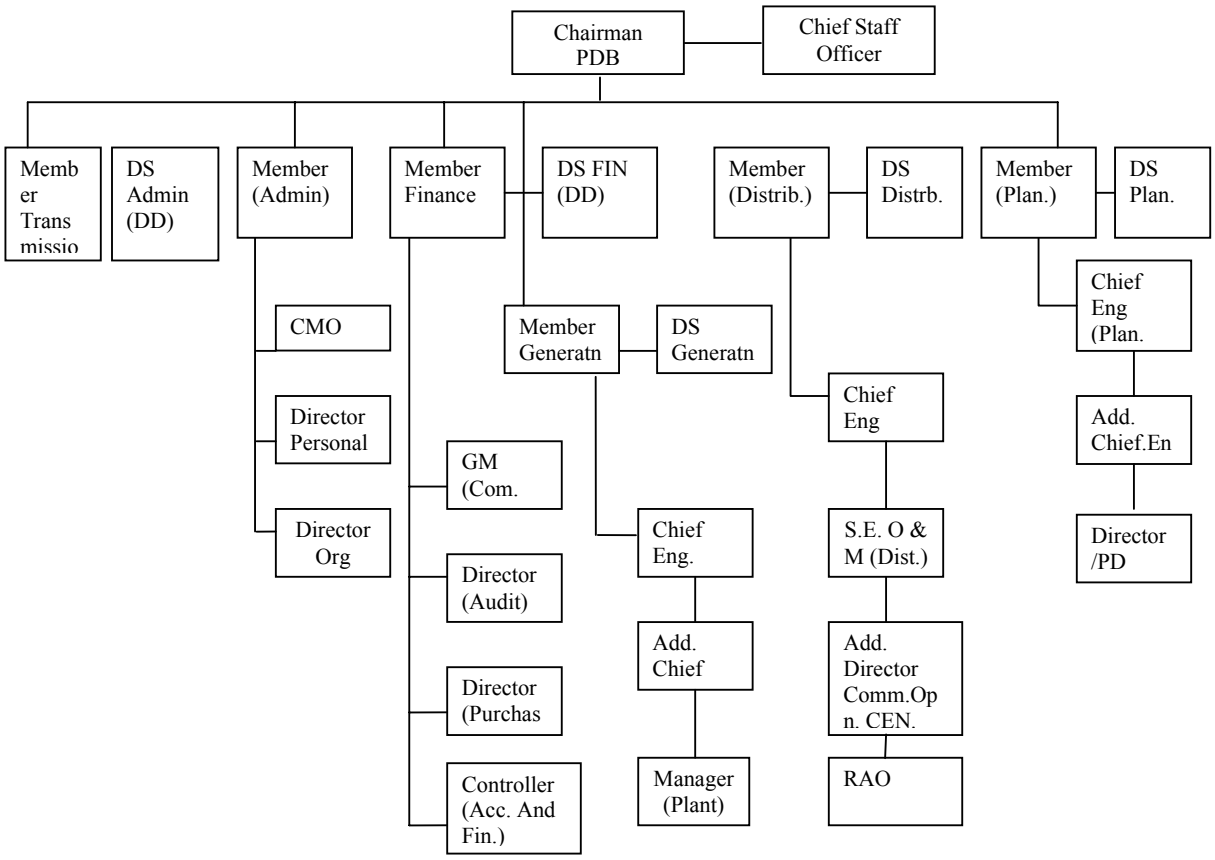
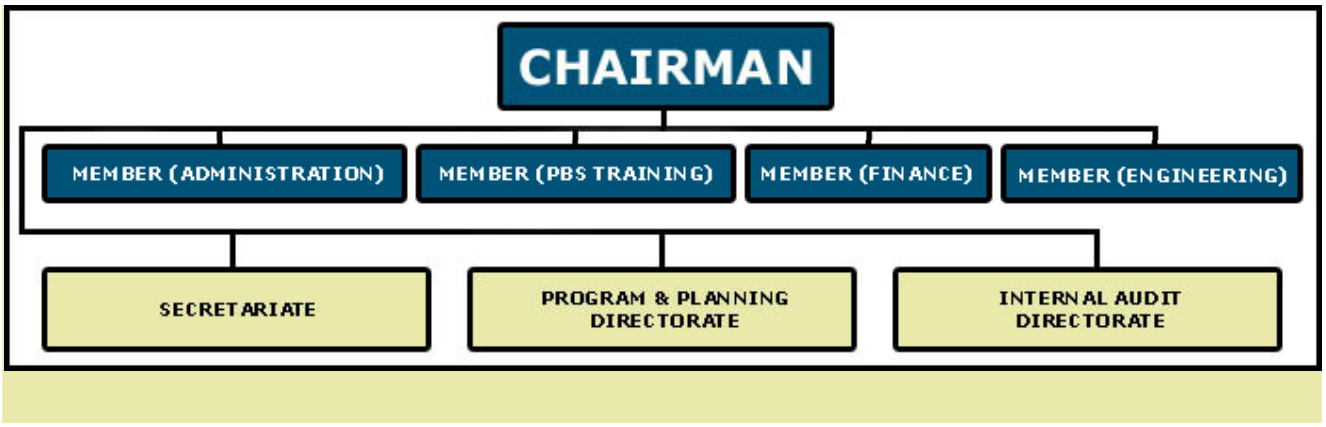
Appendix

A: 1 Organogram of Power Development Board (PDB)



A: 1(a) Organogram of Rural Electrification Board (REB)



A: 2 Sector-wise unpaid bills (up to Dec'2006)

(In million Taka)

DESA	DESCO	REB	WPZCL	Total
35,227.19	658.638	2541.24	413.195	38,840.26

Source: Power Cell, Mar'07

A: 3 Future Reform Agenda

Generation

- BPDB will be converted into a holding company under companies Act
- The existing generating stations of BPDB, a holding company will be converted into a number of corporatized entities.
- Direct Foreign Investment will be encouraged
- New power plants will be setup under own financing, commercial bank loan and fund collection from Stock Exchange alongside IPPs
- Corporatization of North Zone and South Zone of BPDB and distribution is under process

Transmission

- PGCB will remain responsible for transmission business in the whole of Bangladesh.

Distribution

- Bangladesh Power Development Board (BPDB) will be converted into a number of subsidiary companies under BPDB Holding Company
- DESA will be converted into corporatized entity

A: 4 Reforms and Restructure of the Sector Undertaken

Sector/ Policy	Time	Reform Under taken
Policy Regulation/ Planning	1992	Industrial policy mended to open the power sector for private investment
	1993	A high power inter-ministerial committee constituted to recommend further reform measures to be undertaken. The Committee recommended unbundling of the sector according to functional lines and establishment of an independent regulatory commission
	1996	The National Energy Policy, prepared in 1995 and adopted in 1996, recommended vertical separation of the sector and establishment of the Energy Regulatory Commission (ERC)
	1998	Policy Guidelines for Small Power Plants in Private Sector
	2004	Vision Statement and Policy Statement on Power Sector Reforms in June 2000
	Dec' 03	Energy Regulatory Commission Act
	May' 04	Adoption of National Energy Policy inclusion of Power sector
	Nov' 04	Revision of Private Sector Power Generation Policy of Bangladesh
	2004	**Approval to convert BPDB into a Holding Company in January 2004**
	2006	Power System Master Plan
Distribution	1977	Form Rural Electrification Board to distribute the electricity in rural area country
	1991	DESA was created to distribute electricity at Dhaka
	1996	DESCO was formed under company Act and took charge partly of DESA area
	2003	Internal reform of PDB i.e. Strategic Business Unit –SBU constriction under the guidance of Power Cell
	2003	Form West Zone Power Distribution Company Ltd.
Transmission	1996	Power Grid Company of Bangladesh (PGCB) created in 1996 to take over transmission business from BPDB. All 230/132 KV transmission lines are handed over to PGCB
Generation	1995	Power System Master Plan for generation
	1996	The Private Sector Power Generation Policy was adopted
	2002	Corporatization of Ashuganj Power Station in 2002
	2003	Haripur Power Station (99 MW) under SBU/PTA
	2004	Revision of Private Sector Generation Policy

Source: MPEMR, 2006 (htt.p://www.powercell.gov.bd/index.php?page_id=229)

A: 5 Human resource of power sector

Organization	Officers (including Technical)	(3rd and 4th class)	Total
Power Division	32	34	66
BPDB	2519 (16.16%)	13069 (83.84%)	15588
PGCB	797 (51.02)	765 (48.98%)	1562
DESA	570 (17.73)	2644 (82.27%)	3214
DESCO	128 (15.40)	703 (84.6 %)	831
REB (Own)	729 (45.03)	890 (54.97 %)	1619
REB/PBSs	995 (4.02%)	23,733 (95.98 %)	24,728
WZPDCL	277 (11.04 %)	2233 (88.96)	2510
APSSCL	117 (21.47 %)	428 (78.53 %)	545

Source : Power Cell, February 2007

A.5.1 Vacancy in BPDB

Position/ class	Allocated staff	Current staff	Vacancy	Rate of vacancy
Technical	1233	1064	169	13.71
Non-technical	458	368	90	19.65
First Class	1797	1525	272	15.14
Second class	1189	1016	173	14.55
3rd and 4th class	18286	13055	5231	28.61
Total	22963	17028	5935	25.85

Source: PDB. 5 Feb'07

A: 6 Forecasted Demand Supply gap in Power Sector

Fiscal year	Total Import	Net Generation
FY 1994	9684	9784
FY 1995	10995	10806
FY 1996	11748	11475
FY 1997	12244	11858
FY 1998	13375	12870
FY 1999	15778	14450
FY 2000	17741	15563
FY 2001	20306	17021
FY 2002	22153	18433
FY 2003	24484	19404
FY 2004	26962	21068
FY 2005	27579	22252
FY 2006	29163	22948
FY 2007	31254	24265
FY 2008	33435	25638
FY 2009	35582	27000
FY 2010	37564	28253
FY 2015	46742	34346
FY 2020	56396	40554
FY 2025	65939	46743

Source: Done by Author based on PDB Data 2006

A: 7 Current Status of the proposed power plants

	Generating Station	Type of Fuel	Capacity	Project Cost		Commissioning	Source Fund	Current Situation
				Local	Foreign			
	Under-construction		MW	(Million Taka)		Expected Date		
Public Sector								
1	210 MW Siddhirganj Thermal PP	Gas	210	10807	5449	Apr-04	Russian suppliers' credit	The construction works is in the progress
2	Barapukuria 300 MW Coal Based Thermal PP	Coal	250	16349	9411	Jun-05	Chinese supplier's credit	Has been commissioned
3	Tongi 80 MW Gas Turbine PP	Gas	105	3880	2369	Oct-04	Chinese supplier's credit	Has been commissioned
	Sub-Total =		565	31036	17229			
New :Planned								
Public Sector								
4	Sylhet 150 MW CCPP (100 MW CT) Power Evacuation Facilities	Gas	100	3427	2026	FY 2006		Negotiation with EDC is going on
5	Siddhirganj 2*150 MW Gas Turbine P/S (Power Evacuation Facilities)	Gas	300			FY 2006	World Bank	Contact with World Bank has been done; EGCB has been appointed as consultant;
6	Saidpur 100 MW peaking power plant	HSD	100	3230	2088	FY 2006		Tender Evaluation is in the process; Yet to sign with any company
7	Siddhirganj 2x120 MW peaking PP	Gas	240	6851	4185	FY 2006		Tender Evaluation is in the process,
8	Chandpur 150 MW CCPP and (Power Evacuation Facilities)	Gas	150	2820	1697	FY 2007		Harbin have got the work order, another 2 and half years will be required
9	Sylhet (Fenchuganj) 90 MW CCPP - 2nd phase	Gas	90	5059	3575	FY 2006	IDB	Delay in project implementation, Not possible to start before 2008
10	Haripur 150 MW CC PP	Gas	150	5993	4136	FY 2007		Finance expected from JBIC
11	210 MW Khulna Thermal Power	Gas	210	6561	3614	FY 2007	Chinese supplier'	Approval of Chinese

	Generating Station	Type of Fuel	Capacity	Project Cost		Commissioning	Source Fund	Current Situation
				Local	Foreign	Expected Date		
	Under-construction		MW	(Million Taka)				
	Station						s credit	supplier's credit is in process; Not yet to be funded
12	Bhola 150 MW CCPP	Gas	150	5754	3828	FY 2007		Negotiation with IDB is going on
13	Khulna 100 MW Peaking PP	Gas	100	3698	2387	FY 2008		Not yet to be funded
14	210 MW Siddhirganj Thermal Power Station Unit #2	Gas	210	6445	4263	FY 2008		Tender under evaluation
15	Bheramara 450 MW Combined Cycle Power Plant(Including evacuation facilities)	Gas	450	17466	9478	FY 2009		Not yet to be funded
16	Kaptai Power Plant extension 2x50 MW (6th & 7th unit)	Hydro	100	5964	3593	FY 2009		Finance expected from JBIC
17	Bogra 450 MW CC PP	Gas	450	15131	9996	FY 2010		Not yet to be funded
	Sub-total		2620	92152	56939			
	Private Sector							
Sl. No	Generating Station	Type of Fuel	Capacity	Project Cost		Commissioning	Status (2002) / Source Fund	Current Situation
				Local	Foreign	Expected Date		
	Under-construction		MW	(Million Taka)				
18	Baghabari (West Mont) CC: 40 MW ST	Gas	40			FY 2006	ST addition to existing 90 MW	99 % Completion of constriction works, Expecting commissioning date Sep'06
19	Baghabari (West Mont) 130 MW CC (90 +40 MW) ST (2nd Phase)	Gas	130	3900	3120	FY 2005		Expected commission in June'2007
20	Sirajganj 450 MW Combined Cycle Power Plant /JVC	Gas	450	13807	8828	FY 2009	Approved by the GoB	Yet to sign contact with any company; Before 2009, plant will not in operation

	Generating Station	Type of Fuel	Capacity	Project Cost		Commissioning	Source Fund	Current Situation
				Local	Foreign	Expected Date		
	Under-construction		MW	(Million Taka)				
21	Meghnaghat 450 MW CC (Unit -2)	Gas	450	12050	7710	FY 2008	Tender invited	Project works started in FY 2002, Orion signed one and half year back but did not start construction
	Mixed Sector /RPC							
22	Mymensigh (RPC) CC : 70 MW ST	Gas	70			FY 2005		ST addition to existing 140 MW
23	North Dhaka (RPC) 450 MW CCPP	Gas	450			FY 2006, FY 2008		
	Sub-total =		1590	29757	19658			
	GRAND TOTAL (FY 2004 - FY 2007)		2845	104429	66951			
	Public Sector		1875	78288	49606			
	Private Sector		970	26142	17345			
24	Small Power Plants 10x20 MW		200					Proposals from IPP has been incorporated, another year is required

A: 7.a. Life time of the power plants

Duration of Life Time (In Percentile)	Frequency	Percent	Valid Percent	Cumulative Percent
0 thru 50	10	15.4	15.4	15.4
50.01 thru 75	5	7.7	7.7	23.1
75.01 - 100	8	12.3	12.3	35.4
100.01 - 200	19	29.2	29.2	64.6
200.01 - 300	8	12.3	12.3	76.9
Not reported	15	23.1	23.1	100
Total	65	100	100	

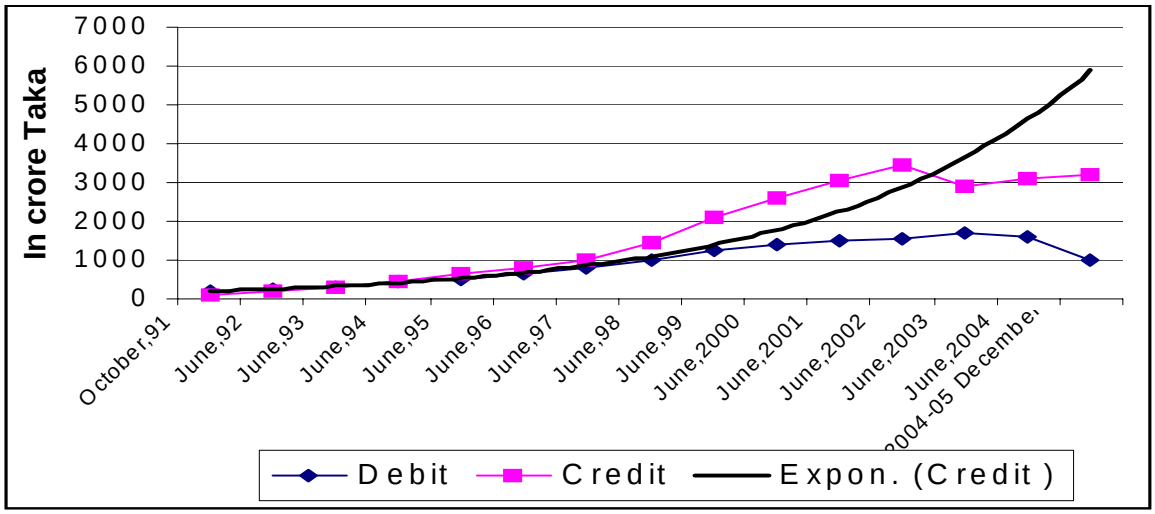
A: 8 Trends of Revenue Expenses

(In Crore Taka)

Year	Revenue Expenses	Development Allocation	Development Expenditure
1998-99	7	1423.42	1497.48
1999-00	7	2005.28	1994.82
2000-01	8	2118.6	1972.3
2001-02	2	1909.84	1700.37
2002-03	2	2339.44	2352.01
2003 -04	2	3092.18	2903.14
2004-05	2	3307.63	3187.82
2005-06	2	3119.98	

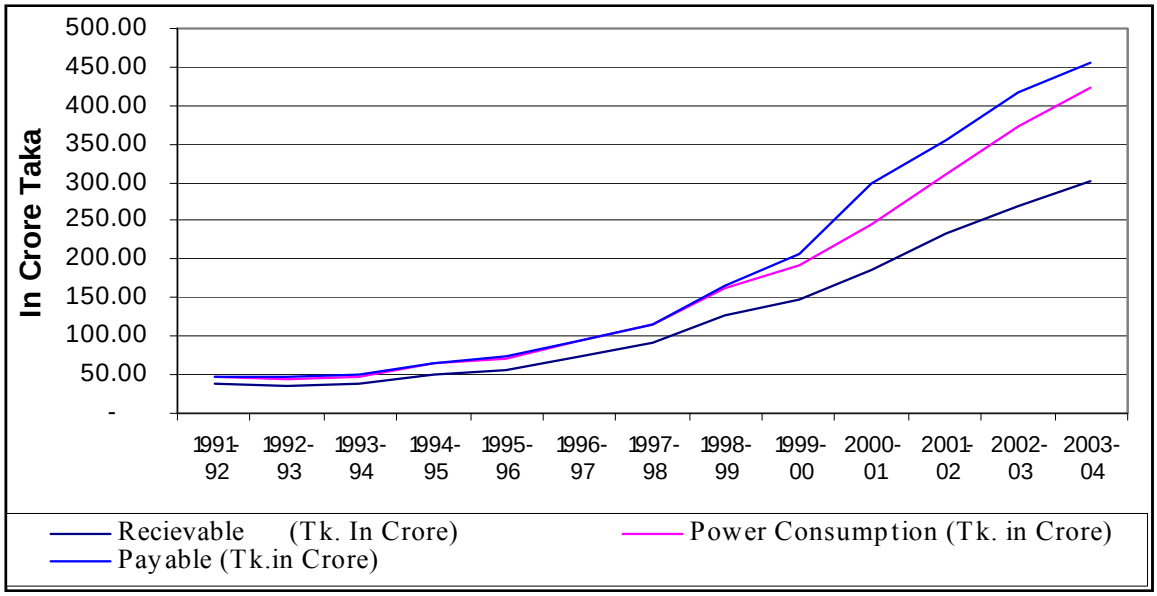
Source: Economic Review, 2006

A: 9 Future Projection of Revenue of DESA



Source: DESA 2006

A: 10 Financial Trends of REB/PBSs



A: 11 Financial Loss due to theft/pilferage in the name of system loss

Fiscal Year	Total Import by BPDB Zones, REB, DESA, DESCO & WZPDCL (MKWh)	Total sales by BPDB Zones, REB, DESA, DESCO & WZPDCL	System Loss Overall Power System (%)	Excess System Loss (%)	Pilferage or loss (Mkwh)	System loss (crore Taka)	Loss of net profit (crore Taka)
FY 1994	12043	6142	37.23	25.23	3038.45	1078.65	470.96
FY 1995	13781	6927	35.89	23.89	3292.28	1168.76	510.30
FY 1996	14919	7454	35.04	23.04	3437.34	1220.25	532.79
FY 1997	15881	7821	34.04	22.04	3500.17	1242.56	542.53
FY 1998	17314	8383	34.87	22.87	3959.71	1405.70	613.76
FY 1999	20084	9282	35.77	23.77	4773.97	1694.76	739.96

Fiscal Year	Total Import by BPDB Zones, REB, DESA, DESCO & WZPDCL (MKWh)	Total sales by BPDB Zones, REB, DESA, DESCO & WZPDCL	System Loss Overall Power System (%)	Excess System Loss (%)	Pilferage or loss (Mkwh)	System loss (crore Taka)	Loss of net profit (crore Taka)
FY 2000	22695	9989	35.82	23.82	5405.95	1919.11	837.92
FY 2001	25984	11294	33.65	21.65	5625.54	1997.07	871.96
FY 2002	28539	12541	31.97	19.97	5699.24	2023.23	883.38
FY 2003	31397	13878	28.48	16.48	5174.23	1836.85	802.00
FY 2004	32693	15332	27.23	15.23	4979.14	1767.60	771.77
FY 2005	34034	16679	25.04	13.04	4438.03	1575.50	687.90
				Total =	**53324.04**	**18930.04**	**8265.23**

Source: Economic Review 2004

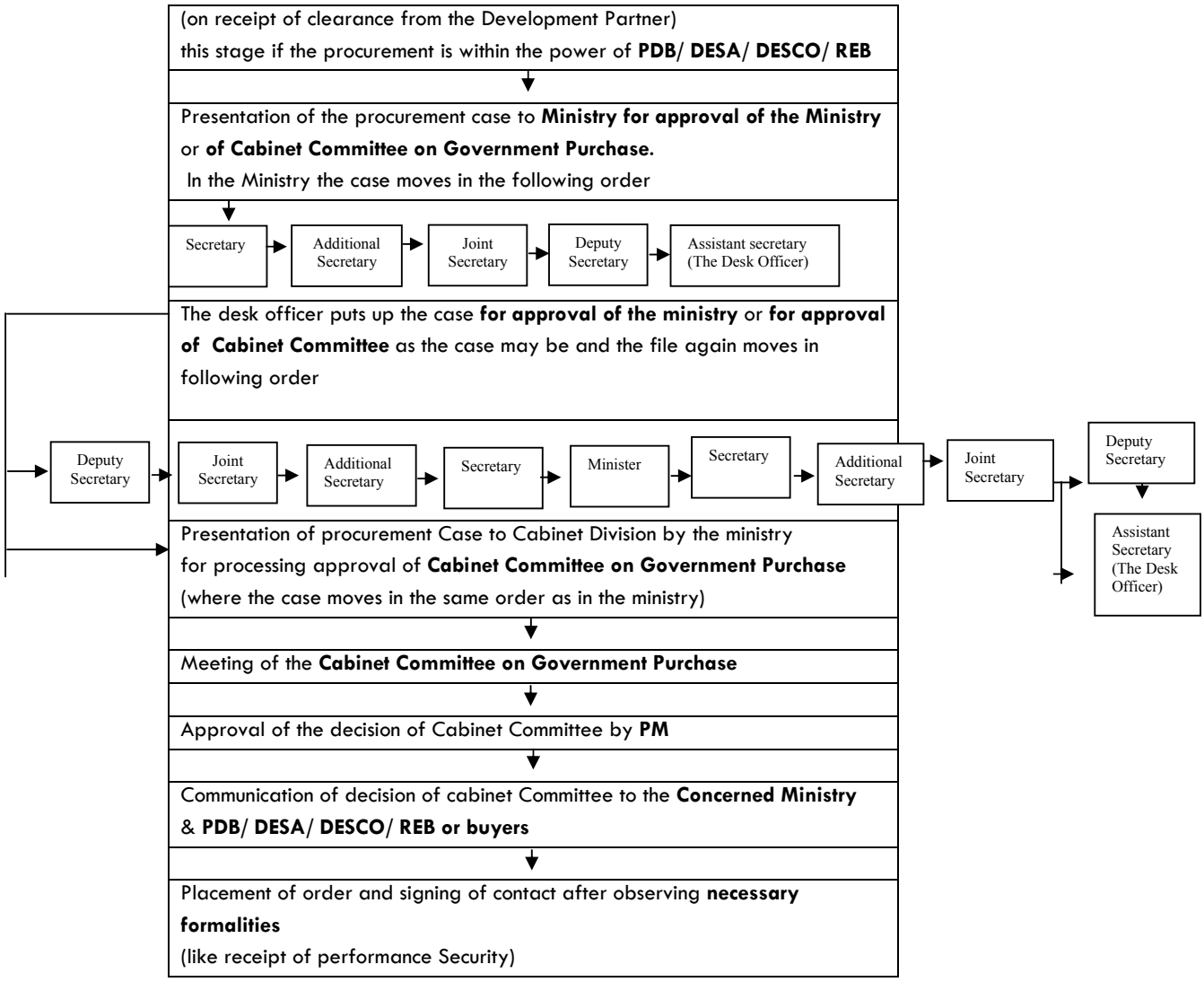
A: 12 Financial Power of Different Stakeholder of Power Sector

Approving Authority	Financial Power
A. Goods And Services	
Power Division of MOPEMR	Up to Taka 25 Crore or US $ 3.66 million
BPDB	Up to Taka 10 Crore or US $ 1.46 million
DESA	Up to Taka 5 Crore or US $ 0.73 million
B. Consultancy Services	
Power Division of MOPEMR	Up to Taka 5 Crore or US $ 0.73 million
Chairman of BPDB	Up to Taka 1 Crore

Source: MPEMR

A: 13 Approval Process in ECNEC through Ministry

↓
Preparation of BD by **PDB/ DESA/ DESCO/ REB** or **buyer**
↓
Approval of the BD by **development partner** (where necessary)
↓
Presentation of Bid Invitation Notice to Ministry of Information or DFP (for publication)
↓
Receipt and opening of bids (at notified **place, date, time**)
↓
Evaluation of Bids by the **Evaluation Committee of PDB/ DESA/ DESCO/ REB**
↓
Presentation of Bid Evaluation results along with bids (**to appropriate tender**)
↓
Committee or Board of **PDB/ DESA/ DESCO/ REB** for **decision & Recommendation**
↓
'Approval' or 'No Objection' of Development Partner on **the decisions/ recommendation** of **PDB/ DESA/ DESCO/ REB** (where necessary)
↓
Placement of order or contract awarded



A.13.1

As per the PPR 2003, the PDB signed a contract with AES Haripur Private Ltd. as Build-Own-Operate to construct a 360 mw PP with the guarantee to purchase electricity for 22 years at 2.73 USD (at floating exchange rate). AES Haripur Private Ltd. proposed to provide electricity of 360 mw within May, 2001; they installed some machinery for a single cycle plant and the Govt. gave preferences to supply in the dry and irrigation season. AES Haripur submitted a financial proposal of a tariff rate of 3.41 US cent (excluding fuel cost) per kwt with 100% plant factor, but the actual tariff including subsidized fuel cost with 65% plant factor is 5.25 cent per kwt. These factors were not reflected in the proposal.

As there was no option in the contract for power production in a single cycle 360 mw power plant, a new agreement of commercial operation was discussed and signed, where this capacity charge was decreased and the Govt. agreed to purchases electricity for 3 months from simple cycle generation during the summer season. But AES Haripur started generation commercially after 31 October, 2001, at the rate of 2.73 cents.

It is mentioned that the tariff rate of the combined cycle Project was 2.73 cents where fuel cost 1000 CFC gas price was 2.40 USD with 85% plant factor with the levelized tariff of 22 years. But in the simple cycle project, the price of electricity was 5.54 cents, the price of 1000 CFC gas was 1.17 USD with 65% plant factor. Ashugonj, Ghorashal, Haripur power plant run with 70-75 % plant factor. If the PDB had signed the contract in the same plant factor the tariff rate become low. *The loss, due to the difference in the rate of combined (2.73) and single (5.54) cycle price, would be 5.54 -2.73 cents = 2.83 cents per Kwt.* (Source: Key Informants and PDB documents, 2006)

A: 14 Tariff structure to purchase power from IPP and Mode of Payment

Tariff Elements	Sub-elements	Mode of Payment
Capacity Payment (Linked to certain level of availability of power plant will be known to the bidders at the time of issuance of RFP)	• Debt Service (to repay foreign loans) and • Fixed costs for the equipments or machineries	In Taka, but denominated in both dollars
	• Local loans • Local investment and • Local fixed costs	In Taka
Energy Payment will be denominated in local currency to the extent to which the variable costs are in local currency	Variable costs of operation and maintenance (including fuel cost)	In Taka
	If fuel cost paid in dollar then	In dollar

Source: Private Power Generation Policy 1996

A: 15 System Losses in Different Agency

Organization		Fiscal Year									
		1994	1995	1996	1997	1998	1999	2002	2003	2004	2005
BPDB	(%)	24	22.53	21.6	20.3	20.9	21.5	23.2	20.7	21.3	20
DESA		32.8	31.71	31.3	29.6	30.1	29.9	35.6	30.9	33.7	30
DESCO		-	-	-	-	-	40.5	26.7	21.2	19.2	16.7
REB		15.6	15.67	14.6	17.2	16.5	18.6	16.7	17.3	15.6	13.3
WZPDC		-	-	-	-	-	-				25
Overall Power System		**37.2**	**35.89**	**35.04**	**34**	**34.9**	**35.8**	**32**	**28.5**	**27.2**	**25**

Source: ADB

A: 16 Projection of future generation and demand from 2005 - 2025

Fiscal Year	GDP growth @ 5.2 %		GDP growth @ 8 %		GDP growth @ 4.5 %		Load Factor
	Generation (GWh)	Net Peak Load (MW)	Generation (GWh)	Net Peak Load (MW)	Generation (GWh)	Net Peak Load (MW)	
2005	21,964	4,308	22,336	4,381	21,964	4,308	58.2
2010	33,828	6,608	37,652	7,355	31,533	6,160	58.4
2015	50,306	9,786	68,924	13,408	43,697	8,501	58.7
2020	72,222	13,993	126,172	24,445	60,553	11,732	58.9
2025	100,083	19,312	217,137	41,899	80,982	15,626	59.2

Source: Proposed PSMP 2006

A: 17 System Loss reduction and Gain Tariff rate Increase

	System Loss	Import	Gain in Reduction of System Loss to			Gain in Proposed Increase of Rate in 2006
	%	(MKWH)	9 % level	12 % Level	15 % level	
			In Crore Taka			**In Crore Taka**
PDB	20.01	19187	781.40	568.48	355.57	750.82
DESA	29.96	5126	397.42	340.53	283.65	200.59
DESCO	16.63	1843	52.01	31.56	11.11	72.12
REB	13.78	7489	132.41	49.31	-33.80	293.06
WZPDCL	21.38	389	17.81	13.50	9.18	15.22
Total =			**1,381.05**	**1,003.38**	**625.72**	**1,331.81**

A: 18 Development Expenses to expand the distribution lines

Implementation Plan 2006-08				
		(In ml US $)		
	Purpose	Local	Foreign	Total
BPDB	Electrification, Renovation, Rehabilitation and Extension of power distribution system, installation capacitor	824.44	217.06	1041.5
DESA	Emergency rehabilitation and construction of different KV substation, New sub-station, up gradation of switching station, procurement of spare parts and testing equipments	8618.06	7070.02	15688.08
DESCO	Up gradation of distribution system, feeding and renovation of distribution network	70.87	126.75	197.62
WZPDCL	Procurement and installation of electric equipments	23.88	43.12	67
REB	Diffusion of renewable energy technologies, construction of PBSs sub-stations, electrification, **ten lac new connection**, Intensification of distribution system	608.89	306.89	915.78
	Total	**10146.14**	***7763.835***	**17909.98**

A.19 : Progress of the BERC Activities

Proposed responsibilities of BERC	Current Progress/Constraints
to determine efficiency and performance standard of the institutions trough audit the verification, monitoring, analysis of the energy and the economy use and enhancement of the use of energy,	Yet to be started
to determine tariff and safety enhancement of electricity generation and transmission, marketing, supply, storage and distribution of energy	Draft law and guideline on methodology of determination of Tariff structure have been finalized. Guidelines on Generation tariff, transmission tariff and distribution tariff are not developed yet.
to issue, cancel, amend and determine conditions of licenses, exemption of licenses and to determine the conditions to be followed by such exempted persons	▪ Licensing Policy is prepared; BERC issued 16 licenses for captive power generation till Aug'06 ▪ BERC finalize cases within 45 days, effective from the day of submission of the relevant document; in this case, there is a chance of bureaucratic hazard.
to approve schemes on the basis of overall program of the license and to take decision in this regard taking into consideration the load forecast and financial status	

Proposed responsibilities of BERC	Current Progress/Constraints
to collect, review, maintain and publish statistics of energy	It is underway
to frame codes and standards and make enforcement of those compulsory with a view to ensuring quality of service	Not yet framed
to develop uniform methods of accounting for all licensed institution or companies	Not yet done
to encourage to create a congenial atmosphere to promote competition amongst the licenses	Owing to inadequate staffs and poor ownership, BERC cannot progress significant on this issue.
to extend co-operation and advice to the Government, if necessary, regarding electricity generation, transmission, marketing, supply distribution and storage of energy	Still huge gap in collaboration with MPEMR and PMO on these issues. There is chance of clash of interest between BERC and Power Division
to resolve disputes between the licenses and to between licenses and consumers and refer those to arbitration if considered necessary	Though citizen's have less participation, under the public hearing policy, few cases or disputes have be finalized;
to ensure appropriate remedy foe consumer disputes, dissolved business practices of monopoly;	regarding this no significant task is reported yet
to ensure control of environmental standard of energy under existing laws	Not yet have started to perform to control standard
to perform any incidental functions if considered appropriate by the Commission for the fulfillment of the objectives of the Act	To be performed as per decision of BERC in future

Source: MPEMR, Interview with officials of BERC

Corruption in outsource of operation and maintenance of RPCL

It was earlier decided, ahead of the commissioning of the Mymensingh W Power Station that the Operation & Maintenance contract would be outsourced and that contract was awarded unilaterally to a newly formed company called **L**ahmeyer **I**nternational **P**ally **P**ower **S**ervices **L**imited (LIPPS). The company was formed by the local agent of the power consultant company Lahmeyer International GmbH (Li). The company comprised of Li, Ventures International (local Agent of Li) and RPCL, where the major shareholder was Li.

If there was no ill motive of gaining financial benefits in a wrong way the outsourcing of the Operation & Maintenance (O & M) of a power plant, the first of this kind, could have been a unique example in the context of Bangladesh.

Table 6: Operation and Maintenance Annual Cost Comparison (2006)

(In Crore Taka)

Cost under LIPPS contract		**Current Cost of RPCL for same tasks**	
Annual Service Fee	11.58	Annual Service Fee	3.8
Mobilization Fee	0.5	Mobilization Fee	0.28
Miscellaneous Expenses	10.71	Miscellaneous Expenses	0.34
Retainer	4.48	Retainer	1.54
Total	**27.64**	**Total**	**5.96**

Source: The daily Star, date----------

RPCL initially awarded the contract to LIPPS with a very high financial benefit. LIPPS gained an additional **Taka 22 million per month as retainer and Taka 22 crore per year** and a portion of the gain was used to bribe government officials to make all the decisions in favor of RPCL and LIPPS. The monthly retainer was very high, but the retainer was increased by another **Taka 10 million in 2004 for the ensuing 3rd Phase of the plant.** The only Bangladeshi shareholder of LIPPS was not happy with this situation and he started imposing his power on RPCL; with the help of some current government connections, he replaced the MD of RPCL. He also tried to offload the shares of the REB from RPCL and gain control over the company by buying the shares of REB. Finally, his ploy did not work, and the REB gained control over RPCL, terminated the O & M contract with LIPPS during 2005 and took control of the Mymensingh Power Station (MPS). LIPPS was blacklisted by RPCL; and it filed some cases against the Bangladeshi Managing Director of LIPPS, including sabotage of the power station and anti-state activities. By sensing the oncoming problem, the Managing Director of LIPPS fled from the country to escape from punishment. On the other hand, RPCL is now running the MPS on less than half of the amount they were spending after LIPPS. But millions of dollars were drained from the national exchequer by some corrupt officials of the PDB, REB and other high officials of the Ministry. The whole story of LIPPS shows how corruption is being introduced in the name of new ventures in the power sector (Source: Key Informants).

A.20 Primary Estimate of Corruption Identified (1996- 2005)

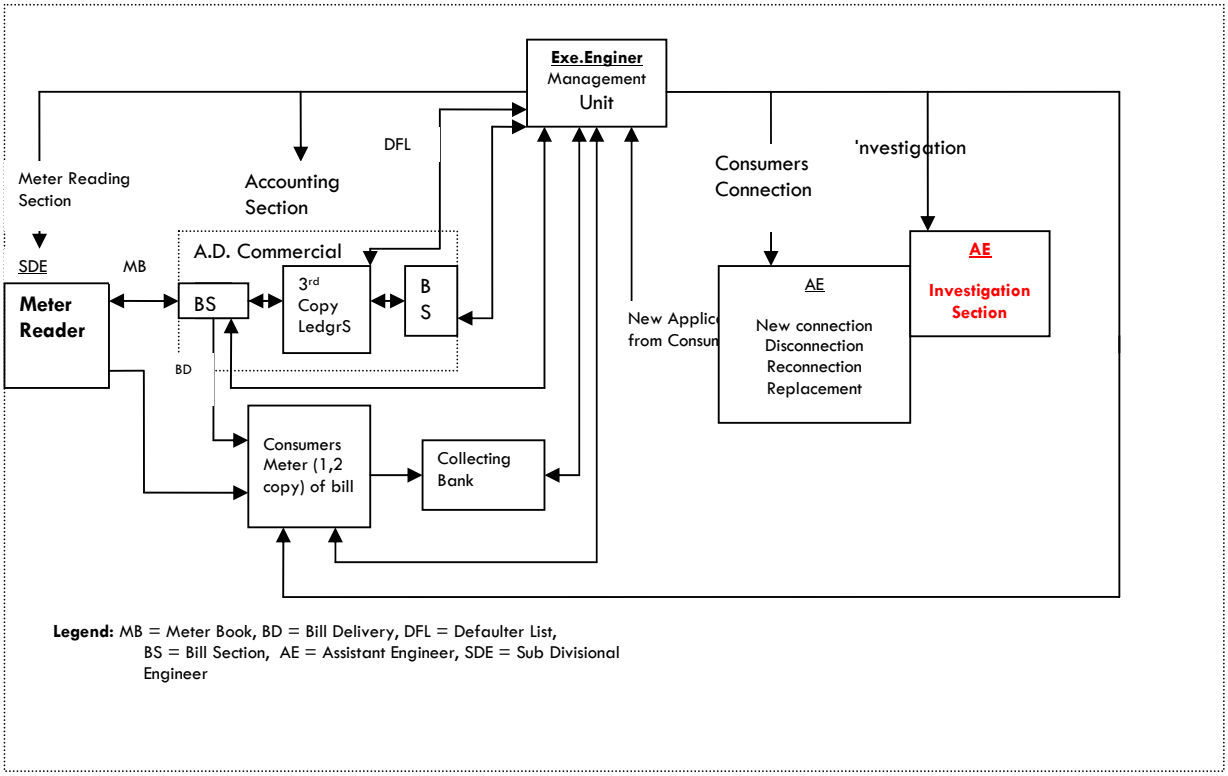
(US $ 1 = Taka 60)

Sl.	**Power Plant**	**Probable Graft or corruption amount[190]**
1	Maintenance and RPCL 3rd phase , Mymensingh	• Project cost $52 million; actual cost $ 25 million • Over budgeting of Taka 159.3 crore $ 27 million
2	Tongi 80 mw Power Plant	• Actual Price is the highest around Taka 200 crore • Spent Taka 357 Crore • Loss Amount during Purchase of Plant is Taka 135.7 crore or $ 23.09 million
3	Infrastructure development for Siddrirganj PP	• The work order was 70 crore taka, • High court ordered PDB to pay additional **Taka 120 crore or $ 20.34 loss of PDB**, to Contractor
4	70 mw phase-3 RPCL, Mymensingh	• Project cost was **Euro 100 million**, but KFW, Germany estimated around Euro 77 million • Loss minimum Euro 23 Million or **Taka 18.4 billion**
5	Chandpur 100 mw power plant	• 30% of the budget was over estimation • **Net loss would be Taka 118 crore or $ 20 million.**
6	Barapukuria Plant	• **Over-priced** of **Taka 413 crore or 70 million dollar**
	Total Amount of Corruption =	**Taka 4007.3 Crore or US $ 688 Million**

Source: KI, Experts, 2006

[190] *Amount of graft or corruption amount in procurement related to power plant*= Procured Cost - Standard Rate of the Different Power Plants

A: 21 Commercial Operation of S & D office in DESA



Legend: MB = Meter Book, BD = Bill Delivery, DFL = Defaulter List, BS = Bill Section, AE = Assistant Engineer, SDE = Sub Divisional Engineer

A: 22 Power outage and Load Shedding

Consumer type		Did the average load shedding cross 45 hours in any month?		
		Yes	No	Total
1.00 = Urban (PDB and DESA and DESCO)	Count	573	41	614
	% within Consumer types	93.3%	6.7%	100.0%
2.00 = Rural (REB/PBSs)	Count	351	5	356
	% within Consumer types	98.6%	1.4%	100.0%
Total	Count	924	46	970
	% within Consumer types	95.3%	4.7%	100.0%

A: 23 Performance of Magistracy in settlement of the disputes (FY 1999 - FY 06)

Cases	Balanced of the previous year (A)	402292
	Filled by the PDB Officials	32766
	Filed through Mobile court	80911
	Case filed (B)	113677
Number of case finalized	No. person Jailed	5249
	No. of person fined	61239
	No. of person fined + Jailed	1394
	Others	18716
	Total (C)	86598
Final Judgment	Balanced no. (A+B+C)	406066
	Disconnection of illegal consumers	131697
	No. of mobile courts conducted	5340
	Fines (Crore Taka)	148.21

Source: PDB, 2006

A: 24 (a) New Connection Process

Organization		Connection process			
		Self	Media/Agent	Others (Owner/Relative)	Total
PDB	Count	2	83	1	86
	% within Organisation	2.3%	96.5%	1.2%	100.0%
	% within Connection	11.8%	22.3%	16.7%	21.7%
REB/PBS	Count	7	158		165
	% within Organisation	4.2%	95.8%		100.0%
	% within Connection	41.2%	**42.4%**		41.7%
DESA	Count	3	86	4	93
	% within Organisation	3.2%	92.5%	4.3%	100.0%
	% within Connection	17.6%	23.1%	66.7%	23.5%
DESCO	Count	5	46	1	52
	% within Organisation	9.6%	88.5%	1.9%	100.0%
	% within Connection	29.4%	12.3%	16.7%	13.1%
Total	Count	17	373	6	396
	% within Organisation	4.3%	94.2%	1.5%	100.0%
	% within Connection process	100.0%	100.0%	100.0%	100.0%

Source: Consumer Survey 2006

A: 24 (b) Intervention of Broker or Agents in New Connection Process by Types of Connection

Types of Connection	**Statistics**	**Connection process**			
		Self	**Media/Agent**	**Others (Owner/Relative)**	**Total**
LTI	Count	14	258	5	277
	% within Types of Connection	5.1%	93.1%	1.8%	100.0%
HTI	Count	3	115	1	119
	% within Types of Connection	2.5%	96.6%	.8%	100.0%
Total	Count	17	373	6	396
	% within Types of Connection	4.3%	94.2%	1.5%	100.0%

A : 24 (C) Types Influence and irregularities in new connection process

Organisation		No reply	Influencing myself to collect from office	Paid extra money or bribe	Engagement of political or personnel influence	Others	Total
PDB	Count	250	43	3	1	32	329
	% within Organisation	76.0%	13.1%	.9%	.3%	9.7%	100.0%
REB/PBS	Count	60	146	52	18	114	390
	% within Organisation	15.4%	37.4%	13.3%	4.6%	29.2%	100.0%
DESA	Count	75	41	55	3	41	215
	% within Organisation	34.9%	19.1%	25.6%	1.4%	19.1%	100.0%
DESCO	Count	16	9	38		30	93
	% within Organisation	17.2%	9.7%	40.9%		32.3%	100.0%
	Count	401	239	148	22	217	1027
	% within Organisation	39.0%	23.3%	14.4%	2.1%	21.1%	100.0%

A: 25 Harassments during new connections

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
yes	172	27.2	27.2	27.2
no	461	72.8	72.8	100.0
Total	**633**	**100.0**	**100.0**	

A: 25 (a) Harassments during new connections (Organization Specific)

Organisation	Whether harassed during connection or not		Total
	yes	no	
PDB	28.5%	7.6%	13.3%
REB/PBS	42.4%	61.6%	56.4%
DESA	18.0%	25.2%	23.2%
DESCO	11.0%	5.6%	7.1%
Total	100.0%	100.0%	100.0%

A: 25 (b) Tyrannies of Media/Brokers (%)

Types of Connection	Organisation	Media/ Brokers of New Connection (%)								
		Meter Reader	MLSS/ 3rd and 4th Class Employee	Sub-Assistant Engineer	Assistant Engineer	Executive Engineer	Bill surveyor	Electric equipment supplier company	Electrical contractor	Others
LTI	PDB_LTI	**12.90**	21.20	7.10	2.40	1.20	4.70	4.70	**35.30**	10.60
	REB_LTI	1.30	31.60	2.50	12.70	1.30	8.90	3.80	15.20	**22.80**
	DESA_LTI	8.10	23.30	5.80	10.50	3.50	3.50	4.70	16.30	**24.40**
	DESCO_LTI	10.00	**36.70**		10.00			**13.30**	16.70	13.30
	Total_LTI	7.90	**26.40**	4.60	8.60	1.80	5.00	5.40	21.80	18.60
HT	PDB_HT					100.00				
	REB_HT		3.40	16.10	**19.50**	**13.80**	4.60	10.30	**29.90**	2.30
	DESA_HT	**50.00**		20.00		10.00		10.00	10.00	
	DESCO_HT	4.50		13.60	4.50	9.10			**50.00**	18.20
	Total_HT	5.00	2.50	15.80	15.00	12.50	4.20	8.30	**31.70 %**	5.00%

Source: Consumer Survey June 2006

A.26 Process of New connection in DESA

Title	Responsible Persons	Sanctioned (Days)
1. Application Form		
a. Collection of application form b. Deposit Money in the Bank c. Filling the required documents and attaching money receipt put the application on Distribution Office	Consumers	
d. Register the application form	Clark	0
e. Receipt Issuing	Clark	0
f. Send to commercial clearance	Clark	1
2. Commercial Clearance		
a. Commercial clearance	Ledger Keeper/ In charge/ Meter Reader/ Accountant	2
3. Load Survey/ Approval		
a. Send for load survey/ approval	Executive Director, Commercial	1
b. Order for load survey	Executive Director, Commercial	1
c. Prepare load survey report	SDE/AE/SAE/ Xen Technical	3
d. Load sanction	Executive Director	1
4. Demand note and bill deposit		
a. Dictate to prepare demand note	Executive Director, Commercial	1
b. Call for security deposit	Executive Director, Commercial	0
c. Submission of demand note by contractors	Contractors	2
d. Approve demand note & security money and send it to the consumers service	Executive Director, Commercial	1
e. Consumer collect bill from service centre	Consumers	1
f. Security & other bill deposit in the Bank	Consumers	7
g. Entry the Bank statement in the Ledger	Ledger In charge (Ledg. Keeper)	1
h. Placed the Bank information in the Commercial unit	General section	1
5. Construction of Service Drop		
a. Call for Construction of service drop as approval	Executive Director, Commercial	1
b. Contractor construct the service drop	Contractor	3
6. Meter Issue		
a. Entry the meter in ledger and meter reading book and issue for contractor		1
b. Contractor set up the meter		1
7. Service Connection		
a. Commercial unit representative examine the service drop, meter connection and finally connect the line.	Executive Director, Commercial	1
b. Prepare service connection completion report	Contractor	0
Total		**30**

A: 27 Average bribes paid for new connection

Organizations	New Connection and Bribes	Domestic	Irrigation	Commercial	Industrial	Sub-total Bribe Transacted (In Crore Taka)	Total Transacted Bribe (In Crore Taka)
PDB	**New Connection**	46,118	522	1791.67	819	**26.96**	**447.19**
	Avg. Bribe for Load Approval	52.23		191.15	4500.83		
	Avg. Bribe to Lineman	17.52		27.08	22.73		
	Avg. Bribe per New Connection	69.75		218.23	4523.56		
	Sub-total Bribe for New connection	**14.88**		**0.56**	**11.52**		
REB/PBSs	**New Connection**	633,223	24022	3813.69	9255	**164.14**	
	Avg. Bribe for Load	0.76		15.48	35.78		

Organizations	New Connection and Bribes	Domestic	Irrigation	Commercial	Industrial	Sub-total Bribe Transacted (In Crore Taka)	Total Transacted Bribe (In Crore Taka)
	Approval						
	Av. Bribe to Lineman	50.66		125.00	871.99		
	Avg. Bribe per New Connection	51.42		140.48	907.77		
	Sub-total Bribe for New connection	**89.22**		**33.30**	**41.62**		
DESA	**New Connection**	44769.00		22623.08	1032		
	Avg. Bribe for Load Approval	412.36		902.56	4617.65		
	Bribe to Lineman	358.65		830.77	597.65	**252.86**	
	Avg. Bribe per New Connection	**771.01**		**1733.33**	**5215.30**		
	Sub-total Bribe for New connection	**134.02**		**102.40**	**16.44**		
DESCO	**New Connection**	96.00	17	22830.77	93		
	Bribe for Load Approval				1428.57		
	Avg. Bribe to Lineman	105.41		50.00	518.18	**3.23**	
	Avg. Bribe per New Connection	105.41		50.00	1946.75		
	Sub-total Bribe for New connection	**0.04**		**2.64**	**0.55**		

A.28.1: Amount for Load Approval

Consumer Type (by Load)	Organization	Mean	N	Std. Deviation
LTI	PDB	11150.61	41	46703.78
	REB/PBS	4922.69	26	11488.95
	DESA	4720.00	55	7930.00
	DESCO	1689.29	14	5278.25
	Total	6385.40	136	26632.69
HTI	PDB	20960.00	5	30954.93
	REB/PBS	161437.58	36	266552.31
	DESA	20480.00	10	19947.53
	DESCO	.00	1	.
	Total	117718.33	52	230863.66
Total	PDB	12216.85	46	45095.30
	REB/PBS	95802.31	62	216525.43
	DESA	7144.62	65	11910.20
	DESCO	1576.67	15	5104.92
	Total	37179.62	188	132443.49

A: 29 Classification of Meter Reader

Types of Meter Reader	Area of Meter Reading
3rd Class staffs	load within 5 Kwt or 'A' type (Residential category)
2nd Class (Sub-Assistant Engineers)	5 to 49 Kwt or B, C, D and E category of consumers
1st class (Asst. Engineers/ SDE/ Exc. Eng.)	above 50 Kwt (re-rolling mills, factories, mills and all types of heavy industries)
Gatis (illegal staff of PDB)	Through 3rd class

Source: PDB and observation, 2006

A: 29.1 Role of Meter Readers and supervisors

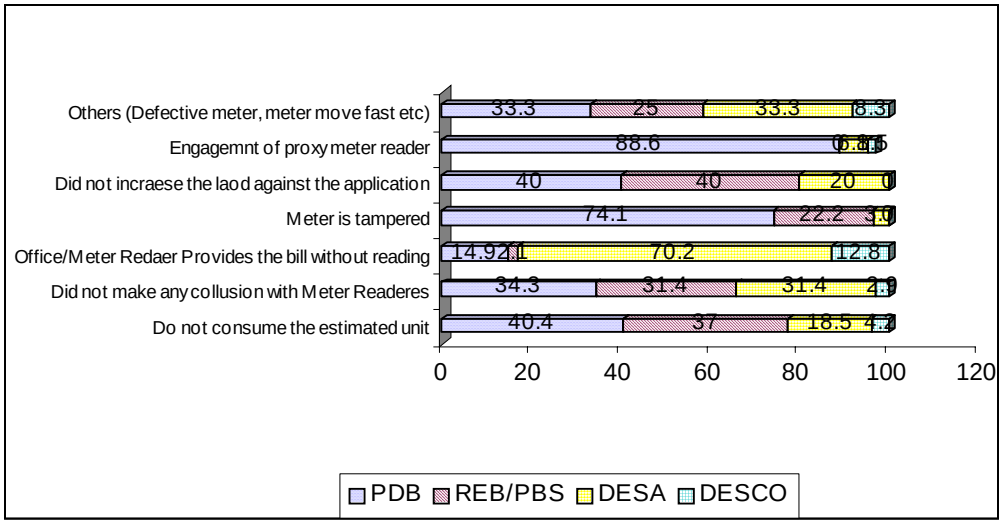
Meter readers take reading, fill up the meter card attached to the meter and are obliged to take notes on the condition of the meter, seal and its installation, location etc. In the case of defective meter, he has to submit a report to his supervisor. Meter reader can take another reading book from their supervisor after returning the previous one in accordance with the monthly schedule. He is not able to take two (2) books at a time. Meter books shall be preserved under the custody of the supervisor. If one faces obstacle in meter reading, s/he is able to provide an estimated bill based on the past three month's consumption but must mention it in the remarks column.

- Meter readers shall be rotated and shall not be posted back to the area from where they were transferred. Nomination of Meter Reader is done based on the sanctioned load amount to consumers. Meter accounts shall be arranged feeder-wise to facilitate the meter reading and analysis of system loss.
- Role of Supervisors: The supervisor shall check 10% of the traditional meter by physical inspection of the consumers' meter as routine work either on the same day or in the following day of submission of the sheet. After sending the data in sheet to the computer section for billing and by supervisor would keep the reading in the register.

A: 30 Performance of Meter Readers in Meter reading or billing

Organizations	Whether the bill paper and Issued Units are cross checked by Supervisors?		Do You feel that Office provide exaggerate bill?	
	Yes Cross Check	Does not Cross check	Yes	No
PDB	29% (173)	**38.5 % (146)**	**38.5 % (124)**	29.9 % (195)
REB/PBS	**40.3 % (240)**	33.5 % (127)	35.4 % (114)	38.7 % (253)
DESA	23.3 % (139)	17.4 % (66)	22 % (71)	20.5 & (134)
DESCO	7.4 % (44)	10.6 % (40)	4 % (13)	10.9 % (71)
Total	61.1 % (596)	38.9 % (379)	33 % (322)	67 % (653)
Pearson Chi-Square	15.747		17.504	
Asymp. Sig. (2-sided)	0.001		0.001	

A: 31 Violation of Meter Reading Rules



Source: Consumer Survey 2006

A.31.1 Incidence of harassments and corruption faced by consumers

Organisation	**Meter reading**	**Billing preparation and distribution**
PDB	83.3 %	66.18 %
DESA	**100.0** %	90.70 %
DESCO	88.9 %	75.68 %
REB	86.0 %	46.75 %
Overall	**86.2 %**	**56.03 %**

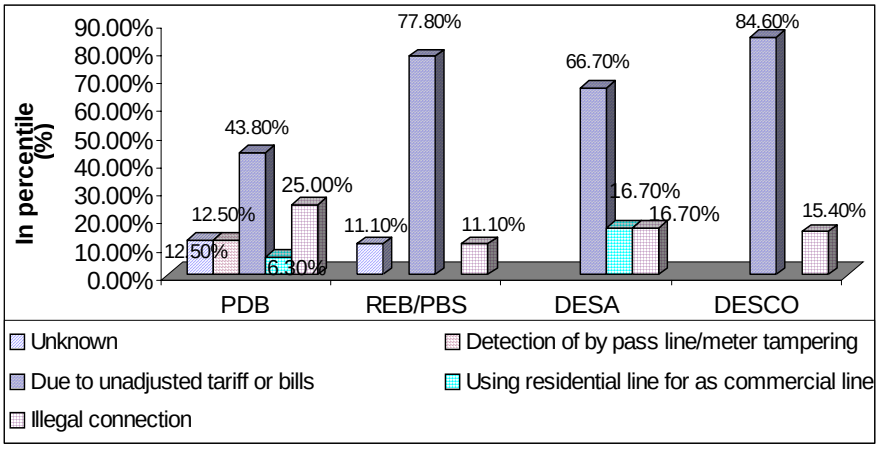
Source: HHSC, 2007

A: 32 Average Bribe for Changes of Meter (In Taka)

Organisations	Mean	N	Std. Error of Mean
PDB	1330.91	55	407.53
REB/PBS	2748.00	25	1999.36
DESA	923.81	21	491.74
DESCO	8685.71	7	7024.19
Total	2056.48	108	686.18

Source: Survey 2006

A: 33 Bill defaulter/Pilferage and Disconnection of the lines



Source: Consumer Survey 2006

A.33.a Did the connection of your electric line was disconnect in last one year?

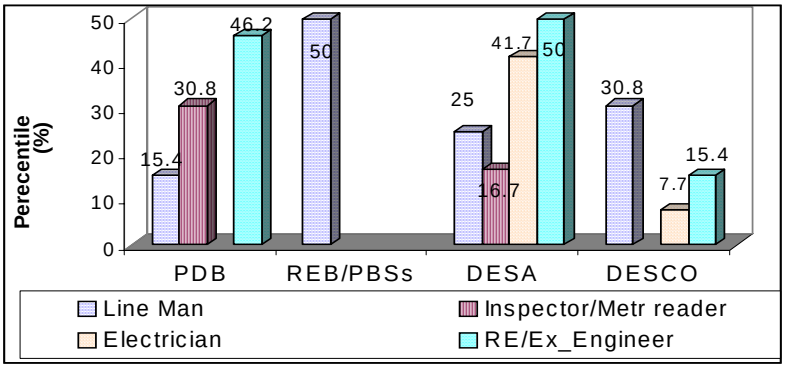
Organization	Statistics	Yes	Total
PDB	Count	16	16
	% within Did the connection of your electric line was disconnect in last one year?	32.00%	32.00%
REB/PBS	Count	9	9
	% within Did the connection of your electric line was disconnect in last one year?	18.00%	18.00%
DESA	Count	12	12
	% within Did the connection of your electric line was disconnect in last one year?	24.00%	24.00%
DESCO	Count	13	13
	% within Did the connection of your electric line was disconnect in last one year?	26.00%	26.00%
Total	Count	50	50
	% within Did the connection of your electric line was disconnect in last one year?	100.00%	100.00%

A: 34 Statement of the disconnection

FY	No. of consumers Disconnected	Receivable against Disconnected Consumers, MTK	Number of Consumers Reconnected	Collection against Reconnected Consumers, MTK
Jan'98 to Jun'98	55364	647.84	15972	125.48
1998-99	127406	1058.43	43544	319.74
1999-00	176956	1539.00	49271	398.00
2000-01	153562	1400.16	43682	320.83
2001-02	214362	2240.15	61628	549.58
2002-03	237983	1966.02	80917	374.11

FY	No. of consumers Disconnected	Receivable against Disconnected Consumers, MTK	Number of Consumers Reconnected	Collection against Reconnected Consumers, MTK
2003-04	260865	1692.64	95827	575.25
2004-05	239835	1982.19	92716	708.43
2005-06	151669	1207.48	51344	1043.28
Jan'98 to May'06	1618002	13734.08	534904	4414.71

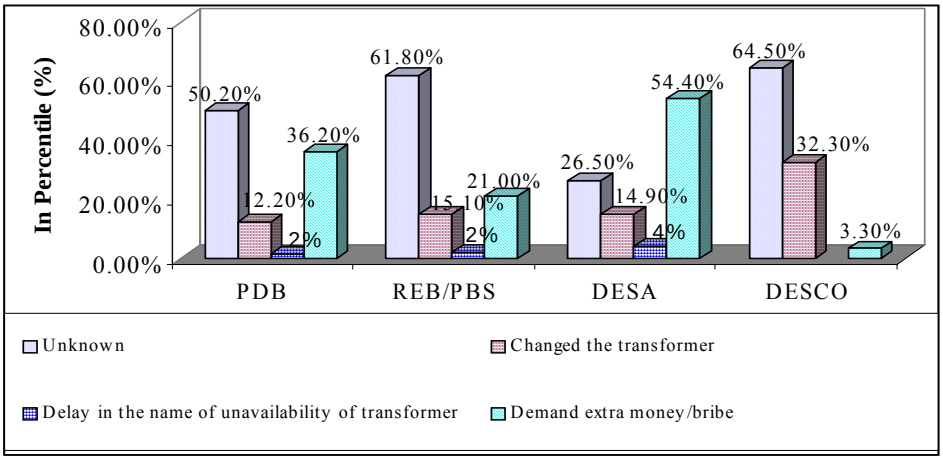
A:34.a. Rent Seekers from Reconnection or disconnection



Source: Consumer Survey 2006

A: 35 Announcement before load shedding or shut down of the line (%)

A: 36 Harassment and corruption link on Transformer Issue



Source: Consumer Survey 2006

A: 37 Average Bribes for Load Extension

Organization	Types of Connection	Average Bribe for Load Extension (In Taka)	N	Maximum
PDB	LTI	875.00	8.00	5,000.00
	HT	-	4.00	-
	Total	583.33	12.00	5,000.00
REB/PBS	LTI	**7,000.00**	6.00	20,000.00
	HT	**12,231.43**	21.00	102,960.00
	Total	11,068.89	27.00	102,960.00
DESA	LTI	**7,292.22**	18.00	20,000.00
	HT	**26,000.00**	5.00	50,000.00
	Total	11,359.13	23.00	50,000.00
DESCO	LTI	**438.89**	9.00	1,050.00
	HT	2,062.50	8.00	15,000.00
	Total	1,202.94	17.00	15,000.00
Total	LTI	4,492.93	41.00	20,000.00
	HT	10,614.74	38.00	102,960.00
	Total	7,437.59	79.00	102,960.00

A: 38 Responses by the Consumers on Power Breakdown

Types of Consumer		Was there any damage due to voltage fluctuation in last year			Total
		Unknown	Yes	No	
Residential	Count	10	178	266	454
	% within damage	35.70%	35.30%	53.80%	44.20%
Agricultural pump	Count	2	8	2	12
	% within damage	7.10%	1.60%	0.40%	1.20%
SME	Count	7	39	75	121
	% within damage	25.00%	7.70%	15.20%	11.80%
Heavy Industry	Count	6	195	92	293
	% within damage	21.40%	38.70%	18.60%	28.60%
Commercial	Count	3	82	57	142
	% within damage	10.70%	16.30%	11.50%	13.80%
Light and Power	Count		1		1
	% within damage		0.20%		0.10%
Others	Count		1	2	3
	% within damage		0.20%	0.40%	0.30%
Total	Count	28	504	494	1026
	% within damage	100.00%	100.00%	100.00%	100.00%
Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square	88.985	12	0		
Likelihood Ratio	85.82	12	0		
Linear-by-Linear Association	32.424	1	0		
N of Valid Cases	1026				

Source: Consumer Survey, 2006

A: 39(a) The average load shedding cross 45 hours in any month?

Area	Statistics	Did the average load shedding cross 45 hours in any month		
Urban	Count	Yes	No	Total
		573	41	614
	% within Consumer	93.3%	6.7%	100.0%

	types			
Rural	Count	351	5	356
	% within Consumer types	98.6%	1.4%	100.0%
Total	Count	924	46	970
	% within Consumer types	95.3%	4.7%	100.0%

A.39 (b) More than 45 hours load shedding and the withdrawal of minimum bill

Organization	**Did the average load shedding cross 45 hours in any month?**			**Whether withdraw minimum charge beyond the load shedding more than 45 hours**		
	No reply	**Yes**	No	No reply	Yes	**No**
PDB	3.30%	92.70%	4.00%	5.20%	2.40%	92.40%
REB/PBS	8.70%	90.00%	1.30%	8.70%	1.00%	90.30%
DESA	4.70%	**93.50%**	1.90%	2.30%	1.40%	**96.30%**
DESCO	2.20%	72.00%	25.80%	5.40%	1.10%	93.50%

A: 40 Consumers' Satisfaction over the commercial services

Consumers' satisfaction	Organization	Not satisfied at all	Not satisfied	Satisfied	Moderately satisfied	Highly satisfied	No reply
New connection	PDB	37.70%	**31.00%**	7.90%	7.60%		15.80%
	REB/PBS	29.00%	15.10%	7.40%	**40.50%**	0.30%	7.70%
	DESA	**56.70%**	13.50%	1.40%	26.50%		1.90%
	DESCO	34.40%	26.90%	9.70%	14.00%	1.10%	14.00%
	Total	**38.10%**	**20.90%**	**6.50%**	**24.60%**	**0.20%**	**9.60%**
Equipment supply	PDB	15.20%	54.40%	10.30%	7.30%		12.80%
	REB/PBS	14.10%	28.70%	9.50%	**42.10%**	0.30%	5.40%
	DESA	**34.40%**	34.90%	0.90%	26.50%		3.30%
	DESCO	34.40%	**37.60%**	8.60%	16.10%		3.20%
	Total	**20.50%**	**39.00%**	**7.90%**	**25.30%**	**0.10%**	**7.10%**
Tariff rate and Billing	PDB	18.80%	28.60%	32.50%	17.60%		2.40%
	REB/PBS	7.20%	10.30%	30.80%	**46.90%**	1.50%	3.30%
	DESA	**29.30%**	17.70%	9.80%	41.40%		1.90%
	DESCO	20.40%	12.90%	**41.90%**	23.70%		1.10%
	Total	16.70%	17.90%	27.90%	34.30%	0.60%	2.50%
Official service	PDB	28.30%	50.20%	11.20%	6.10%		4.30%
	REB/PBS	17.40%	31.80%	9.20%	**36.90%**	0.30%	4.40%
	DESA	**37.70%**	39.10%	3.30%	17.70%		2.30%
	DESCO	35.50%	33.30%	9.70%	21.50%		
	Total	26.80%	39.30%	8.70%	21.60%	0.10%	3.50%
Day-to-day Service	PDB	**72.60%**	22.50%	0.30%	1.50%		3.00%
	REB/PBS	57.20%	27.90%	0.30%	9.00%		5.60%
	DESA	54.90%	33.50%	0.90%	8.40%		2.30%
	DESCO	67.40%	22.80%	3.30%	4.30%	1.10%	1.10%
	Total	62.60%	26.90%	0.70%	6.00%	0.10%	3.70%
Magistracy and Mobile Court	PDB	20.70%	16.70%	1.20%	0.30%		61.10%
	REB/PBS	26.40%	14.60%	0.30%	14.10%	0.30%	44.40%
	DESA	44.70%	23.70%		3.70%		27.90%
	DESCO	**53.80%**	23.70%				22.60%
	Total	30.90%	18.00%	0.50%	6.20%	0.10%	44.30%
Power Sector	PDB	33.40%	41.30%	1.20%	3.00%		21.00%
	REB/PBS	27.40%	46.40%	1.00%	18.20%		6.90%
	DESA	**49.30%**	34.00%	0.50%	8.80%		7.40%
	DESCO	34.40%	44.10%	2.20%	11.80%		7.50%
	Total	34.60%	42.00%	1.10%	10.80%		11.60%

A: 41 Average Billing rate per Kwh to each Category

(Figures in Tk/Kwh)

FY	Category of Consumers														Average Rate
	A	B	C	D	E	F	G1 DESA	G2 Ex. HV	DESCO High V	WZPDCL	H	I(33 KV)	I(11 KV)	J	
2002-03	2.57	1.88	3.82	3.29	5.25	3.63	2.09	-	-	-	3.43	2.14	2.12	3.84	2.47
2003-04	2.83	1.90	3.84	3.32	5.33	3.62	2.01	-	-	-	3.40	2.02	1.96	3.86	2.41
2004-05	2.87	1.89	3.83	3.36	5.30	3.59	1.89	2.49	1.94	1.94	3.59	1.84	1.86	3.83	2.27
2005-06	2.88	1.89	3.78	3.31	5.26	3.59	1.89	2.36	1.94	1.94	3.60	1.85	1.83	3.83	2.19

A: 42 Economic Losses Due to Unavailability of Plant

Shortfall in production = Installed Capacity -Current Capacity	Loss of Production per day*	Loss in Production per Year**	Loss in Production for rest of life time***
(MW)	(In Taka)	(In crore Taka)	(In crore Taka)
594.2	**2,03,30,315.32**	**701.40**	**5884.55**

* $\sum$Shortage$_i$*1000 KWt*Average Rate at which PDB sells to distributors*24 hours*Load factor (=0.75); i= Shortage in each plant

** $\sum$ Loss in Production per Year* Loss in Production per day*345 Days

*** $\sum$ Loss in Production at each plant$_i$ per Year *Rest of life time of ith plant

A: 43. a Productivity loss due to power outrage (FY 2005)

CATEGORY	Domestic	No	Commercial	Loss (units)	Industrial	Loss (units)	Total Loss of production (In crore Tk)
PDB	1451960	225053.8	357445	53616.75	44526	14827.16	1477.710507
REB	5808545	638940	741774	137228.2	113569	69390.66	3501.910931
DESA	515133		70666	15687.85	19976	19057.1	499.4259927
DESCO	248111		20477	13023.37	4054	3243.2	268.2563041
Total	8023749		1190362	0	182125	0	5747.303735

b. Damage of Electric Equipments Due to Voltage Fluctuations

(In Crore Taka)

Distributor Agencies	HH Equipment	Commercial Equipment	Irrigation Equipment	Industrial Machineries	Street Light and Mosque equipments	Total Equipment Damage (D)
PDB	51.10	4.13	0.00	21.34	3.06	**79.62**
REB/PBS	78.88	429.45	13.43	1395.36	0.00	**1917.11**
DESA	12.18	50.74	0.00	327.68	0.03	**390.63**
DESCO	4.98	122.69	0.00	93.02	0.00	**220.70**
Sub-Total	**147.14**	**607.00**	**13.43**	**1837.40**	**3.09**	**2608.05**

Note: $\sum D_{ij}$ × % Victimized Consumers (i) of Distributors (j); where, D= Equipment loss of consumer$_{ij}$, j= PDB/ DESA/ REB/ DESCO

c. Economic loss due inefficiency and corruption

(In crore Taka)

Economic/Welfare loss	Amount
FY 2005-06	
Power Outrage	8355.4
Opportunity Cost of unavailability of gas based Generator per year	1824
System loss during FY 1994 – FY 2005	18930
Total=	**27,361**
Welfare loss (in mw) =	**9122**

Source: Estimate done based on survey and Power Division Data

A: 44 Harassments during new connection by urban-rural consumers

		Whether harassed during connection or not			
Consumer types		Unknown	yes	no	Total
urban	Count	361	99	177	637
	% within Consumer	56.70%	15.50%	27.80%	100.00%

	types				
rural	Count	33	73	284	390
	% within Consumer types	8.50%	18.70%	72.80%	100.00%
Total	Count	394	172	461	1027
	% within Consumer types	38.40%	16.70%	44.90%	100.00%

A: 45 Percentile of giving bribe by different income groups

Different income group	Did not give bribe	Yes give bribe	Total
1 thru 53500	19.30%	26.20%	22.20%
53501 thru 100000	25.90%	17.40%	22.30%
100001 thru 300000	35.10%	24.10%	30.50%
300001 thru 500000	4.70%	6.80%	5.60%
500001 thru Highest	15.00%	25.60%	19.50%
Total	100.00%	100.00%	100.00%

A: 46 : Operation performance of the power sector (ADB)

Generation MKWh	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Dec 2005
BPDB+ IPP Gross	9784	10806	11475	11858	12870	14450	15563	17021	18433	19404	21068	22252	11796
IPP	-	-	-	-	-	578	824	2248	3984	6531	7718	8185	4146
Net	9221	10166	10845	11243	12182	13634	14739	16309	17672	18691	20316	21411	11346
Energy Import and sales, MKWh	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Dec 2005
Gross BPDBs sales	7441	8372	8996	9447	10177	11351	12469	14002	15321	16317	18023	19187	10347
Import by BPDB zones	5082	5586	5825	5810	6238	7045	7515	8324	8935	9404	12292	12732	5830
Sales by BPDB zones	3745	4209	4445	4485	4757	5405	5965	6762	7398	8011	10952	11534	5320
Import by DESA	3696	4162	4551	4962	5419	5947	6504	7240	7833	8306	6209	5126	2711
Sales by DESA	2538	2914	3209	3589	3904	4469	4831	5392	5862	6606	4534	3590	1968
Import by DESCO	-	-	-	-	-	344	550	628	673	861	1733	1843	1015
Sales by DESCO	-	-				205	369	440	494	681	1400	1536	850
Import by REB	906	1247	1372	1472	1718	2442	3172	4114	4712	5913	6728	7489	4089
Sales by REB	765	1052	1172	1220	1435	1989	2546	3386	3927	4888	5805	6457	3541
Import by WZPDCL	-	-	-	-	-	-	-	-	-	-	-	389	716
Sales by WZPDCL	-	-	-	-	-	-	-	-	-	-	-	306	597
Total sales by BPDB zones, REB, DESA, DESCO & WZPDCL	**6142**	**6927**	**7454**	**7821**	**8383**	**9282**	**9989**	**11294**	**12541**	**13878**	**15332**	**16679**	**9040**
System Loss, percent													
BPDB 1/	23.95	22.53	21.6	20.33	20.93	21.45	19.88	17.73	16.41	14.89	13.47	12.81	11.33
BPDB Zones 2/	26.32	24.65	23.69	22.81	23.73	23.29	20.63	18.76	17.2	14.81	10.9	9.51	8.74
BPDB Zones (Net sales to REB)	30.26	29.42	28.44	27.59	29.03	30.57	27.73	26.53	23.2	20.73	21.33	20.01	19.65
DESA 2/	31.34	30	29.49	27.67	27.89	24.84	25.72	25.53	25.16	20.47	26.98	29.96	27.41
DESA (Net sales to REB and DESCO)	32.77	31.71	31.3	29.55	30.13	29.89	34.53	36.55	35.61	31.21	33.72	29.96	27.41
DESCO 2/	-	-	-	-	-	40.51	32.86	29.86	26.67	20.89	19.24	16.63	16.29
REB 2/	15.61	15.67	14.6	17.15	16.46	18.55	19.74	17.68	16.67	17.33	15.59	13.78	13.4
WZPDCL	-	-	-	-	-	-	-	-	-	-	-	21.38	16.7
Overall Power System 1/	**37.23**	**35.89**	**35.04**	**34.04**	**34.87**	**35.77**	**35.82**	**33.65**	**31.97**	**28.48**	**27.23**	**25.04**	**16.7**
Billing and collection, Million Taka													
BPDB bills	14067	15684	16791	18487	21014	23622	27359	31903	35653	40541	43998	43949	22898
BPDB collection	11551	14142	15577	16264	17018	16698	22515	27436	31808	36568	39887	40372	22726
DESA bills	5962	6530	7082	8+648	9862	10768	11423	13015	14700	17389	13647	12543	6925
DESA collection	4742	5841	5998	7084	7929	8200	10007	11403	14274	15919	14458	12530	6750
DESCO bill	-	-	-	-	-	569	1067	1297	1470	1746	4902	5466	3237
DESCO collection	-	-	-	-	-	337	836	1042	1309	1534	4309	5306	3056
REB bills	2101	2710	3180	3518	4448	6139	7837	10810	12857	16781	20139	22520	12334
REB collection	2079	2594	3124	3348	4253	5763	7596	10164	13020	16807	19918	22417	11545