

Ex-ante Evaluation

1. Name of the Project

Country: People's Republic of Bangladesh

Project Title: Central Zone Power Distribution Project

Loan Agreement: March 1, 2009

Loan Amount: 9,715 million Yen

Borrower: The Government of the People's Republic of Bangladesh

2. Background and Necessity of the Project

In Bangladesh, with the recent economic growth, demand for electricity is projected to increase at 8 - 10% annually, and according to the 3-Year Road Map for Power Sector Reform 2006 – 2008 prepared by the Ministry of Power, Energy and Mineral Resources, 45,000km of new power distribution facilities are expected to be required. On the other hand, while rate of distribution loss have been decreasing in recent years, the national average remains at around 19% due to aging facilities and inaccurate meter readings, etc, and reducing these losses is a major issue that must be resolved with a view to reducing the gap between power demand and supply as well as improving the financial health of the distribution department.

The government of Bangladesh has set "To provide access to affordable and reliable electricity to all by the Year 2020" as a national goal, and is working towards increasing capital investment. At the same time, the government of Bangladesh has prepared the Road Map mentioned above, and is aiming at reducing excessive government involvement in power operations, and increasing operational efficiency. It has established an Energy Regulatory Commission and is progressing the phased unbundling of the power generation, transmission and distribution functions that were vertically integrated under the Bangladesh Power Development Board. Regarding the distribution function, the government of Bangladesh is aiming at increasing efficiency by separating it into six distribution companies on regional basis, and increasing their management efficiency in conjunction with capital investment. In relation with the country's power sector reform, as the World Bank has already provided the technical assistance for South zone, JICA's technical assistance under this project would contribute to completion of the corporatization of the regional distribution functions.

In the "Japan's Country Assistance Program for Bangladesh" prepared by the Japanese Government, in the power sector, in addition to the lack of capital investment, a number of issues such as inefficient operation by government operations, power

pricing systems that does not duly reflect generation cost and unpaid power bills have been pointed out. To address these issues, the Japanese Government is focusing its assistance on improving policy, management, operation and financials across the power sector, increasing power generation facilities to reduce the gap between demand and supply, and encouraging reforms in the power transmission and distribution departments. "Economic Growth" is one of the key assistance goals in Bangladesh for JICA, and accordingly, JICA has positioned the power sector as one of the important sectors for the "Development of Economic Infrastructure", one of the development issues in the area of "Economic Growth". Since this project meets these goals, there is a high level of necessity and relevance for JICA to support this project.

3. Project Description

(1) Project Objectives

The object of this project is to improve the power supply to the target area through installation and rehabilitation of power distribution facilities, as well as assistance for the formulation of structural framework of the new power distribution company, thereby contributing to improving living standard and vitalizing the regional economy.

(2) Project Site / Target Area

Central zone, comprised of Greater Mymensingh and Greater Sylhet zones

(3) Project Outline

(a) Construction and rehabilitation of basic power distribution facilities (low- and medium-voltage lines, substations, etc.)

(b) Consulting service (Assistance for development of organizational framework of the new power distribution company)

(4) Total Project Costs/Loan Amount

12,737 million Yen (Including 9,715 million Yen in Japanese ODA loan)

(5) Project Implementation Schedule

Planned for May 2008 ~ June 2011 (Total 38 months. As projected at time of appraisal). Project completion is defined as "when construction is completed".

(6) Project Implementation Structure

(a) Borrower: The Government of the People's Republic of Bangladesh

(b) Executing Agency: The North East Zone Power Distribution Company (NEZPDC) that will be established after de-corporatizing the central zone distribution function of the BPDB expected in the first half of 2009 (The BPDB, before NEZPDC is established)

(c) Operation / Maintenance: As per (b)

(7) Environmental and social consideration / poverty reduction / social development

(a) Environmental and social consideration

(i) Category: B

(ii) Reasons for categorization: The project is not located in a sensitive area, nor has it sensitive characteristics under "Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations" (established in April 2002), and it is thus judged that adverse impact on the environment will not be significant

(iii) Environmental Permit: The EIA report has been approved by the Department of Environment (DOE) of the Ministry of Environment and Forest.

(iv) Anti-Pollution Measures: With regards to air quality, wastes, soil contamination and noise pollution, etc., measures such as spraying of water during work, special treatment of waste including toxic materials, soil sampling survey when reusing surplus earth for land reclamation and advance notification to local residents of construction work will be taken.

(v) Natural Environment: The main part of this project will be rehabilitation to the existing urban distribution network, and as no endangered species or nature preservation areas exist in and around the project site, it is likely to have a minimal adverse impact on the natural environment.

(vi) Social Environment: The main part of this project will be rehabilitation to the existing urban distribution network, and as such large scale land acquisition and resettlement are not expected. In particular, prior to construction of new sub-stations, consideration will be given to make use of existing premises of BPDB to minimize and avoid large scale of land acquisition or resettlement.

(vii) Other/Monitoring: The executing agency will monitor air quality, soil contamination and resettlement during construction and for two years after it starts operation.

(b) Promotion of Poverty Reduction:

The ratio of the poorest sector of society present in the area is used as a selection criterion for project target regions.

(C) Promotion of Social Development (Gender perspective, measures for infectious disease including HIV/AIDS, participatory development, consideration for the disabled, etc.):

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consideration will be given to make use of existing premises of BPDB to minimize and avoid large scale of land acquisition or resettlement. In case land acquisition and resettlement are required, it will be proceed in accordance with land acquisition laws of Bangladesh.

(8) Cooperation with Other Donors: The Asian Development Bank and the World Bank are supporting the regional power distribution companies in the Western zone and the the South Zone accordingly. Along with them, JICA will progress reform of the power sector based on the separation of the BPDB.

(9) Other Important Issues: None

4. Outcome Targets

(1) Evaluation Indicators (Operation and Effect Indicator)

Indicator	Reference value (Actual 2007 values)	Target value (2013) [Two years after project completion]
Maximum demand served (MW)	69	123
	94	176
Distribution system loss ratio (%)	20.69	11.60
	16.38	10.00
Average monthly billing collection rate (%)	97.5	100
	111.62	100
Number of electrified households	93,184	159,700
	97,833	167,700

Note) The first row of values in the table is for the Mymensingh zone and the second row is for the Sylhet zone.

(2) Internal Rate of Return

Based on the conditions indicated below, the Economic Internal Rate of Return (EIRR) of this project is 26.4% and the Financial Internal Rate of Return (FIRR) is 5.0%.
[EIRR]

Cost: Project cost, operation and maintenance expenses

Benefit: Income from power sales taking into account system loss reduction and increase of power demand brought by the project. Cost avoided by this project (assumed project cost for power generation plant, which has equivalent power to be reduced by system loss reduction)

Project life: 20 years

[FIRR]

Cost: Project cost, operation and maintenance expenses

Benefit: Income from power sales taking into account system loss reduction and increase of power demand brought by the project

Project life: 20 years

5. External Factors / Risk Control

- Delays in construction works due to natural disasters such as floods
- Delays in transfer of personnel required for the North East Zone Power Distribution Company to operate

6. Lessons Learned from Findings of Similar Projects Undertaken in the Past

In previous examples where executing agency become public company, the executing agency was able to receive wide-scale delegation of authorities, and start on revitalizing the organization, and by changing the way the organization considered its mission, able to implement effective operations, including considering expansion of the project scope. Accordingly, the lesson learned is that for the project to provide ongoing benefits, the enhancement of authority of executing agency with regards to organizational operation and maintenance management structure is necessary. In this project, as well as ensuring the legal authority of the executing agency through the company's articles of association and articles of incorporation, organizational consultants will be employed under Japanese ODA loans to provide assistance for establishment of an organizational framework.

7. Future Evaluation Plan

(1) Indicators to be Used in Future Evaluations

- (a) Maximum demand served (MW)
- (b) Distribution system loss ratio (%)
- (c) Average monthly billing collection rate (%)
- (d) Number of electrified households
- (e) EIRR
- (f) FIRR

(2) Timing of Next Evaluations

Two years after project completion

End