Ex-ante Evaluation

1. Name of the Project

Country: India
Project: Maharashtra Transmission System Project
(Loan Agreement: 09/14/2007; Loan Amount: 16,749 million yen; Borrower: The President of India)

2. Necessity and Relevance of JBIC's Assistance

A glance at the supply and demand of electric power in India as a whole shows that there have been serious shortages since FY1998: around 6–9% for annual requirement in energy volume; and about 11–14% for requirement in energy output during peak hours. In addition, high power transmission & distribution losses (the average for the entire country of India was 31.3% in FY2004) and frequent power outages are major problems of supply.

In the 11th 5-Year Plan (April 2007–March 2012), besides capacity addition of 78,000 MW in power generation, the Government of India plans to augment the high-voltage power transmission network to supply power efficiently from the northern, northeastern and eastern grids of India, where electric power sources are concentrated, to the other regions. Additionally, the government has been implementing its "Accelerated Power Development and Reform Program" since 2001 to improve India's power distribution facilities. In the current administration's Common Minimum Programme (May 2004), infrastructure development, including the development of electric power facilities, is a top priority.

In JBIC's current Medium-Term Strategy for Overseas Economic Cooperation Operations, a priority area for assistance in India is "Economic Infrastructure Development." The assistance provided by the project is consistent with the strategy.

The western Indian state of Maharashtra (capital: Mumbai) is the biggest state in India in terms of economic scale. Accounting for 14.7% of India's GDP, Maharashtra's state GDP grew at a rate of around 9% in 2006. As a result of this rapid growth, the power demand for the entire state rose on average at a rate of around 7% per annum, from 12,535 MW in 2001 to 16,069 MW in 2005, and is expected to increase at about the same rate in the next few years. To meet this demand, along with power purchase from other states, the state of Maharashtra plans to develop about 12,000 MW of new power generation by the end of 2011. The total length of the state's transmission system is 35,626 km, and there are 473 substations (as of March 2007), but the increase in power demand is straining the capacity of many power transmission facilities. Although electricity consumption is concentrated in Mumbai and other west coast areas, since many power supply sources are located in the eastern part of the state, and the state imports power from outside the state as well, there is pressing need to expand the transmission system particularly in the western region of the state. Thus, JBIC's assistance in the project is highly necessary and relevant. Meanwhile, there are 67 Japanese companies operating in the project's target area (as of June 2006). By securing stable supply of power, the project is expected to have a beneficial effect on these companies.

3. Project Objectives, etc.

The purpose of the project is to ensure a stable power supply to meet the rapidly growing power demand by developing intra-state transmission facilities in the western Maharashtra; thereby, contributing to economic growth and improved living conditions in the region.

4. Project Description

(1) Target Area

Districts of Vashi, Pune, Karad and Nasik, State of Maharashtra

(2) Project Outline

(a) Augmentation of Substations (transformers and related equipment)

(b) Consulting services (support for project implementation and capacity building)

(3) Total Project Cost / Loan Amount

20,712 million yen (Yen Loan Amount: 16,749 million yen)

(4) Schedule

October 2007 – September 2010 (36 months). The project completion is defined as completion of all construction works and consulting services.

(5) Implementation Structure

(a) Borrower: The President of India

(b) Executing Agency: Maharashtra State Electricity Transmission Company Limited (MSETCL)

(c) Operation and Maintenance System: Same as (b)

(6) Environmental and Social Consideration

(a) Environmental Effects/Land Acquisition and Resident Relocation

(i) Category: C

(ii) Reason for Categorization

This project is likely to have minimal adverse impact on the environment due to the fact that the project sector and project characteristics are not likely to exert impact and the project is not located in a sensitive area under the "Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Consideration" (established in April 2002). Thus this project is classified as Category C.

(b) Promotion of Poverty Reduction

None

(c) Promotion of Social Development (e.g. gender perspective, countermeasures for HIV/AIDS and other infectious diseases, participatory development, consideration for the disabled)

None

(7) Other Important Issues

Support for institutional strengthening of the executing agency will be provided as part of the

consulting services.

5. Outcome Targets

(1) Operation and Effect Indicator

Indicator	Baseline (2006 performance value)	Target (2012) (2 years after completion)
Availability Factor (%) of Transformers	81.9	62.0

(2) Number of Beneficiaries

The executing agency supplies electric power to power distribution companies and the latter supplies electric power directly to the beneficiaries. Thus, while the number of direct beneficiaries under this project cannot be confirmed, the number of indirect beneficiaries in the four districts targeted by this project is estimated to be 61.6 million.

(3) Internal Rate of Return

Based on the conditions indicated below, Economic Internal Rate of Return (EIRR) is 23.0%.

[EIRR]

(a) Cost: Project cost (excluding tax), operation and maintenance expenses

(b) Benefit: Increased revenue from power transmission.

(c) Project Life: 30 years

6. External Risk Factors

None

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

A lesson learned from ex-post evaluations of similar projects in the past is that, for the effectiveness of the project to be fully achieved, in addition to the development of a power transmission network it is also necessary to continue augmenting power transmission facilities after the project is completed and develop new power sources to meet potential demand. Since the state of Maharashtra has already laid down a plan to ease the power shortage by increasing the power supply by approx. 12,000 MW by the end of 2011, the progress of the plan will be monitored periodically.

8. Plans for Future Evaluation

(1) Indicators for Future Evaluation

(a) Availablity Factor of transformers (%)

(b) EIRR (%)

(2) Timing of Next Evaluation

2 years after project completion