

1. Name of the Project

Country: India

Project: Haryana Transmission System Project

(Loan Agreement: March 10, 2008; Loan Amount: 20,902 million yen; Borrower: Rural Electrification Corporation Limited)

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 the annual requirement in energy volume; and about 11–14% for the requirement in energy output during peak hours. In addition, high power transmission and 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 Five-Year Plan (April 2007–March 2012), as in the 10th Five-Year Plan (April 2002–March 2007), emphasizing the importance of developing new electric power resources and augmenting transmission and distribution grids, besides capacity addition of 78,000 MW in power generation by the end of the term of the 11th Five-Year Plan, 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 sector. In the 11th Five-Year Plan, the Government of India is committed to reducing power transmission and distribution losses, which today exceed 30%, to 15% through, among other things, development of transmission and distribution grids.

In JBIC’s Medium-Term Strategy for Overseas Economic Cooperation Operations, a priority area for assistance to India is “Economic Infrastructure Development”, and the strategy advocates a policy of providing support for promoting economic growth by developing economic and social infrastructures including electric power. Thus the assistance provided by this project is consistent with this strategy.

The northern Indian state of Haryana is a region that includes the capital New Delhi’s neighboring city Gurgaon, where an industrial cluster has been rapidly developed. Many foreign companies, including those from Japan, are already conducting their operations in the region. The economic growth rate of this region reached 12.6% in FY2005. As a result of this rapid growth, the power demand for the entire state rose on average at a rate of 11.8% per annum, from 3,465 MW in FY2003 to 4,837 MW in FY2006, and is expected to increase at about the same rate in the next few years. To meet this demand, the state of Haryana plans to purchase electric power from other states as well as to develop new power sources. On the other hand, there is an urgent need in the state’s transmission grid to construct new power transmission and substation facilities to respond to the newly developed power stations. There is also a pressing need to improve the transmission network because of the increase in power supply, which strains the capacity of many power transmission and substation facilities. There are already 57 Japanese companies that have advanced into the state of Haryana (as of February 2007). The state is located in the part of the “Delhi-Mumbai Industrial Corridor

(DMIC),” so many more Japanese companies are expected to advance into the region in the days to come. By securing a stable supply of power, the project is expected to have a beneficial effect on these companies.

Therefore JBIC’s support for this project, which aims to develop a network of transmission and substation facilities, is highly necessary and relevant.

3. Project Objectives

The purpose of the project is to ensure a stable power supply to meet the rapidly growing power demands by developing intra-state transmission and substation systems in India’s northern state of Haryana; thereby contributing to economic growth and improvement of living conditions in the region.

4. Project Description

(1) Target Area

State of Haryana

(2) Project Outline

Construction of transmission and substation facilities

(3) Total Project Cost/Loan Amount

26,364 million yen (Yen Loan Amount: 20,902 million yen)

(4) Schedule

April 2008–August 2010 (29 months). Project completion is defined as when all construction work is completed.

(5) Implementation Structure

- (a) Borrower: Rural Electrification Corporation Limited
- (b) Guarantor: The President of India
- (c) Executing Agency: Rural Electrification Corporation Limited and Haryana Vidyut Prasaran Nigam Limited
- (d) Operation and Maintenance System: Haryana Vidyut Prasaran Nigam Limited

(6) Environmental and Social Consideration

(a) Environmental Effects/Land Acquisition and Resident Relocation

(i) Category: B

(ii) Reason for Categorization

This project is not likely to have significant 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 Considerations” (established in April 2002). Thus this project is classified as Category B.

(iii) Environmental Permit

The Environment Impact Assessment (EIA) report is not required for this project in the country's legal system.

(iv) Anti-Pollution Measures

During construction, constructors will take appropriate mitigation measures against noise and other pollution when necessary.

(v) Natural Environment

The project areas are not located in or around any sensitive areas such as national parks, and so it is likely that the project will have minimal adverse impact on the natural environment.

(vi) Social Environment

The project will carry out 97.5 ha of land acquisition in accordance with the domestic procedures of India. The project involves no resident resettlement.

(vii) Other/ Monitoring

In this project, the executing agency will conduct monitoring of environmental impacts such as noise that may arise during construction.

(b) Promotion of Poverty Reduction

None

(c) Promotion of Social Development (e.g. Gender Perspective, Measures to Prevent Infectious Diseases Including AIDS, Participatory Development, Consideration for the Handicapped, etc.)

None

(7) Other Important Issues

None

5. Outcome Targets

(1) Evaluation Indicators (Operation and Effect Indicator)

Indicator	Baseline (2007 actual)	Target (2012, 2 years after completion)
Capacity operating rate (%) of facilities (volume)		
Transmission line	60%	60%
Transformer	83%	75%
System availability (%) of facilities (hour)	99.6%	98.0%

(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 state of Haryana targeted by this project is estimated to be 21.14 million of the state's population.

(3) Internal Rate of Return (Financial and Economic Internal Rate of Return)

Based on the conditions indicated below, Economic Internal Rate of Return (EIRR) is 33.2% and Financial Internal Rate of Return (FIRR) is 5.6%.

[EIRR]

- (a) Cost: Project cost (excluding tax), operation and maintenance expenses
- (b) Benefit: Effect of increasing the amount of power supplied by substations, effect of reducing the power transmission loss rate, effect of reducing the cost of alternative power generation
- (c) Project Life: 30 years

[FIRR]

- (a) Cost: Project cost, operation and maintenance expenses
- (b) Benefit: Increase in fare receipts, increase in revenue due to improvement in power transmission loss rate
- (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 developing a power transmission system, 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 Haryana has already laid down a plan to increase the power supply to approx. 10,000 MW by the end of FY2011, the progress of the plan will be monitored periodically.

8. Plans for Future Evaluation

(1) Indicators for Future Evaluation

- (a) Capacity operating rate (%) of facilities (volume)
- (b) System availability (%) of facilities (hour)
- (c) Internal Rate of Return: EIRR (%), FIRR (%)

(2) Timing of Next Evaluation

2 years after project completion