

## Ex-ante Evaluation

### **1. Name of the Project**

Country: The Socialist Republic of Vietnam

Project: Power Transmission and Distribution Network Development Project

(Loan Agreement: March 31, 2008; Loan Amount: 10,906 million yen; Borrower: The Government of the Socialist Republic of Vietnam)

### **2. Necessity and Relevance of JBIC's Assistance**

(1) The actual state of the electric power sector in Vietnam and the problems it faces

Having recorded a high GDP growth rate of around 8% over the past several years, going forward, high growth supported by foreign direct investments is expected to continue in Vietnam. Reflecting this rapid economic growth, nationwide demand for electric power increased by an average of 14.8% per annum from 2000 to 2004. In the Sixth Power Development Master Plan (2006–2015), given approval in July 2007, power demand is predicted to increase by an average of 17% per annum between the present and 2015. Responding to this surge in power demand is a task of pressing importance for Vietnam's power sector. Thus, in the master plan, development of 13,720 MW of new power sources is on the drawing board, to be achieved in three years, from 2007 to 2010, at an estimated cost of four to five billion dollars per annum.

Additionally, in the aforementioned master plan, it is also pointed out that construction of a power transmission and distribution network should be advanced in tandem with the development of power sources, and that a reduction of loss in power transmission should also be pursued. The master plan states that it is indispensable that power be supplied efficiently and steadily through the development of a power transmission and distribution network. The electrification rate in Vietnam has reached 90.04% on a household level (as of the end of 2005), which is roughly the entire country, but overloading transformers as a result of the increasing power demand is a problem that is especially acute in urban areas. Many facilities are operating in excess of their normal utilization rate, and factors such as this are making the delivery of stable power a challenge.

Moreover, the World Bank, which has historically provided assistance centering on regional electrification, has adopted a policy of gradually shifting the focus of its assistance to the development of power sources, and the Asian Development Bank also has adopted a policy of strengthening its support for power generation and high-pressure system sectors. As principal donors shift emphasis to the development of power sources, there is a strong need to support the power transmission and distribution sectors that will contribute to the enhancement of energy efficiency, and thereby complement the development of power sources.

(2) Electric power sector policy in Vietnam

In Vietnam, the move toward power deregulation has picked up momentum since 2003, and under the Electric Law enacted in July 2005, the policy of introducing the principle of market mechanism has now taken root. Additionally, restructuring on the legal front has been advanced in tandem with restructuring on the organizational front. As a result, the Electricity Regulatory Authority was established in October 2005, and the reorganization of the Vietnam Electricity (EVN) Group, which involved the conversion of the EVN headquarters to a joint stock corporation, the offering of stocks

of subsidiary corporations, and the like, was carried forward.

Moreover, in response to the surge in power demand, because it takes time to invest in the power generation sector, a cabinet order was released concerning the efficient use of energy. This project pursues a reduction of loss in power transmission through the development of transmission and distribution network; thus promoting the effective use of power.

(3) Consistency with JBIC's assistance policy

In its Medium-Term Strategy for Overseas Economic Cooperation Operations (FY2005–2007), JBIC sets forth “foundation for sustained growth” as a priority area in assisting Vietnam. This project aims to contribute to an efficient and stable supply of power through the construction and renovation of medium and low voltage power transmission and distribution facilities in seven principal urban areas of Vietnam, and so the project is consistent with JBIC's assistance policy. Thus it is highly necessary and relevant that JBIC should support the project.

### **3. Project Objectives**

This project aims to ensure a stable power supply to meet the rapidly growing power demand and reduce loss in power transmission by constructing and reinforcing a power transmission network as well as improving distribution lines in industrial complexes and the surrounding areas of Vietnam's principal urban areas; thereby contributing to economic growth and the improvement of living standards in the region.

### **4. Project Description**

(1) Target Area (total: 4 cities, 3 provinces)

North (2 cities, 2 provinces): Hanoi City, Hai Phong City, Hai Duong Province, Hung Yen Province

Central (1 city): Da Nang City

South (1 city, 1 province): Ho Chi Minh City, Dong Nai Province

(2) Project Outline

- (a) Construction and reinforcement of 110 kV power transmission lines
- (b) Construction and expansion of 110 kV substations
- (c) Expansion and rehabilitation of a distribution line network

(3) Total Project Cost / Loan Amount

12,685 million yen (Yen Loan Amount: 10,906 million yen)

(4) Schedule

September 2007–March 2011 (43 months). Project completion is defined as when construction is completed.

(5) Implementation Structure

- (a) Borrower: The Government of the Socialist Republic of Vietnam
- (b) Executing Agency: Seven power distribution companies under the umbrella of Vietnam Electricity (Power Company No. 1, Hanoi Power Company, Hai Duong Power Company, Hai Phong Power Company, Da Nang Power Company, Ho Chi Minh Power Company and

Dong Nai Power Company)

(c) Operation and Maintenance entity: Each of the above distribution companies

(6) Environmental and Social Consideration

(a) Environmental Effects / Land Acquisition and Resident Relocation

(i) Category: FI

(ii) Reason for Categorization

Because it was not possible to identify the subprojects before JBIC authorized the loan, and because it could be assumed that such subprojects would have an impact on the environment, the project is classified as Category FI under the “Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations” (established in April 2002).

(iii) Other

In this project, the executing agencies will give environmental and social consideration based on the JBIC guidelines, and in each subproject, an approach deemed necessary in the category concerned will be adopted. It is assumed that no subprojects classified as Category A will be implemented.

(7) Other Important Issues

None

**5. Outcome Targets**

(1) Evaluation Indicators (Operation and Effect Indicator)

Indicator	Baseline (2006 actual)	Target (2012, 2 years after project completion in the pilot region)
Capacity Availability factor (%) <sup>1</sup> (availability factor of transformer at 110 kV substation: Annual maximum load / transformer capacity)	89.4	81.0
Forced outage hours per user (minutes/year-user)	521	416

Operation and effect indicators related to this project will be selected by designating Hung Yen Province (a project to expand transmission facilities in Yen My District is to be implemented), which is under the jurisdiction of Power Company No. 1, as a pilot region.

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

Because the subprojects are small in scale and numerous, and because they are not identified at the time of appraisal, it is difficult to calculate the internal rate of return. Consequently, it is not calculated.

**6. External Risk Factors**

None

<sup>1</sup> Capacity Availability factor is the maximum load ratio to the maximum output of power facilities. It is advisable to keep it at around 80% so that a stable supply of power will be available under unforeseen circumstances.

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

Sector loan projects are projects whose original plan (project scope) is easily revised or changed during implementation. Thus, in addition to giving a certain breadth to the scope of sector loans, it is advisable that the revision and change should be carried out quickly and flexibly by, among other things, simplifying the procedure for revising and changing the scope. In this project, since seven distribution companies will independently implement the subprojects, they agreed to serve as executing agencies under the condition that EVN, the parent company of the seven distributing companies, will ensure coordination between the distributing companies as the need arises.

### **8. Plans for Future Evaluation**

#### (1) Indicators for Future Evaluation

- (a) Availability factor in the pilot region (availability factor of transformer at 110 kV substation:  
Annual maximum load / transformer capacity) (%)
- (b) Forced outage hours per user per year in the pilot region (minutes/year-user)

#### (2) Timing of Next Evaluation

Two years after project completion