Simplified Ex-Post Evaluation for Grant Aid Project

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Project Name	The Project for Upgrading of Electric Power Supply in Tarawa Atoll (Phase II)	February 2010 – December 2010

I Project Outline

Country Name	Republic of Kiribati	
Project Period	July 2004-December 2005	
Executing Agency	Public Utilities Board (PUB)	
Project Cost	Grant Limit: 796 million yen	Actual Grant Amount: 795 million yen
Main Contractors	(Procurement) Mitsubishi Corporation	
Main Consultants	Yachiyo Engineering Co., Ltd.	
Basic Design	May 2004	
Related Projects (if any)	< TECHNICAL COOPERATION > • Acceptance of energy-sector researchers < GRANT AID > • The Project for Upgrading of Electric Power Supply in Tarawa Atoll (Phase-I) < Other international cooperation and aid agencies, etc.> (1) Australian Agency for International Development (AusAID) • 1994/95 Construction of Bikenibeu Power Station No. 1 and 2 • 1997-July 2000: Tarawa Distribution Network Rehabilitation Plan (Phase I: Technical guidance on operation and maintenance) (2) Asian Development Bank (ADB) • 1988 Procurement of the Besio Power Station No. 8 (Wartila: 1,080 kW; one unit) • 1990 Extension work of a 11 kV distribution line (from South Tarawa to Nabeina District, North Tarawa)	
Project Background	In its National Development Strategies (2004-2007), the Republic of Kiribati recognized the need to renew its power generation and distribution facilities to improve power supply conditions in the country. However, for Kiribati, which is in financial distress, it was difficult to raise funds by itself and construct such facilities. In fact it barely managed to maintain the power supply to the capital by extending the life of the existing facilities and obtaining spare parts. At its power stations, with decrepit power generation facilities as old as 27 years or more since their construction, failures and accidents often took place. In 2002, a fire broke out, forcing some power stations to halt operation. Under such conditions, Kiribati suffered a substantial decline in its power generation capacity.	
Project Objective	To construct power generation facilities and develop a distribution network for securing a highly reliable and stable power supply and to promote electrification in unelectrified areas with a view to realizing a better quality of life for the people, a stable operation of social and public facilities and the revitalization of industries in South Tarawa, which is the economic and social center of Kiribati.	
Output[s] (Japanese Side)	(1) Power station expansion (diesel engines, generators, electrical equipment, mechanical equipment, spares for the power generation facilities, maintenance tools for the power generation facilities, and repair tools included) (2) Distribution network development (distribution substations, circuit breaker panels, high-voltage cables, spares, maintenance tools, and trucks equipped with cranes for maintenance work)	

II Result of the Evaluation

Summary of the evaluation

This project was carried out to solve the power supply problems of Kiribati, which was facing the need to expand its power generation and distribution facilities. The project was therefore relevant with Kiribati's development policies and needs, and with Japan's ODA policy at that time. The project was completed as planned in terms of the outputs, project period, and project cost, demonstrating its high efficiency in implementation. It can also be rated high in its effectiveness and impacts as it yielded a certain degree of effects, such as great improvements in securing a balance between power supply and demand and reducing voltage drops, and it also helped to substantially improve the operation of public facilities and the life of the people. In terms of the environment impact, there seem to be no problems caused by the project. As for the sustainability of the project, the problem of a shortage of qualified people must be resolved. However, the power supply facilities constructed under this project are generally maintained well in terms of the technical and financial conditions, and no major problem was found in their operation or in the maintenance work.

In light of the above, this project is evaluated highly satisfactory.

<Recommendations>

To solve the problem of the shortage of engineers, it is desirable that closer cooperation be established with the Kiribati Technical College for the purpose of developing human resources from the long-term perspective.

1 Relevance

(1) Relevance with the Development Policy of the Republic of Kiribati

The National Development Strategies (2004-2007), a plan Kiribati had in place when this project was designed, recognized that tight power supply conditions in its capital could not be improved without renewing its power generation and distribution facilities. The Kiribati Development Plan (2008-2011), the current program, also mentions the need to develop the infrastructure for economic development among its strategies. The development of the power supply infrastructure has always been rated as an important issue among its development policies.

(2) Relevance with the Development Needs of the Republic of Kiribati

In South Tarawa, which is the capital as well as the economic, industrial and administrative center of Tarawa, a stable power supply was critical to its economic and social development. However, the construction and upgrading of electricity facilities to raise the quality of people's lives has lagged behind. At the time of the ex-post evaluation, the stable power supply has also had a considerable impact on the economy and society by providing an important foundation. This project, therefore, is quite relevant with the development needs of Kiribati.

(3) Relevance with Japan's ODA Policy

When the project plan was formulated, Japan had declared that for island countries in the entire Pacific Area, not only for the Federated States of Micronesia, "(Japan should work to) develop the economic and social infrastructure that should serve as a foundation for their economic and social activities and help them overcome the dispersion and geographical remoteness that they experience," and provided Kiribati with assistance for infrastructure development as a priority area. The implementation of this project is relevant with this policy.

This project has been highly relevant with Kiribati's development plan, development needs, as well as Japan's ODA policy; therefore its relevance is high.

2 Efficiency

(1) Project Outputs

The outputs from the Japanese side were generally delivered as planned.

(2) Project Period

The project was designed to be completed in 20 months in the basic design study and it was actually completed in 17 months, which was shorter than the planned period (85% of the plan).

(3) Project Cost

The project was designed to cost 796 million yen in the original plan, but actually cost 795 million yen, which was lower than the planned amount (99.9% of the plan).

Both project period and project cost were mostly as planned, therefore efficiency of the project is high.

3 Effectiveness / Impact

(1) Quantitative Effects

With the implementation of this project, the generation capacity increased by 1,400 kW and this added capacity has been in use ever since. Since the completion of the project, the total capacity of the power supply, combined with the capacities of other power generation facilities, has always been above the demand level. The frequency of voltage drops has fallen to below the target of 5%, with a delay of two years. The number of waiting consumers did not meet the target of zero in 2006, with 90 households still waiting, which nonetheless represented a significant decline of 78% from the level before the project. The utilization rate of the power supply facilities constructed in this project is gradually rising, with a rate of 50% in 2009, demonstrating a certain level of effects.

(2) Impacts (Impacts on the natural environment, Land Acquisition and Resettlement, Unintended Positive/Negative Impact)

According to the responses from the executing agency, the stable power supply delivered through the implementation of this project has achieved a substantial decline in power cut/outage at public facilities, which can now be operated in a more reliable manner than before the project. In people's lives, significant effects from the power supply can be seen, for instance, in the fact that 24-hour stores and gas stations have appeared. In terms of the environment, an environmental impact assessment was carried out before the project to examine the level of noise, the systems to collect leaked fuel, and the quality of exhaust gases. No incident that could have imposed a burden on the environment has ever taken place. With the current regulations banning the ownership of independent generators, it can be said that in general power generation has little impact on the environment.

This project has largely achieved its objectives; therefore its effectiveness is high.

4 Sustainability

(1) Structural Aspects of Operation Maintenance

Since the implementation of this project, the power supply facilities have been operated and maintained by the power generation and distribution divisions of the Power Engineering Department, the Public Utilities Board (PUB). At the time of the ex-post evaluation, the power generation and distribution divisions had 36 and 11 operation and maintenance staff, respectively. The number of staff is much smaller than the number when this project was planned, which was 47 and 25 at the power generation and distribution divisions, respectively. This is due to personnel reductions in the public sector. According to the executing agency, it has started to hire graduates from Kiribati Technical College to increase its staff, but it is still short of staff for the distribution division.

(2) Technical Aspects of Operation Maintenance

Ninety-six percent of the operation and maintenance staff have work experience of five years or more and have no problems in conducting daily checkups and regular inspections of the facilities that have been in operation for less than 6,000 hours. With on-the-job training (OJT) provided and manuals produced during the project period, the engineers have acquired a sufficient level of operation and maintenance abilities, according to comments made by the executing agency and consultants. The executing agency has stated that after operation for 6,000 hours or more, the facilities are to be overhauled by an agency of the Japanese manufacturer of power generation facilities.

(3) Financial Aspects of Operation Maintenance

It was difficult to obtain financial information focusing on the operation and maintenance activities of the executing agency. Data concerning its general financial conditions show that the executing agency as a whole has been in deficit for years as its fuel expenses have risen sharply due to a steep rise in the oil prices, although its revenues, such as electricity charges, have also generally been on the rise in recent years. However, as the repair expenses are falling rapidly, and its personnel expenses are restrained due to the public-sector reforms, the scale of the deficit of the executing agency as a whole is shrinking. Expenses at the power generation facilities constructed in this project are leveling off, not increasing, which demonstrates a certain degree of contribution they are making to improve the financial condition of the executing agency.

Mainly for the purpose of mitigating impacts on the national economy that may take place as a result of fuel shortages caused by a sharp rise in the price of oil, Japan provided Non-Project Grant Aid in fiscal 2007. (Non-Project Grant Aid for supporting the procurement of general goods and materials has been offered ever since the fiscal year of 2005.)

(4) Current Status of Operation Maintenance

According to the responses from the executing agency, the power supply facilities constructed under this project sometimes halt their operation due to fuel shortages or breakdowns, but appropriate repairs are carried out. There seems to be no major problems in their operating conditions. The executing agency says it maintains a sufficient stock of parts and other supplies. It also stated that it retains the inspection records of the power stations, but does not produce inspection records for the distribution network due to a lack of staff to carry it out.

Some problems have been observed in terms of financial and structural aspects; therefore sustainability of the project effects is fair.