

Ex-Ante Evaluation (for Japanese ODA Loan)

1. Name of the Project

Country: The Republic of the Union of Myanmar

Project: Infrastructure Development Project in Thilawa Area Phase I

Loan Agreement: June 7, 2013

Loan Amount: 20,000 million yen

Borrower: The Republic of the Union of Myanmar

2. Background and Necessity of the Project

(1) Current State and Issues of Thilawa Area in Myanmar

Since President Thein Sein took office in March 2011, Myanmar has been committed to democratization and reconciliation among people, as well as various reforms including the introduction of a managed floating exchange rate system and the promotion of trade liberalization. Thanks to these commitments, the country has been seeing rapid economic growth in recent years. The economy is expected to boom particularly in the Thilawa area, adjacent to the largest city of the country, Yangon, thanks to an expansion of the Greater Yangon and development of the Thilawa Special Economic Zone (hereinafter called the "SEZ"). However an increase in imports due to the recent economic growth is resulting in an increase in the cargo volume, Yangon Port is not large enough to handle growing demand for cargos. Therefore, improving logistics in the Thilawa area through infrastructure development of Thilawa Port, which is located in the southeast from Yangon Port, is now regarded as an urgent task. Meanwhile, power failure due to power supply shortages is frequent in Myanmar: the development of electricity-related facilities including transmission/distribution lines in the Thilawa area is behind that in the city of Yangon and thus the supply shortages are more serious in the area. Given that the development of the area and neighboring areas continues at an accelerating pace, the electricity demand is expected to increase by some 20% from 2012 to 2013, which will make the supply shortage more serious. In such circumstances, the Thilawa area is faced with the issue of underdeveloped infrastructure that currently prevents smooth corporate activities and daily lives of the people, and must urgently expand and develop basic infrastructures, in particular, concerning port and electricity.

(2) Development Policies for the Thilawa Area in Myanmar and the Priority of the Project

The present administration cites ① industrialization based on agriculture, ② fair and equal growth, ③ improvement in statistics and ④ promotion of trade and investment as growth engines as key issues, placing an emphasis on an expansion of trade and invitation of foreign capital. In December 2012, Japanese and Myanmar governments signed the Minute of Cooperation (MOC). It says that the developers of Japan and Myanmar will establish a joint venture as a zone-developer of the Thilawa. As for the roles of the public and private sectors in development in the Thilawa area, the joint venture is in charge of

development of the infrastructure inside the SEZ, whereas the Government of Myanmar has expressed the intention to develop infrastructures outside the zone that bring benefit to residents in the surrounding areas as a public work using Japanese ODA loans since these infrastructures are highly public. In such circumstances, the “Infrastructure Development Project in Thilawa Area Phase I” (hereinafter called the “Project”) will contribute to the development of the area including the Thilawa SEZ by developing electricity and port facilities.

(3) Japan and JICA’s Policy and Operations in the Thilawa Area

Japan’s Country Assistance Program for Myanmar (April 2012) identifies “assistance to development of infrastructure and systems necessary for sustainable economic growth” as one of Myanmar’s priority area, and the Project will contribute to it through the development of infrastructure in the Thilawa area near the Yangon region.

In the transport sector, JICA has sent “transport policy advisor” to the Ministry of Transport of Myanmar to give advice on transport planning including the port sector. JICA plans to rehabilitate the existing power plant and substations in the Yangon region under a Japanese ODA loan project “Urgent Rehabilitation and Upgrade Project Phase I” that has been considered together with the Project. To this end, these projects will contribute to the sustainable economic growth of Myanmar by improving and stabilizing the capacity of power supply to Yangon including the Thilawa area.

(4) Other Donors’ Activity

The World Bank is currently formulating a Public Expenditure Review, an IPP framework and a program for electrification of regions in the electricity sector. The Asian Development Bank is, on the other hand, assisting the formulation of energy policies and revisions to electricity-related laws.

(5) Necessity of the Project

Th Project is consistent with Japan and JICA’s priority area and the issues faced by Myanmar. Thus given the above, JICA’s assistance for the Project is highly necessary and relevant.

3. Project Description

(1) Project Objective

The objective of the Project is to promote inflow of foreign direct investment in Thilawa area by developing necessary infrastructure in the area, which contributes to the development as well as job-creation in the Greater Yangon, hence contributes to the economic development of Myanmar.

(2) Project Site/Target Area: Thilawa area in Yangon Region

(3) Project Components

- 1) Port: development of port terminals at Thilawa Port, including installation of cargo

machinery and construction of buildings

- 2) Electricity: construction of 230/33kV substation, construction of 33kV distribution lines, construction of 230kV transmission line and construction of dual fuel gas turbine (approx. 50MW), and construction of gas pipeline
- 3) Consulting services (detail design, bidding assistance, construction supervision, environmental and social considerations monitoring, etc.)
- (4) Estimated Project Cost (Loan Amount): 30,777 million yen (Loan Amount: 27,711 million yen, of which loan amount of the current phase: 20,000 million yen)
- (5) Schedule

June 2013 - December 2017 (55 months). The project will be completed when the facilities start operation (December 2017).

(6) Project Implementation Structure

- 1) Borrower: The Government of the Republic of the Union of Myanmar
- 2) Guarantor: N/A
- 3) Executing Agencies: Myanmar Port Authority, Myanmar Electric Power Enterprise, Yangon City Electricity Supply Board
- 4) Operation and Maintenance System: Myanmar Port Authority, Myanmar Electric Power Enterprise, Yangon City Electricity Supply Board

(7) Environmental and Social Consideration/Poverty Reduction/Social Development

1) Environmental and Social Consideration

- ① Category: B
- ② Reason for Categorization: The Project does not fall under the category of large-scale projects in the port and the power transmission and distribution line sectors cited in the JICA Guidelines for Environmental and Social Considerations (published in April 2010), so its potential adverse impacts on the environment and society is deemed to be not significant. The Project does not have sensitive characteristics, nor is it located in any sensitive area.
- ③ Environmental Permit: Any law of the country does not require an Environmental Impact Assessment (EIA) for the Project.
- ④ Anti-Pollution Measures: As for port sector, the dredging and water works during the construction work and drainage water after the commencement of services may have negative impacts on water quality. However, the work volume is minimal, so the impacts in either case will be small. In addition, countermeasures such as treatment of surplus water for dredged earth and sand during the work and appropriate water treatment after the service commencement will be carried out, so no significant negative impact on environment is assumed.

As for power setctor, waste water from the work may temporarily cause negative impacts on water quality, but measures including installation of drainage conduits of

rainwater and waste water will be carried out. Similarly, devices to treat emitted gas and remove other pollution sources such as harmful materials including NO_x to air quality, noise and vibrations will be installed, so no significant adverse impact on environment is assumed.

⑤ Natural Environment: The Project area does not fall under the category of vulnerable regions or their surrounding areas such as national parks, so undesirable impacts on the natural environment are assumed to be limited.

⑥ Social Environment: As for port sector, in 1995, the Government of Myanmar acquired necessary land and paid compensations to the affected people. The Project will provide assistance to recover their living, if necessary, according to the JICA Guidelines.

As for power sector, the Project will use public land, requiring neither resettlement of residents nor land acquisition.

⑦ Other / Monitoring: As for port sector, the contractor and the executing agency will monitor the water quality during the construction work, and the operator (the executing agency) after the commencement of services. As for power sector, on the other hand, the executing agency will take countermeasures and monitor the water quality during the work and the air quality and other potential causes of adverse effects after the commencement of services. As for the monitoring activities, environmental and social consideration experts of the consultant hired in the Project will provide assistance.

2) Promotion of Poverty Reduction: The implementation of the Project is expected to create new employment for local residents, and thus to contribute to poverty reductions in the Project area.

3) Promotion of Social Development (e.g. Gender Perspective, Measure for Infectious Diseases Including HIV/AIDS, Participatory Development, Consideration for the Handicapped etc.): The Project involves a large-scale construction work in which a large number of construction workers gather at one place for a long period in a country with a somewhat high risk of AIDS infections. Thus, the executing agency is planning to include a clause on anti-AIDS measures in bidding documents and oblige contractors to take measures against AIDS for workers during the construction work.

(8) Collaboration with Other Donors: N/A

(9) Other Important Issues: N/A

4. Targeted Outcomes

(1) Quantitative Effects

1) Performance Indicators (Operation and Effect Indicator)

Indicator	Baseline (Actual Value in 2013)	Target (2018) 【Expected value 2 years after project completion】
Maximum output (MW)	-	50
Gross thermal efficiency (%)	-	34.8
Net electricity production (GWh/year)		380.4
Container cargo handling volume (TEU/year)	-	187,000
No. of containers handled (box/hr)	-	25
Container detention (days/container)	-	7

2) Internal Rate of Return

- ① Port Sector: based on the conditions indicated below, the economic internal rate of return (EIRR) of the harbor is 15.5%, and the financial internal rate of return (FIRR) is 9.2%.

【EIRR】

Cost: project cost and operating and maintenance costs

Benefit: value added of export containers (value per TEU)

Project Life: 30 years

【FIRR】

Cost: project cost and operating and maintenance costs

Benefit: revenues from harbor charges, mooring charges, terminal charges, container storage charges, lighthouse charges and pier usage charges

Project Life: 30 years

- ② Power Sector: based on the conditions indicated below, the economic internal rate of return (EIRR) of the electricity subproject (for power generator only) is 20.2%.

Cost: project cost (excluding taxes) and operating and maintenance costs (including the cost of gas fuel)

Benefit: an increase in electricity generated

Project Life: 15 years

- (2) Qualitative Effects: Improvement in the investment environment, and promotion of economic and social development

5. External Factors and Risk Control

N/A

6. Results of Evaluations and Lessons Learned from Past Projects

- (1) Results of Evaluation of Similar Past Projects: The ex-post evaluations of similar projects in the past have given a lesson that “site conditions, infrastructure, investment conditions, levels of rents, attraction of enterprises, and other factors” are important for

successful development of an SEZ.

- (2) Lessons for the Project: In light of the above-mentioned lesson, the Project formulated plans to build infrastructure necessary for development of the SEZ while conducting hearings to private enterprises. In addition, the Project will consider providing assistance to enhance the capacity of investment-related services under a separate technical cooperation project.

7. Plan for Future Evaluation

(1) Indicators to be Used

- 1) Container cargo handling volume (TEU/year)
- 2) No. of containers handled (box/hr)
- 3) Container detention (days/container)
- 4) Maximum output (MW)
- 5) Gross thermal efficiency (%)
- 6) Power Generating at sending end (GWM/year)
- 7) Economic internal rate of return (EIRR) (port and electricity) (%)
- 8) Financial internal rate of return (FIRR) (port) (%)

(2) Timing of Next Evaluation

Two years after the Project completion