

Ex-Ante Evaluation

1. Name of the Project

Country: The Republic of the Union of Myanmar

Project: Infrastructure Development Project in Thilawa Area Phase I (II)

Loan Agreement: June 30, 2015

Loan Amount: 14.750 billion yen

Borrower: The Government of the Republic of the Union of Myanmar

2. Background and Necessity of the Project

(1) Current State and Issues on Development of the Special Economic Zone (SEZ) in Myanmar

Since the Thein Sein government's inauguration in March 2011, Myanmar has been implementing initiatives for democratization and national reconciliation as well as a series of reform programs, including the introduction of a managed floating exchange rate system and promotion of trade liberalization. Thus, in recent years the country has been achieving rapid economic growth. In particular, as a result of the expansion of the Yangon Metropolitan Area and the development of the Thilawa Special Economic Zone (SEZ), the Thilawa District (which is located adjacent to Yangon, Myanmar's largest city) is likely to develop rapidly in the near future. Meanwhile, the amount of transported cargo is expected to increase dramatically due to an increase in imports resulting from economic growth. However, it will be difficult for the present Yangon Main Port to meet such future cargo demand. To overcome this difficulty, there is an urgent need to improve logistics in Thilawa District by developing Thilawa Port, which is located southeast of Yangon Main Port. In addition, due to power supply shortages, power outages occur frequently in Myanmar. In particular, Thilawa District lags behind Yangon City in terms of development of electric power facilities, as evidenced by the frequent electricity supply shortages and underdeveloped power grids. If Thilawa District and neighboring areas develop rapidly in the future, power supply shortages will likely be exacerbated. For these reasons, in order to support business and social activities, there is a pressing need to expand and develop basic infrastructures, including most of all port and electric power facilities, in Thilawa District.

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

Myanmar's current government has adopted the following major policies: i) industrialization based on agriculture; ii) fair and equal economic growth; iii) improvement of statistics; and iv) promotion of trade and investment as growth engines. The government places high priority on expanding trade and inviting foreign capital. Based on a Memorandum of Cooperation (MOC) concluded in December 2012 between the governments of Myanmar and Japan, it was agreed that a joint venture organized by companies from Japan and Myanmar will develop

an SEZ in Thilawa District in the future. To develop Thilawa District, infrastructures inside the SEZ will be developed by the joint venture based on a division of roles between the public and private sectors. However, given the public nature of peripheral infrastructure facilities outside the SEZ, Myanmar's government has adopted the policy of developing such facilities as a public project using an ODA loan to bring benefits to residents in the surrounding areas. Against this backdrop, Infrastructure Development Project in Thilawa Area Phase I (the current project) will contribute to the development of the district, including the Thilawa SEZ, by developing electric power and port facilities in the district.

(3) Japan and JICA's Policy and Operations to Develop the SEZ

In the economic cooperation policy for Myanmar announced on April 21, 2012, the Japanese government proposed a policy of providing support to develop the infrastructures and systems required for sustained economic growth. The current project aims to contribute to sustained economic growth through promotion of direct overseas investment by developing infrastructures in Thilawa District. As such, the project is consistent with Japanese government policy. In addition, at the Economic Cooperation Infrastructure Strategy Meeting held on March 13, 2013, it was agreed to consider using funds based on JICA's overseas investment financing for the Thilawa SEZ. Then, in April 2014, a decision was made to provide funding to develop an advanced development zone (Class A) in the Thilawa SEZ. In addition to the current project, a number of other projects are already scheduled to be implemented, including Infrastructure Development Project in Thilawa Area Phase II (concluded in September 2014; loan amount: 4.6 billion yen; development of an access road from Yangon) to develop peripheral infrastructures, the Yangon Metropolitan Area Water Supply System Development Project, and the Telecommunications Network Improvement Project (ODA loan projects). JICA implemented a technical cooperation project to support the drafting of the revised SEZ Act and detailed rules, and JICA also plans to implement programs for improving the skills of Thilawa SEZ Management Committee members and for port management skills training.

(4) Other Donors' Activity

No other donors have implemented SEZ development projects in the past.

(5) Necessity of the Project

As described above, this project is consistent with Myanmar's policies on development issues as well as Japan's and JICA's assistance policies in high-priority areas. Therefore, it is necessary and highly relevant for JICA to support this project.

3. Project Description

(1) Project Objectives

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.

As for Port Sector, to establish new multipurpose terminals and develop infrastructure related to the terminals in Yangon Port in Thilawa area.

(2) Project Site/Target Area

Thilawa District in Yangon Region

(3) Project Components

- 1) Development of a Port Terminal (installation of cargo handling machines and development of a port terminal at the Thilawa District port, including construction of buildings)
- 2) Development of Electric Power Facilities (33kV power lines, a 50MW power generation plant, 230kV transformers, and gas pipeline)
- 3) Consulting Services (Detailed Design, Tender Assistance, Construction Supervision, Environmental and Social Considerations, etc.)

(4) Estimated Project Cost (Loan Amount)

38.945 billion yen

(Total loan amount: 34.750 billion yen; of which, the loan amount for the current period: 14.750 billion yen)

(5) Schedule

June 2013 to September 2018 (64 months in total). The project will be completed when port facilities are placed into operation (October 2017).

(6) Project Implementation Structure

- 1) Borrower: The Government of the Republic of the Union of Myanmar
- 2) Guarantor: None
- 3) Executing agency: Myanma Port Authority, Myanma Electric Power Enterprise, and Yangon City Electricity Supply Board
- 4) Operation and maintenance system: Myanma Port Authority, Myanma Electric Power Enterprise, and Yangon City Electricity Supply Board

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

1) Environmental and social considerations

- ① Category: B
- ② Reason for categorization: This project does not fit the definition of a large-scale Power transmission and distribution lines sector project described in JICA's Guidelines for Environmental and Social Considerations (issued in April 2010, "JICA Guidelines") and is unlikely to have any serious adverse environmental impacts. In addition, the targeted area does not have, nor is expected to have, any of the environmental impacts specified in the guidelines.
- ③ Environmental permit: Any law of the country does not require an Environmental Impact Assessment (EIA).

- ④ Anti-pollution measures: Adverse environmental impacts will be minimized by treating residual water from sludge to prevent water contamination during port facility construction and by properly treating wastewater to prevent water contamination during facility operation. Rainwater drain gutters will also be built to prevent water contamination during electricity facility construction, and exhaust gas treatment systems will be introduced to prevent air pollution, noise, and vibrations during facility operation, thereby minimizing adverse environmental impacts.
- ⑤ Natural environment: The project site is not located in or around sensitive areas such as national parks, and adverse impacts on the natural environment are assumed to be minimal.
- ⑥ Social environment: At the project site, besides the acquisition of approximately 0.25 ha of land, 10 farmers cultivating government land will be affected by the project. It has been confirmed that appropriate compensatory measures will be taken based on a quick resident relocation plan prepared in accordance with JICA guidelines.
- ⑦ Other / Monitoring: Regarding port development, water quality will be monitored during construction and facility operation. Regarding electric power facility development, air quality will be monitored during construction and facility operation. Monitoring will be performed by construction companies during construction and by the executing agency during facility operation.
- 2) Promotion of Poverty Reduction: None
- 3) Promotion of Social Development (e.g., Gender Perspectives, Measures for Infectious Diseases Including HIV/AIDS, Participatory Development, Considerations for People with Disabilities, etc.): None
- (8) Collaboration with Other Donors: None
- (9) Other Important Issues: None

4. Targeted Outcomes

(1) Quantitative Effects

1) Performance indicators (operation and effect indicators)

Indicator	Baseline (Actual value in 2013)	Target (2019) (Expected value 2 years after project completion)
Standard output capacity (MW)	-	50
Thermal efficiency at the power-generating end (%) (LHV)	-	34.8
Electric energy at the power-sending end (GWh/year)	-	380.4
Amount of container cargo handled annually (TEU/year)	-	187,000

No. of containers handled per hour (boxes/hr.)	-	25
No. of days* containers remain at the port (days/container)	-	7

* The number of days required from the time a ship docks to departure of containers from the gate

2) Internal rate of return

(1) Port: Based on the conditions indicated below, the Economic Internal Rate of Return (EIRR) of the port sub-project is calculated to be 12.9% and the Financial Internal Rate of Return (FIRR) to be 5.2%.

[EIRR]

Cost: Project costs (excluding taxes) and management/maintenance costs

Benefit: Added value for exported containers (value per TEU)

Project life: 30 years

[FIRR]

Cost: Project costs (excluding taxes) and management/maintenance costs

Benefit: Revenue from port entry fees, ship mooring fees, cargo handling fees, container storage fees, lighthouse fees, and wharf usage fees

Project life: 30 years

(2) Electricity: Based on the conditions indicated below, the Economic Internal Rate of Return (EIRR) of the electricity sub-project is calculated to be 20.2%.

Cost: Project costs (excluding taxes) and management/maintenance costs (including gas fuel costs)

Benefit: Increased power supply

Project life: 15 years

(2) Qualitative Effects: Promotion of investment, development of the Yangon Metropolitan Area, creation of employment opportunities, and economic growth

5. External Factors and Risk Control

None

6. Lessons Learned from Past Projects

The ex-post evaluation of the Dumai Port Development Project, a past port development project in Indonesia, underscored the need to develop not only port facilities but also roads and other peripheral infrastructures in tandem with port facilities. In this project, the existing roads and roads to be developed by the SEZ Development Corporation are expected to be used to access companies operating in the Thilawa SEZ. It has also been decided to develop an access road between Yangon and the Thilawa SEZ using an ODA loan. In addition, in the ex-post evaluation of the Mombasa Diesel Generating Power Plant Project, another past project in Kenya, it was pointed out that development and appropriate management of a technical cooperation system between contractors and the executing agency led to improvement in the management skills of power generation plant personnel. In this

project, measures will be taken to transfer technologies from consultants and contractors to the executing agency.

7. Plan for Future Evaluation

(1) Indicators to Use

- 1) Amount of container cargo handled annually (TEU/year)
- 2) No. of containers handled per hour (boxes/hr.)
- 3) No. of days containers remain at the port (days/container)
- 4) Maximum output capacity (MW)
- 5) Thermal efficiency at the power-generating end (%)
- 6) Electric energy at the power-sending end (GWh/year)
- 7) EIRR (port and electricity) (%)
- 8) FIRR (port) (%)

(2) Timing

2 years after project completion