ANNEX III

PRIORITY PROJECT SHEET

ANNEX III. PRIORITY PROJECT SHEETS

1. Project Title

A. BETTER URBAN ENVIRONMENT

A.1 Development of MRT-based New Urban Transport System

(3) Development of Jakarta Monorail

2. Project Description

2.1 Objective

One of the main problems that the JABODETABEK region is serious traffic congestion caused by the limited capacity of the current road network. The MP3EI proposes several strategies to address these issues. One proposal is the development of an interconnected mass transportation network which includes building a monorail system. A circular monorail line in Jakarta CBD will support business activities. Extending the line to the Ragunan Zoo would serve commuters from the southern part of Jakarta to the CBD. These monorail lines would alleviate traffic congestion by encouraging private passenger car users to shift to monorail.

2.2 Necessity of the Project

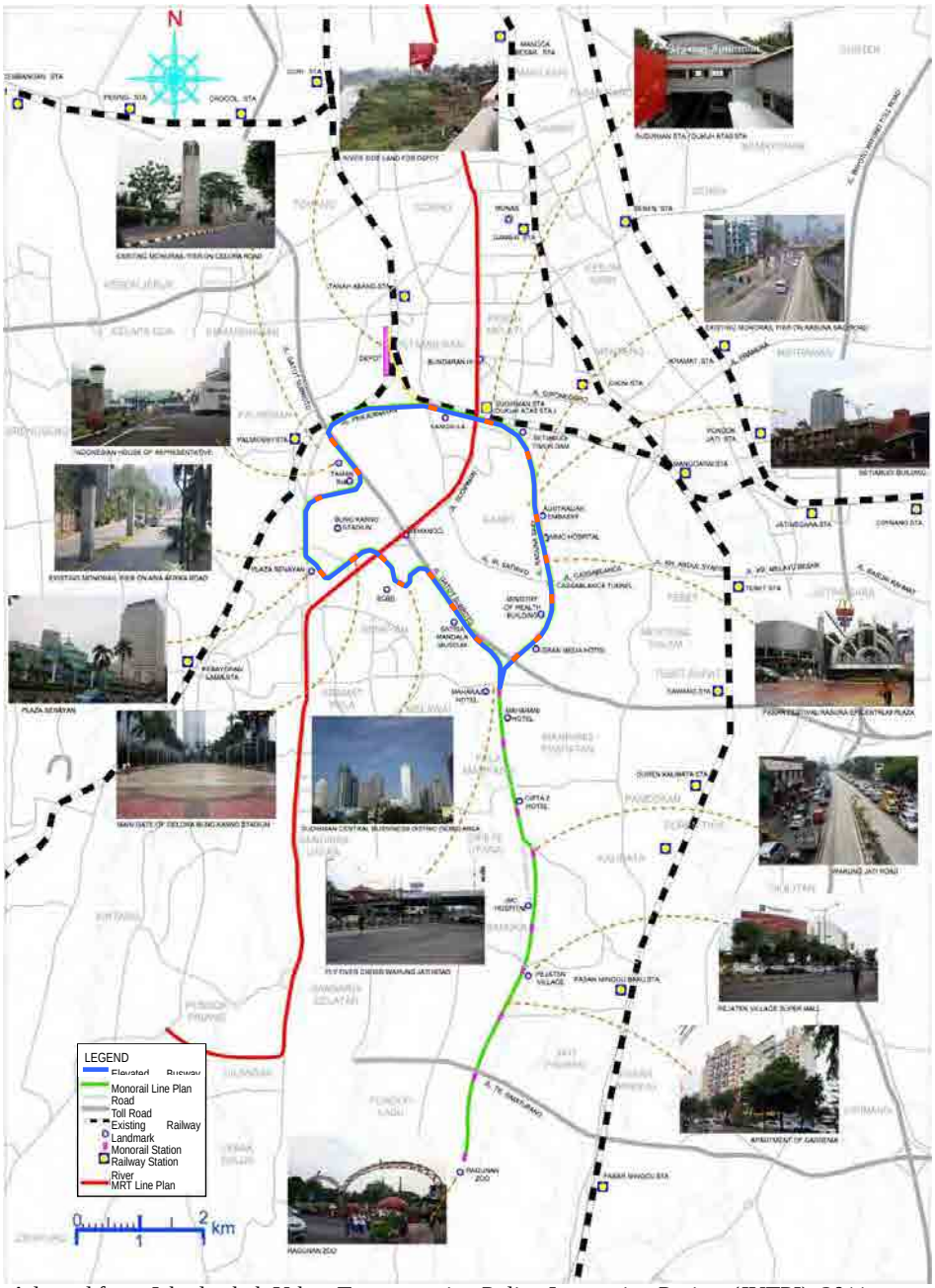
The construction of the monorail system and MRT are expected to alleviate serious traffic congestion in the city center by accelerating the traffic modal shift from vehicles to mass transportation system. In 2004, the Government of DKI Jakarta appointed PT. Jakarta Monorail and its consortium to develop the monorail system using the BOT scheme. Structural civil works such as foundations and piers were constructed but the construction works were halted in 2008 due to legal and financial problems. Accordingly, many uncompleted structures (approximately 170 piles and piers) have been abandoned in the city center. Currently, DKI Jakarta is negotiating the termination of the concession agreement with PT. Jakarta Monorail. Studies are now being made for the possible re-use of the existing uncompleted structure in the city. DKI Jakarta has announced the circular line would be converted into elevated bus way. Therefore, the monorail system could be developed for the remaining section between Kuningan Barat and Ragunan.

2.3 Project Features

1.	System	Straddle-type Monorail
2.	Route	Kuningan Barat to Ragunan Zoo
3.	Length	7.6 km
4.	No. of Stations	9 elevated stations
5.	Depot and Workshop	1 location

Source: Jabodetabek Urban Transportation Policy Integration Project (JUTPI), 2011

3. Project Images



Source: Adopted from Jabodetabek Urban Transportation Policy Integration Project (JUTPI), 2011

Project Location Map

4. Expected Benefits

- Promotion of public transportation use;
- Provision of safe and efficient transport mode;
- Alleviation of traffic congestion;
- Reduction of air pollutants and traffic noise; and
- Reduction of transportation accidents and security improvements.

5. Project Cost and Funding Scheme

5.1 Project Cost

The preliminary cost for the project is estimated to be IDR 2,685 billion (JPY 24,382 million) including construction cost, E&M cost, procurement of rolling stocks, engineering cost, and contingency cost.

Preliminary Estimation of Project Cost

Item		Construction Cost	
		JPY Million	Equivalent IDR Billion
Civil Works	Girder	2,580	284
	Foundation & Pier	3,440	379
	Bridge	200	22
	Station	3,150	347
	Depot Civil	1,275	140
Total Civil Cost		27,330	10,645
E&M	Signal	1,290	142
	Telecom	860	95
	Power Supply System	3,010	331
	Station Facilities	1,440	159
	Track Switch	390	43
	Depot Equipment	1,600	176
Rolling Stock		8,000	2,880
Total E&M and Rolling Stock Cost		28,510	11,470
Total Construction Cost	(a)	22,115	2,436
Consulting Cost	(b) = 5% of (a)	1,106	122
Contingency	(c) = 5% of ((a)+(b))	1,161	128
Total Project Cost	**(a)+(b)+(c)**	**24,382**	**2,685**

Note: JPY 1 = IDR 110.13
Source: MPA Study Team

5.2 Funding Scheme

As listed in the PPP Book 2011, the investment for the project will be done under the PPP scheme. The capital investment for infrastructure, E&M, cost and land acquisition shall be borne by the central government and DKI Jakarta. Operation and maintenance (O&M) costs of all railway facilities, equipment and capital investment for rolling stocks shall be borne by the monorail operator.

	Public	Private	Remarks
Land Acquisition	√		Central and DKI Jakarta Government
E&M	√		Central and DKI Jakarta Government
O&M		√	Monorail Operator

Source: MPA Study Team

6. Current Status and Implementation Schedule

6.1 Current Status

- The project is listed in the PPP Book 2011;
- The project is included in the Revision of SITRAMP Transportation Master Plan which will be completed in March 2012;
- DKI Jakarta and the Central Government agreed that both government units would each share a half of the investment cost for infrastructure works; and
- DKI Jakarta and PT Jakarta Monorail are negotiating about the compensation and termination of the previous concession agreement.

6.2 Implementation Schedule

Stage	Target Date
(1) Finalizing the Negotiations with PT Jakarta Monorail	2012*
(2) Completion of Feasibility Study	2012*
(3) Completion of Detailed Design	End of 2013
(4) Selection of Contractor and Operator	Third quarter of 2014
(5) Construction and Systems Installation	2015 - 2016
(6) Commencement of Service	Beginning of 2017

Note: *Not complete due to a cancelation
Source: MPA Study Team

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- This project will be excluded when the GOI approves the termination of monorail plan

1. Project Title

A. BETTER URBAN ENVIRONMENT

A.1 Development of MRT-based New Urban Transport System

(4) Station Plaza Development and Park & Ride System Enhancement

2. Project Description

2.1 Objective

One of the strategies undertaken to address the challenges of traffic congestion in the MP3EI is the development of an interconnected mass transportation network in JABODETABEK. Improvement of the access roads to railway stations and the provision of intermodal facilities such as station plazas would enhance accessibility to the railway system and would lead to an increase in ridership for public transportation. In addition, park and ride facility development will also enhance easy access to the mass transportation system.

2.2 Necessity of the Project

Most of the existing railway stations in JABODETABEK have no adequate access roads which cause traffic jams and other inconveniences to railway passengers. Many station plazas are too small which limit car and bus access. Facilities are provided at some of the stations. In order to provide better access to the railway stations, access roads and station plazas for both existing and new stations should be developed.

In addition, the Transit Oriented Development (TOD), which involves high dense urban development in the surrounding areas of the railway stations, should be introduced to promote mass transportation by making offices and residential places closer to the stations.

2.3 Project Features

The candidate locations for TOD shall be selected from interchange points of the mass transportation network and other locations that are already developed, but do not have any access to mass transportation network.

1) Interchange Point of Mass Transportation
   a) Manggarai

      When the workshop for electric rail cars at Manggarai were relocated to Depok and the workshop for cabin were moved to another location, the vacated area can be utilized for urban facilities such as office buildings, convention centers, hotels, and other commercial facilities. Manggarai is located at the center of Jakarta and can be reached by the Bogor, Bekasi, and Serpong Lines if a shortcut line is developed between Pal Merah and Karet. Therefore, the potential of the TOD is significantly high.

   b) Dukuh Atas

      Dukuh Atas (or Sudirman) will be the interchange station of the west line of JABODETABEK railway and MRT North-South Line.

   c) Kampung Bandan

      Kampung Bandan can be developed as an integrated commercial and residential facility with MRT and JABODETABEK train depots.

d) Senen

Senen will be the interchange point of the east line of JABODETABEK railway and MRT East-West Line 1B. When Pasar Senen and Senen bus terminals are renovated, a large scale urban re-development will be undertaken.

e) Blok M

Blok M will be the interchange point of MRT North-South Line and MRT East-West Line and will also connect with the existing Blok M bus terminal. Even at present, the increase in shopping malls and commercial facilities attract people for shopping. Thus, this location can be the TOD area in the southern part of Jakarta.

2) High Density Developed Urban Areas

a) Kemayoran

The Ex-Kemayoran airport area has highly developed business and commercial facilities including the Jakarta International Expo and other high rise apartments. However, the area has no sufficient mass transportation service which needs to be addressed.

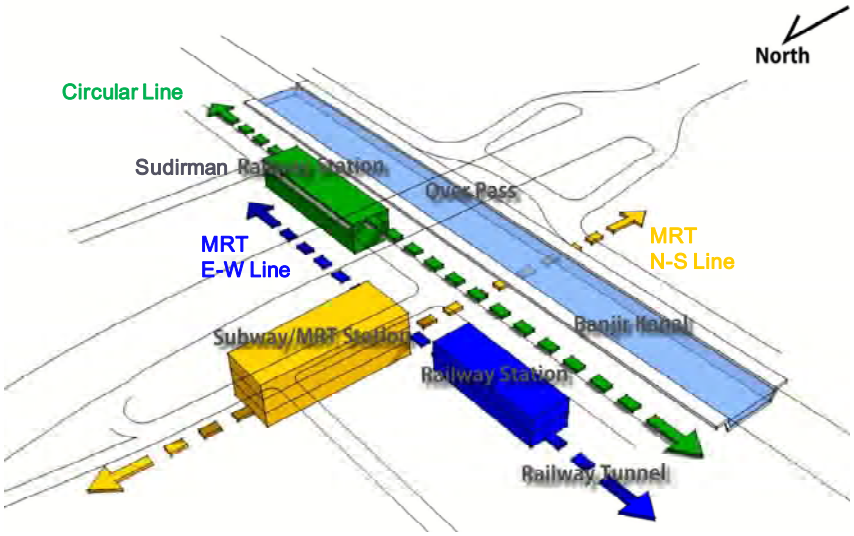
b) Kelapa Gading

The Kelapa Gading area has been developed since 2000. The area has a large-scale shopping mall and high rise apartments. Similar to the Kemayoran area, this area also has no sufficient mass transit service. Thus, the introduction of a new mass transportation system could make this a TOD area.

Among several other locations, Dukuh Atas (or Sudirman) was selected as the first area for implementing the TOD scheme with the following facilities:

- Underground space (approximately 7,000 m^2) : underground station plaza, underground walkways, underground commercial facilities, etc.; and
- Artificial ground on Banjir Canal (approximately 25,000 m^2): car park, motorcycle park, bicycle park, bus stop, taxi stop, car stop, etc.

3. Project Images



Source: The PPP Study on Station Development at Dukuh Atas Station (ICR), 2011

MRT Sudirman Station without a Station Plaza at present

Source: The PPP Study on Station Development at Dukuh Atas Station (ICR), 2011

Station Plaza at the Sudirman Station of JABODETABEK Railway and MRT North-South Line

4. Expected Benefits

- TOD promotes mass transportation use by shortening the distance between offices, shopping malls, and residential areas. Modal shift to mass transportation would contribute to the alleviation of traffic congestion in the city; and
- Development and improvement of access roads to the railway stations and station plazas will make the use of mass transportation convenient and promote public transportation. It would also lead to lesser traffic congestion that would help reduce vehicle operating and travel time costs.

5. Project Cost and Fund Scheme

5.1 Project Cost

The initial investment cost estimates for the development of Dukuh Atas (or Sudirman) area is IDR 4,400 billion. This cost includes the construction of a 25,000 m^2 two floors of artificial ground, walkways, station plaza, and service facilities, and 7,000 m^2 of underpass and underground station plaza.

Initial Investment Cost

Item	Construction Cost (IDR Billion)
Artificial Ground and Station Plaza	2,200
Underpass and Underground Station Plaza	2,200

Note: The Project Cost is under study.

Source: The PPP Study on Station Development at Dukuh Atas Station (ICR), 2011

5.2 Funding Scheme

This project will be implemented using the PPP scheme. The government is responsible for land acquisition, resettlement, and MRT projects, while the private sector (Special Purpose Company (SPC)) is responsible for the design, construction, operation and maintenance of the facilities.

	Public	Private	Remarks
Land Acquisition and Resettlement	√		
Design and Construction of Artificial Ground and Station Plaza	√	√	
Design and Construction of Underpass and Underground Station Plaza	√	√	
Operation and Maintenance		√	

Note: The Project Cost is under study.

Source: The PPP Study on Station Development at Dukuh Atas Station (ICR), 2011

6. Current Status and Implementation Schedule

6.1 Current Status

The Feasibility Study for the Dukuh Atas Station Area Development has started in December 2011 and it will be completed in December 2012.

6.2 Implementation Schedule

Stage	Target Date
(1) Feasibility Study	2011-2012
(2) Preparation of Implementation Plan	2013
(3) Selection of Concessionaire	the second quarter of 2014
(4) Engineering Design	2014-2015
(5) Construction	2015-2018
(6) Commencement of Services	2018

Source: The PPP Study on Station Development at Dukuh Atas Station (ICR), 2011

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Formulation of Implementation Plan, including EIA/LARAP;
- Selection of Investment Scheme; and
- Listing on PPP Book by GOI.

1. Project Title

A. BETTER URBAN ENVIRONMENT

A.1 Development of MRT-based New Urban Transport System

(5) Introduction of Common Ticketing System (Smart Card)

2. Project Description

2.1 Objective

The project aims to improve transportation efficiency by introducing the "Smart Card" system. The card is expected to function as a common ticket which can be used for several transportation modes, such as subway, railway, toll road, and bus. It is expected that the smart card can be utilized for the payment system of Electric Toll System (ETC) and Electric Road Pricing (ERP). The Smart Card also will have function as "E-money" which can be used for various purposes, including toll road tariff, fuel charge, parking, and shopping.

2.2 Necessity of the Project

At present, the use of E-ticketing and E-payment has been increasing. The "Smart Card" is a medium which enables transport payment procedures to be done electronically instead of using cash. The system has been partially adopted in several modes, such as TransJakarta and in toll roads. Also, it is expected that such system will be introduced in MRT, ERP, and ERP projects. However, if the system did not realize its inter-linkage, users will have to purchase one card per mode of transportation. Therefore, this will be very inconvenient for users and it is anticipated that it might undermine smooth and efficient transportation in the future. It is thought that the introduction of the "Common Ticketing System" will result in a convenient and smooth transportation system in the JABODETABEK area.

2.3 Project Features

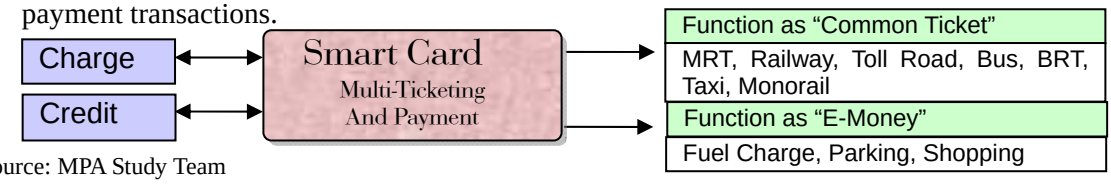
The main features of the project are as follows:

1) The Smart Card shall function as a common ticket which can be used for all transportation modes such as subway, railway, toll road, and bus;
2) The Smart Card can be used as payment system for ETC and ERP which are to be introduced in the near future;
3) It should also function as "E-Money" which can be used for various other purposes (e.g. fuel charge, parking, and shopping) ; and
4) Easy access to the card should be secured. For example, it should be available for purchase in various places and without opening bank accounts.

With a presumption that the card can be used for other transport modes and commercial facilities like SUICA and PASMO in Japan, it is expected to adapt the most suitable card type from the viewpoints of security, extensibility, and process speed, etc.

3. Project Images

The following is the image of the project. As mentioned above, the card will function as a "Common Ticket" and "E-Money", it is assumed that users can make payment either by charging to the card or by credit. The investor will develop the system and manage the payment transactions.



Source: MPA Study Team

Payment Method

4. Expected Benefits

Expected benefits of the project are as follows:

1) Ticketing process will be faster and convenient;
2) User traffic flow will be efficient; and
3) It will be more convenient for users if the card can be used for multiple purposes.

5. Project Cost and Funding Scheme

5.1 Project Cost

Initial investments are necessary for the following items:

a) Production and distribution of "Smart Card";
b) Production and distribution of "Card Readers"; and
c) Development of program and systems.

The total investment costs depend on the volume of distribution which is still unknown. It was tentatively assumed that the cost is IDR 500 billion.

5.2 Funding Scheme

In principle, all necessary investment and operating costs will be handled by private entities. This kind of system is already adopted in other countries and they are operating on a purely commercial basis. Also, E-ticketing and E-money, which are currently being used in Indonesia, have also run on a purely commercial basis. Thus, it is considered that the project is viable without financial support from the government.

	Public	Private	Remarks
Production and Distribution of "Smart Card"		√	
Production and Distribution of "Card Readers"		√	
Development of Program and System		√	

Source: MPA Study Team

6. Current Status and Implementation Schedule

6.1 Current Status

At present, there is no concrete idea or plan to introduce the "Common Ticketing System".

6.2 Implementation Schedule

The project will be implemented on a purely commercial basis. Therefore, the government's public procurement process is not needed. The following table shows the approximate schedule of the project.

Stage	Target Date
(1) Project Planning	2012
(2) System Development	2012-2013
(3) Commencement of Operation	2014

Source: MPA Study Team

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Coordination among Key Transportation Companies for the Operation of Smart Card, including Distribution of Card and Card-Readers; and
- Unification of Integrating Ticketing System

1. Project Title

A. BETTER URBAN ENVIRONMENT

A.2 Development of Road Network in and around Jakarta

(2) Development of Jakarta Outer Outer Ring Road

2. Project Description

2.1 Objectives

The primary objective of the development of the Outer Outer Ring Road is to increase the road capacity in the JABODETABEK which is included in the Java Economic Corridor Development in MP3EI. The second objective of the project is to promote sub-center development to reduce the excessive concentration of economic activities in Jakarta in order to alleviate traffic congestion in the central area.

2.2 Necessity of the Project

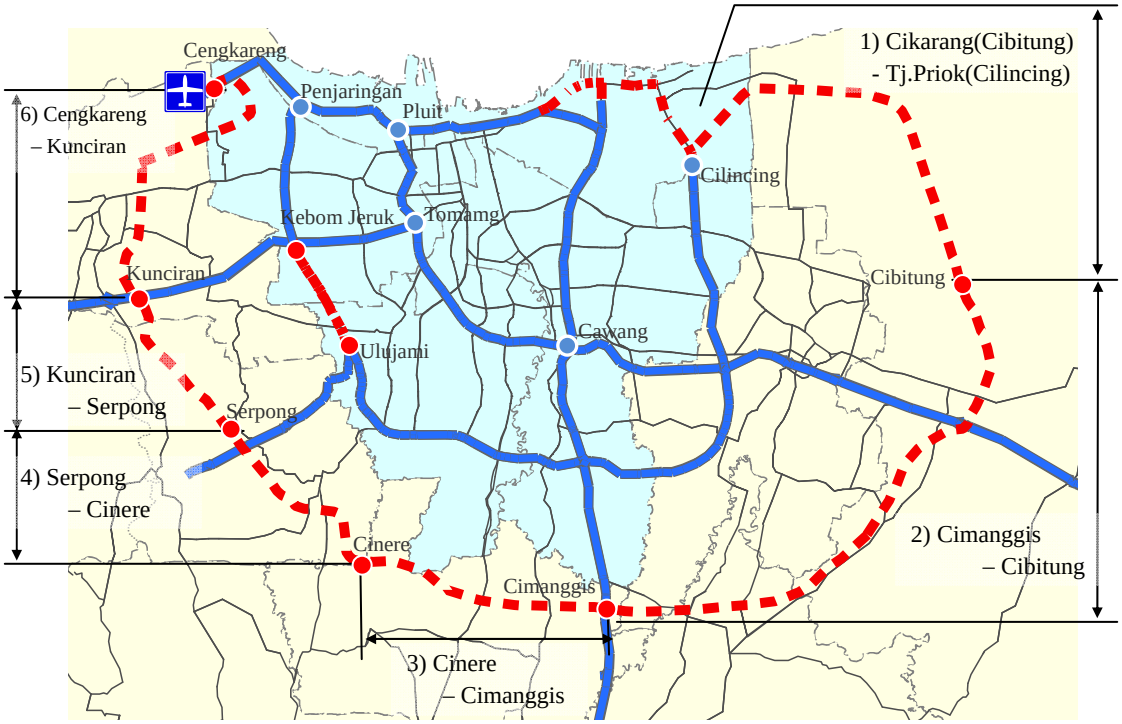
Traffic congestion in JABODETABEK causes significant economic losses and is predicted to get worse because of the increasing traffic demand. Further improvement of the toll road network in JABODETABEK will be required for sustainable economic development. In particular, Section 1 (Cikarang-Tj.Priok) is an essential route of commodity distribution for east region in JABODETABEK.

2.3 Project Features

The circumferential road could serve as an alternate route when some road sections are congested or damaged due to natural disaster or traffic accidents. The development of the circumferential road makes the toll road network robust and reliable.

1) Cikarang (Cibitung) - Tj.Priok (Cilincing)
2) Cimanggis - Cibitung
3) Cinere - Cimanggis
4) Serpong - Cinere
5) Kunciran - Serpong
6) Cengkareng - Kunciran

3. Project Images



Source: MPA Study Team

4. Expected Benefits

Expected benefits on the development of the Outer Outer Ring Road are as follows:

- By completing the circumferential road network, road users can avoid the congested central area thus would contribute to ease traffic congestion in the CBD.
- By reducing traffic congestion, reduction in travel time cost as well as vehicle operating cost are expected.

5. Project Cost and Funding Scheme

5.1 Project Cost

Project cost of each section is estimated below:

No	Road Name	Length (km)	Cost (IDR billion)	
			Land Cost	Investment Cost
1	Cikarang (Cibitung) - Tanjung Priok (Cilincing)	33.92	300	4,200
2	Cimanggis - Cibitung	25.39	1,300	4,500
3	Cinere - Cimanggis	14.64	950	2,900
4	Serpong - Cinere	10.14	700	2,200
5	Kunciran - Serpong	11.19	1,000	2,600
6	Cengkareng - Kunciran	14.19	1,200	3,500

Source: BPJT Interview Result

5.2 Funding Scheme (PPP)

With regards to funding scheme, it is assumed that toll road operations will be handled by the private sector. Three kinds of possible funding schemes will be prepared by assigning the financial responsibility between the public and private sectors for the design and construction of the project as shown in the table below.

	Case I		**Case II**		**Case III**	
	Public	Private	Public	Private	Public	Private
Land acquisition	√		√			√
Design and Construction	√		√	√		√
Operation and Maintenance		√		√		√

Source: MPA Study Team

No	Road Name	Concession Company	Project Type
1	Cikarang (Cibitung) - Tanjung Priok (Cilincing)	PT. MTD CTP Expressway	BOT
2	Cimanggis - Cibitung	PT. Cimanggis Cibitung Tollways	BOT
3	Cinere - Cimanggis	PT. Translingkar Kita Jaya	BOT
4	Serpong - Cinere	PT. Cinere Serpong Jaya	BOT
5	Kunciran - Serpong	PT. Marga Trans Nusantara	BOT
6	Cengkareng - Kunciran	PT. Marga Kunciran Cengkareng	BOT

Source: BPJT Interview Result

6. Current Status and Implementation Schedule

6.1 Current Status

	No	Road Name	Status (as of October 2011)				Opening Year
			Concession Agreement	Detailed Engineering Design	Land Acquisition	Construction	
2nd JORR	1	Cikarang (Cibitung) - Tanjung Priok (Cilincing)	Signed	In Preparation	-	-	2014
	2	Cimanggis - Cibitung	Signed	In Preparation	In Process	-	2014
	3	Cinere - Cimanggis	Signed	Completed	In Process (37.42%)	Under Construction	2012
	4	Serpong – Cinere	Signed	In Preparation	-	-	2015
	5	Kunciran - Serpong	Signed	Completed	-	-	2014
	6	Cengkareng – Kunciran	Signed	In Preparation	-	-	2014

Source: BPJT Interview Result

6.2 Implementation Schedule

Stage	Target Date
(1) Opening of Cikarang (Cibitung) – Tanjung Priok (Cilincing)	2014
(2) Opening of Cimanggis-Cibitung	2014
(3) Opening of Cinere- Cimanggis	2012
(4) Opening of Serpong-Cinere	2015
(5) Opening of Kunciran - Serpong	2014
(6) Opening of Cengkareng – Kunciran	2014

Source: BPJT Interview Result

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Land Acquisition for the Route of the Road with the Enforcement of New Appropriation of Land Law.

1. Project Title

A. BETTER URBAN ENVIRONMENT

A.2 Development of Road Network in and around Jakarta

(3) Introduction of Intelligent Transport System (ITS) in JABODETABEK

2. Project Description

2.1 Objective

Intelligent Transport System (ITS) aims to form a comprehensive system which can prepare a safe, smooth and pleasant environment for road traffic by providing traffic information and by regulating the use of private transportation through the use of information and communication technology.

2.2 Necessity of the Project

Urban transportation problems, such as traffic congestion, are worsening in JABODETABEK area especially in the city center. It has been a concern that this will hinder economic development by limiting the flow of people and goods. Regarding the transportation problem as one of the most important issues that needs to be solved, DKI Jakarta province has been planning to provide new transport modes such as MRTs, monorails, and bus rapid transits. In light of this situation, restricting passenger car traffic and promoting the use of public transport through the road pricing scheme are important and urgently required for the realization of a successful urban transportation policy. Road pricing is one of the most drastic road transportation control measures to alleviate traffic congestion and reduce air pollution. The Electronic Road Pricing (ERP) is included in the action plan presented by the Vice President in 2010 and the progress is monitored by the presidential working unit for development monitoring and control (UKP4). (** Presidential Decree No. 32, 2011 regarding the ERP was issued in June 2011.)

In addition, by providing information on traffic, road users will be able to find and use the route with less congestion and this can alleviate traffic congestion for the whole region while the creation of new roads requires huge cost and time due to land acquisition issue.

2.3 Project Features

1) Introduction of Electronic Road Pricing (ERP) System

a) Concept of ERP system

The charging method for Jakarta would be the “Area Pricing” method limited to trunk roads or the “Corridor Pricing”, in particular to those that offer alternative public transport modes. Vehicles traveling on the trunk roads within the road pricing area will be charged of a certain fee, and toll gates will be installed at certain intervals so that even vehicles traveling at a relatively short distance would be charged. Vehicle will be charged once with one standard fee therefore vehicles which have already been charged will not be charged again at subsequent toll gates.

b) Phase 1: Conversion from 3-in-1 scheme

In Phase 1 of the project, the current 3-in-1 (a traffic regulation which allows only vehicles with minimum of three passengers to drive on the restricted roads) roads (total length: 17 km) will be converted to the “road pricing system”. That is, each passing vehicle will be equipped with an on-board unit (OBU), and road pricing charge is deducted from the prepaid card inserted into the OBU when the vehicle passes through a gantry (checkpoint) installed on the target roads for the first time of each operation period.

c) Phase 2: ERP system for city center

In Phase 2, there will be a switch to "Area Pricing" where all trunk roads within the congested area are subjected to charges instead of just the 3-in-1 corridor. Trunk roads that are parallel to the Transjakarta Busway routes and inside the designated congested area were selected as target roads (total length: 46 km) for Phase 2.

d) Outline of the ERP scheme

The hours of operation of the "Road Pricing scheme" will be during the peak hours on weekdays. The target vehicles are automobiles and motorcycles, including vans and pickups. Emergency vehicles and public transport vehicles will be exempted as well as large trucks which movements were already been restricted in terms of time and route.

2) Traffic Information System (TIS)

a) Advanced Traffic Information System

The advanced Traffic Information System (TIS) consists of traffic information collection components, traffic information center, and information distribution.

- Traffic information collection system utilizing taxis equipped with global positioning system (GPS) and general packet radio service (GPRS);
- Traffic information center collects information from taxis and estimate travel time through each road section; and
- Through media such as variable message signboards (VMS), text and graphical information boards (in a drawing/map with colored roads), web sites and radio, travel speed information as well as traffic congestion information will be distributed. Furthermore, traffic information including route guidance information will also be provided to avoid congested road sections or to estimate the travel time from one point in the city to another.

b) Integration with traffic signals

Signal control server will have an interface with the existing signal control system to send and receive traffic data effectively for signal control. With this dynamic information, the signal control system will be able to implement signal control that is best suited to the traffic situation. With travel speed information by road segment or queue length data, traffic signal control can be optimized for real time traffic flows. In order to develop this type of integrated traffic control system, traffic signals should be connected to the traffic control center and signal phasing should be controlled at the center.

3) Bus Location System and Control Center

a) Concept of Bus Location System and Control Center

In order to improve the operational efficiency of BRT system and strengthen the function of the control center, an effective bus location system will be introduced.

Mounted with GPS equipment, the location information will be transmitted to the base station every few minutes. This data will be utilized by the Bus Location System to the calculate estimate time of arrival (ETA) in every bus stop and relay the information to the riding public/customers through the use of the personal computer (PC), mobile phone or projected on top of the monitors at the bus stations. This can help identify the real time location of all buses and any delays.

On the other hand, the BRT agency (including real operators) will be able to receive not only the same data, but also all operational data such as operation mileage, operational time, operational frequency, etc. through the system.

b) Assisting Operational Instruction

With this system, ground officers at the control center can receive real time location data, and they can instruct appropriate headways, time of refueling, resting, or returning to the depot.

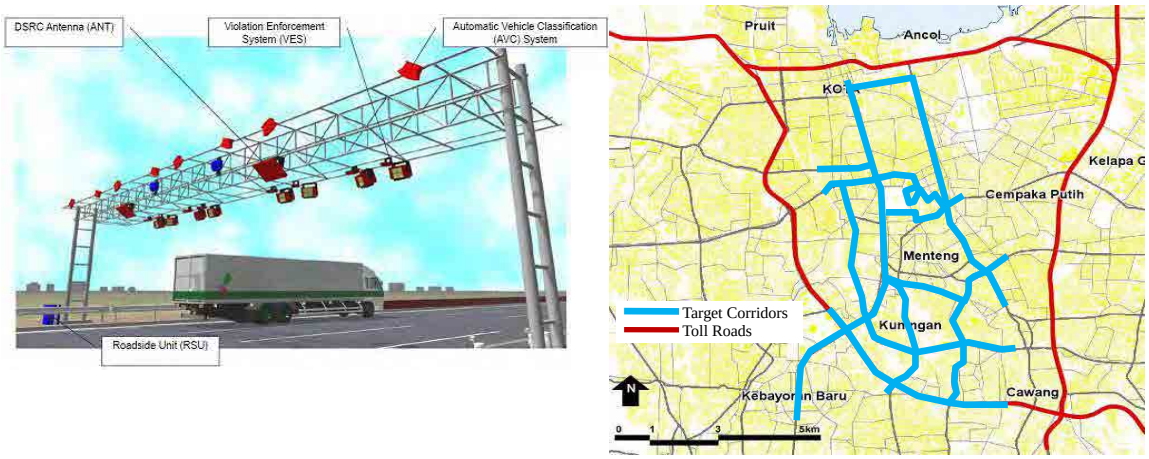
c) Management of Operation

BRT agency and real operators can capture and manage all operational data automatically, which in contrast are now being recorded manually. It is essential for operators to manage an accurate and real time operational data. With the application of the system ground officers and drivers do not have to write the operational mileage manually.

d) Information to Customers

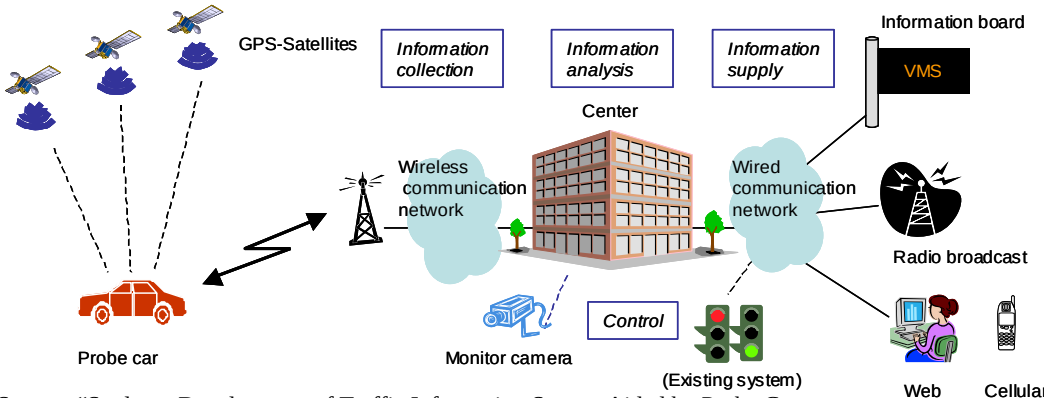
The system will be able to send real time location data of fleets via mobile phones or through internet using PC before they arrive at the bus station, which help relieve or ease the stress of customers. It is also necessary to set monitors in each shelter to show the real time location of upcoming vehicles and estimate its time of arrival. If traffic accidents or other events happened, the control center will input the events to the internet, mobile phone, or monitors at the station to be informed. It is also important that LED display should be utilized for their Destination/Next Stop indicators.

3. Project Images



Source: "The Study on Jakarta Road Pricing in the Republic of Indonesia", JETRO, 2008

Image of Electronic Road Pricing System



Source: "Study on Development of Traffic Information System Aided by Probe Car On Arterial Road Network in the Republic of Indonesia", JETRO, 2007

Image of Traffic Information System

4. Expected Benefits

1) Electronic Road Pricing (ERP)

Reduction in vehicle operating cost (VOC), which is caused by the decrease in vehicle kilometers traveled and alleviation of traffic congestion and reduction in travel time cost due to shorter travel time will be expected. According to "the Study on Jakarta Road Pricing in the Republic of Indonesia" by Japan External Trade Organization (JETRO) commissioned by the Japanese Ministry of Economy, Trade and Industry (METI) in 2008, the net present value (NPV) of the project with a 12% discount rate was calculated at about IDR 840 billion (JPY 10.1 billion) and the benefit-cost ratio (BCR) was 4.54. The economic internal rate of return (EIRR) was 28.7%.

2) Traffic Information System (TIS)

Reduction in VOC and travel time cost can be expected from the project. According to "The Study on Development of Traffic Information System Aided by Probe Car on Arterial Road Network in Jakarta in the Republic of Indonesia" by JETRO commissioned by METI in 2007, NPV was computed at IDR 76 billion, BCR was 3.59, and EIRR was at 43.2%.

3) Bus Location System and Control Center

Public transportation is an efficient mode of transportation. The implementation of the project will promote an increase in ridership of public transportation and will help alleviate traffic congestion in the region. While the reduction in vehicle operation cost as well as travel time cost can be the main benefits of the project, the project can also help reduce carbon dioxide, nitrogen oxide, sulfur oxide, and particulate matter smaller than 10 micrometers (PM10) emissions.

5. Project Cost and Funding Scheme

5.1 Project Cost

a) Electronic Road Pricing (ERP)

Phase	Components	Cost (IDR billion)	Notes
1	Products	240	Control center and road-side equipment
	Installation	30	
	On-board-unit registration terminal	10	
	Traffic information system	70	
	Total construction cost	350	
	Contingency	40	10%
	Value added tax	40	10%
	Technical assistance	40	Consultants for design and supervision
	Total project cost	470	
2	Products	420	Control center and roadside equipment
	Installation	70	
	Total construction cost	490	
	Contingency	60	10%
	Value added tax	60	10%
	Technical assistance	20	Consultants for design and supervision
	Total project cost	630	

Source: "The Study on Jakarta Road Pricing in the Republic of Indonesia", JETRO, 2008, updated by MPA Study Team

b) Traffic Information System (TIS) (excluding integration with traffic signals)

	Unit Price		Unit		Cost (Billion Rp)	Notes
Collection	11	IDR Million	10,000	Set	110	Probe car
Processing	55	IDR Million	1	Set	60	Data center
Provision	1.1	IDR Million	50	Set	60	Information board
Operation	18	IDR Million	1	Set	20	Assuming 7-year operation
Maintenance	26	IDR Million	1	Set	30	
				Total	280	Assumed IDR 1 = JPY 0.00908

Source: "Study on Development of Traffic Information System Aided by Probe Car on Arterial Road Network in Jakarta in the Republic of Indonesia", JETRO, 2007, updated by MPA Study Team

c) Bus Fleet Management System and Bus Location System

	Components	Cost (IDR billion)	Notes
1	Bus Fleet Management System	70	
2	Bus Location System	20	
	Total	90	

Source: "Project for the Study on JABODETABEK Public Transportation Policy Implementation Strategy in the Republic of Indonesia" (JAPTraPIS), JICA, 2012

5.2 Funding Scheme (PPP)

	Public	Private	Remarks
ERP	√	√	PPP scheme: DBO and BOT
ITS	√	√	Charges from user, advertisement, subsidy from the public sector, and investment from taxi company
Bus Fleet Management System /Bus Location System	√	√	PPP; TransJakarta or later TransJabodetabek as operator and local governments /JTA

Source: "The Study on Jakarta Road Pricing in the Republic of Indonesia", JETRO, 2008; "Study on Development of Traffic Information System Aided by Probe Car on Arterial Road Network in Jakarta in the Republic of Indonesia", JETRO, 2007; and "Project for the Study on JABODETABEK Public Transportation Policy Implementation Strategy in the Republic of Indonesia" (JAPTraPIS), JICA, 2012; Updated by MPA Study Team

a) Electronic Road Pricing (ERP)

According to the feasibility study by JETRO, although the FIRR of the ERP project was computed at 23.4%, far beyond the interest rate, the public sector should take the initiative for the project in consideration of public interest. Low interest long-term financing is available through a combination of buyer's credit by Japan Bank for International Cooperation (JBIC) and trade insurance by Nippon Export and Investment Insurance (NEXI) to help cover some of the system and On-Board Unit (OBU) cost of the road pricing project. Public-Private Partnership (PPP) schemes such as Design-Build-Operate (DBO) and Build-Operate-Transfer (BOT) can also be utilized.

b) Traffic Information System (TIS)

According to the feasibility study by JETRO, the project is financially feasible through the expected charges from users, advertisement, subsidy from the public sector, (roughly IDR 6 billion per year) and initial investment from taxi companies in exchange of the utilization of traffic information.

c) Bus Fleet Management System and Bus Location System

The current Managing Unit of TransJakarta Busway (*Unit Pengelola Transjakarta Busway*) is the transportation agency of DKI Jakarta Province, and it receives a subsidy from the agency. When the BRT is operated by TransJakarta or TransJabodetabek, the systems could be developed under PPP scheme.

6. Current Status and Implementation Schedule

6.1 Current Status

a) Electronic Road Pricing (ERP)

Japan International Cooperation Agency (JICA) conducted a pre-feasibility study for the transportation demand management including the ERP system as part of the Study on Integrated Transportation Master Plan for JABODETABEK (SITRAMP) in 2004. The ERP was described as a key policy of SITRAMP to alleviate traffic congestion in the region and create financial resource for other projects. Based on the study, JETRO studied the feasibility of the project in 2008. DKI Jakarta Province also conducted the preliminary design of the project simultaneously.

In 2010, the Vice President presented 20 action plans to address the issue on traffic congestion in JABODETABEK and ERP as described in the first row of the action plan. The action plan and the bi-monthly detailed plan are being monitored by the Presidential Working Unit for Development Monitoring and Control (UKP4). In response to the action plan, the ministry of transportation issued a government regulation under road traffic law (No. 22, 2009). However, revision of the regulation on retribution of local government followed by the local government regulation on ERP is required to be implemented.

b) Traffic Information System (TIS)

JETRO conducted the feasibility study for the project in 2007. In 2011, it was reported that DKI Jakarta Province plans to implement the intelligent transportation system (ITS) Project consisting of a Bus Tracking System (BTS), Area Traffic Control System (ATCS), and Traffic Information System (TIS) by 2011. In addition some organizations are providing traffic information at no charge through the use of websites.

c) Bus Fleet Management System and Bus Location System

Bus location system was installed in corridor 1 in 2010 as part of the pilot project of the JABODETABEK Urban Transportation Policy Integration Project supported by JICA.

6.2 Implementation Schedule

a) Electronic Road Pricing (ERP)

Stage	Target Date
(1) Basic and detail design	December, 2012
(2) Tendering	January - June, 2013
(3) Construction / system development	July, 2013 - June, 2014
(4) Public relations	2012 - 2014
(5) Distribution of on-board-unit (OBU)	2014
(6) Operational testing	June – December, 2014
(7) Operation of ERP	January, 2015

Source: "The Study on Jakarta Road Pricing in the Republic of Indonesia", JETRO, 2008, updated by MPA Study Team

b) Traffic Information System (TIS)

Stage	Target Date
(1) Basic and detail design	December 2012
(2) Tendering	January - June 2013
(3) Construction / system development	July 2013 - June 2014
(4) Operational testing	July - September 2014
(5) Operation of TIS	October 2014

Source: "Study on Development of Traffic Information System Aided by Probe Car on Arterial Road Network in Jakarta in the Republic of Indonesia", JETRO, 2007, updated by MPA Study Team

c) Bus Fleet Management System and Bus Location System

Stage	Target Date
(1) System Design	December 2012
(2) System Development	January 2013 - August 2013
(3) Operational Testing	September 2013 - December 2013
(4) Operation	January 2014

Source: "Project for the Study on JABODETABEK Public Transportation Policy Implementation Strategy in the Republic of Indonesia" (JAPTraPIS), JICA, 2012

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Revision of the Local Retribution Law and the Regional Regulation of DKI Jakarta Province on ERP;
- Establishment of JABODETABEK Transportation Authority (JTA);
- Formulation of ITS Master Plan since all the relevant agencies has to coordinate to develop an integrated system; and
- Issuance of the Local Government Regulation on ERP.

1. Project Title

A. BETTER URBAN ENVIRONMENT

A.3 Promotion of Urban Re-development

(1) Pilot Project of Urban Development/ Re-development

2. Project Description

2.1 Objective

The objective of the pilot project of urban redevelopment is to create a livable and comfortable urban environment through the regeneration of existing urban areas; This is to achieve a more functional urban center and revitalizing sub-center areas to contribute to the decongestion of the city center. A pilot project of urban redevelopment at the existing urban or suburban centers is to be implemented while comprehensively addressing the development strategies of MP3EI.

For JABODETABEK MPA to play the role as an engine for national industry and service provision, providing comfortable living environment without traffic congestion, flood, environmental pollution, etc. are crucial. The development strategies to provide better living environment in MP3EI cover the spreading of business activity outside of DKI Jakarta, development of a mass transportation system, development of interconnected mass transportation network pattern, and development of sewerage and drainage system.

2.2 Necessity of the Project

The project is needed to create a good and comfortable environment in the existing urban and suburban centers, specifically, in JABODETABEK MPA. It is highly needed to harmonize with the natural environment to secure the smooth flow of people, commodity, and information, as well as to provide safe and attractive living environment for all citizens and visitors including low-income citizens.

2.3 Project Features

Two component of the pilot project can be assumed based on the types of need.

(1) Component 1: Urban Re-development a

The project for this option is to make the city center of Jakarta Metropolis more comfortable and attractive through the provision of green spaces and better road network. Some bonus schemes for higher and more intensified land use could be allowed, if the intended development is deemed to contribute to the overall improvement of the urban environment. Moreover, the application of a smart community technology utilizing ICT etc. will also be required in the future for management of appropriate energy and environment. The project is also to provide affordable houses for people with low income and limited livelihood and to promote advanced land use and urban function.

1) Project Components

a) Creating green areas by utilizing spaces on rooftops and walls as well as available land acquired through relocation of existing urban facilities;
b) Provide public spaces such as roads and greens;
c) Construction of business , commercial functions and residential units;
d) Development of flood protection facilities such as underground retention ponds;
e) Construction of earthquake-resistant buildings for business, commerce, and

high-income residences; and

f) Installation of smart community to realize saving energy consumption of buildings and houses with ICT technology such as smart community.

2) Candidate Site

a) Areas where the existing urban facilities, including the ones for government institutions are to be relocated. (The sites are to be identified in the process of promoting the relocation project of the GOI.);
b) Areas where old markets, warehouses, and factories in DKI Jakarta are to be relocated such as Pasar Induk Cipinang (16ha). (The sites are to be identified in the process of promoting the relocation project of the DKI Jakarta.) ; and
c) Areas those are usually crowded with people such as stations and its surrounding areas.

(2) Component 2: Urban Development (Maja)

The project for this option is to provide a safe and attractive living environment for all citizens and visitors including low-income citizens. There is a large and latent demand for affordable houses in the Jakarta Metropolis. Residential development in the suburb of Jakarta Metropolis such as Maja, with connectivity to the city center, will provide adequate affordable housing units for relatively low-income people.

1) Project Components

a) Development of affordable housing units for low-income citizens;
b) Development of housing estates for middle and high-income citizens;
c) Construction of multipurpose complex including commerce, business, education, health, parks, etc. to enhance attractiveness of urban areas; and
d) Construction of flood-safe and earthquake-proof buildings2).

2) Candidate Sites

a) Maja (200 ha for short term, 1,648.1 ha for Master plan) in Kab. Lebak, Kab. Tangerang, and Kab. Bogor

3. Project Images


Source: MPA Study Team

Image of creating green open spaces for business and commercial areas and developing affordable houses (Component 1)

Source: Ministry of Public Housing

Image of the development of housing units in the multi-purpose complex at suburban areas (Component 2)

4. Expected Benefits

The expected benefits are as follows:

- All citizens including low-income citizens can have safe shelters where flood is prevented;
- People, commodity, and information can move smoothly in development areas without stagnation due to traffic congestion;
- Parks and plazas can be the venue of revitalizing community activities in terms of culture, sports, education, etc.;
- Commercial and entertainment facilities can attract many people;
- Carbon dioxide can be reduced through the construction of smart communities and providing green open spaces;
- The pressure of the increasing population and activities in DKI Jakarta can be reduced and it can lead to smoother mobility of traffic and logistics; and
- Employment opportunities are to be increased both during and after the construction.

5. Project Cost and Funding Scheme

5.1 Project Cost

The preliminary cost estimate by option is shown below. Total cost of Component 1 and Component 2 is approximately 2,100 IDR billion.

Preliminary Cost Estimate for Urban Re-developmenta(Component 1)

Item	Unit Price (IDR million)	Unit	Cost (IDR million)	Remarks
1) Master Plan Study	4,500	1 Ls	4,500	
2) F/S and BD	20,000	1 Ls	20,000	
3)Detailed Design	20,000	1 Ls	20,000	
4)Relocation of Existing building	400	16 ha	6,400	
5)Underground Reservoir	264,000	1 Ls	264,000	
6)Land Reclamation	5,000	16 ha	80,000	
7)Roads	2.3	24,000 m^2	55,200	
8)Water Supply	8	3,200 m	25,600	
9)Drainage	8	3,200 m	25,600	
10)Power Supply	108,000	1 Ls	108,000	
11)Buildings for business and commerce	10	32.000 m^2	320,000	
12)Residence for high-income level	14	3,000 m^2	42,000	10% of residence
13)Residence for middle-income level	10	4,000 m^2	40,000	30% of residence
14)Residence for low-income level	5	5,000 m^2	25,000	60% of residence
15) Pedestrian Deck	13	8,000 m^2	104,000	
16) Smart Community Infrastructure	200,000	1 Ls	200,000	
Total			1,340,300	

Note: In cases where it development of 16ha, excluded of land acquisition.
Source: MPA Study Team

Preliminary Cost Estimate for Urban Development (Maja) (Component 2)

Item	Cost (1648.1ha) (IDR million)	Cost (Phase-1:200ha) (IDR million)	Remarks
1) Planning (F/S, Masterplan, DED)	3,500	500	
2) Infrastructure Development (Road, drainage, compaction, and land clearing)	414,000	50,000	
3) Infrastructure Development (Water Supply)	3,563,000	432,000	
4) Administration for Legal Status of Land	95,000	12,000	
5) Land Acquisition	1,739,000	211,000	
6) Operational (for 6 years)	45,000	5,500	
Total	**5,860,0006**	**711,000**	

Source: Executive Summary of the "Penyusunan Development Plan Kasiba/Lisiba Kab. Lebak", Kemenpera

5. 2 Funding Scheme

The PPP scheme is to be used for the implementation, operation, and maintenance of the project. The demarcation of funds between public and private are shown in the following table:

Item	**Source of Fund**		**Target**	
	Public	Private	Option	
			1	2
Land Acquisition	√			√
Relocation of existing urban functions			√	√
Roads, water supply, and sewerage	√		√	√
Disaster prevention measures such as underground reservoir	√		√	√
Power supply	√		√	√
Buildings for business and commerce		√	√	√
Residences	√ for low-income	√	√	√
Schools	√		√	√
Parks	√		√	√

Source: MPA Study Team

5. 3 PPP Scheme

It is assumed that the PPP scheme is applied for this project. In this scheme, the public sector shall acquire land for building basic infrastructures and public facilities such as schools, and park, etc. The private sector shall build, own, and operate the buildings for business and commerce, and residences. The details of the demarcations shall be elaborated in the following study.

6. Current Status and Implementation Schedule

6.1 Current Status

The project concept including the contents, development scale, site, etc. is being discussed among concerned government agencies in Indonesia. The discussion also covers the evaluation of the necessity and selection of priority among the two options of the pilot project mentioned above.

As far as the development of Maja for Option 2, the Ministry of Public Housing formulated a master plan. A total of 17 private developers have acquired 3,565 ha of land. Although the implementation of the plan has been stopped because of the financial crisis in 1997, the Indonesian government is currently restarting its development.

6.2 Implementation Schedule

The implementation of the project for each option follows more or less the schedule below.

Stage	Target Date
(1) Master Plan	2012 - 2013
(2) Feasibility Study	2013 - 2014
(3) Land acquisition including relocating of the existing urban functions	2014 - 2015
(4) Selection of Concessionaire	2015
(5) Engineering Design	2015 - 2016
(6) Construction	2017 - 2020

Source: MPA Study Team

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

Urban Re-development

- Listing on PPP Book by GOI;
- Formulation of Master Plan;
- Land Acquisition; and
- Establishment of Funding Scheme with GOI's Support

Urban Development (Maja)

- Elaboration of Funding Scheme by MOPH;
- Establishment of Development Coordination Committee among; and
- MOPH and Other Concerned Ministries

1. Project Title

A. BETTER URBAN ENVIRONMENT

A.4 Improvement of Water Supply and Sewage Systems

(2) Rehabilitation of Water Distribution Facilities in DKI Jakarta, Bekasi and Karawang, with the integration of DKI Jakarta – Bekasi – Karawang Water Supply (Jatiluhur)

2. Project Description

2.1 Objective

This project aims to construct the facilities for distributing the treated water purchased from "DKI Jakarta – Bekasi – Karawang Water Supply (Jatiluhur)" Project (the Jatiluhur Project) to the customers of each PDAM.

2.2 Necessity of the Project

The construction work of the Jatiluhur Project is planned to commence in 2013. The municipal water supply corporations (PDAMs) in DKI Jakarta, Kabupaten/KotaBekasi, and Kabupaten Karawang will be supplied with treated bulk water from the Jatiluhur Project. Jatiluhur Project delivers the treated bulk water only to the receiving point of each PDAM. Thus, each PDAM is required to construct the facilities for distributing the treated water to the final customers. The facilities to be constructed are: 1) Transmission pumps, 2) Transmission pipeline, 3) Distribution Reservoir, 4) Distribution pumps, and 5) Distribution pipeline.

However, each PDAM faces financial difficulty to prepare a large amount of money for initial capital expenditure. Thus, it is proposed that the investment on some parts of the above facilities, i.e. items 1), 2) and 3), considered to be financed by the private sectors.

2.3 Project Features

The capacity of the facilities shall be in accordance with the planned additional bulk water received from Jatiluhur Project (Phase-1)

DKI Jakarta (Receiving bulk water: 4,000 l/s)

Transmission pump	1,000 l/s x 6 units including stand-by
Transmission pipeline:	Diameter 800mm, Length = 80 km
Distribution reservoir:	15,000 m^3 x 4 units

Kota Bekasi (Receiving bulk water: 250 l/s)

Transmission pump	125 l/s x 3 including stand-by
Transmission pipeline	Diameter 450mm, Length = 40 km
Distribution reservoir:	1,200 m^3 x 3 units

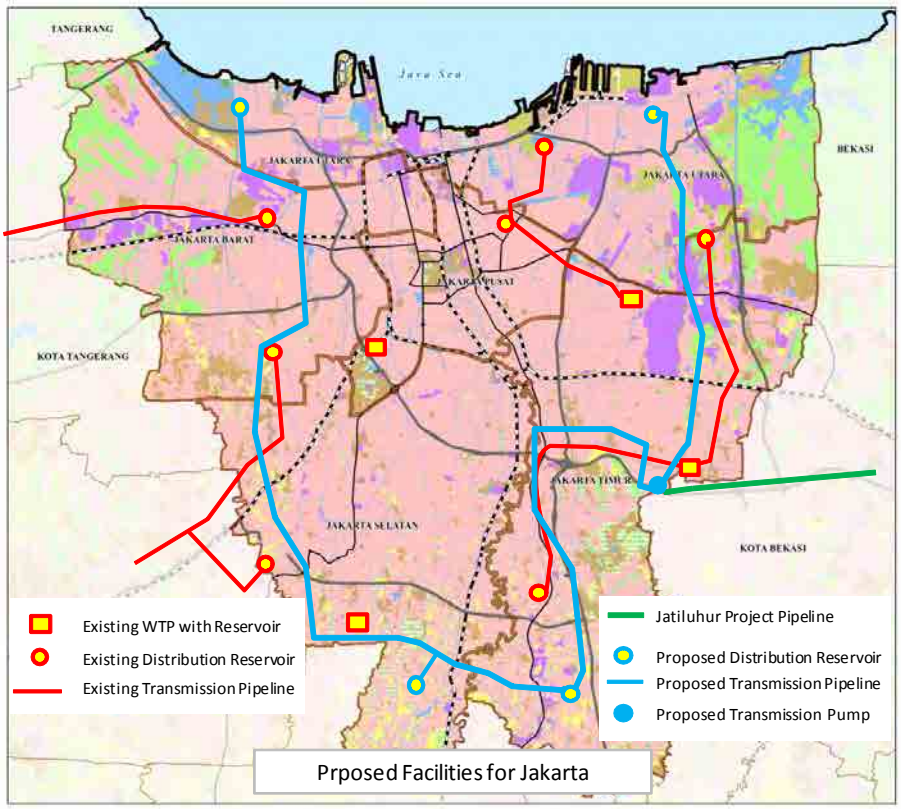
Kabupaten Bekasi (Kec. Tambun Selatan and Tambun Utara) (Receiving bulk water250 l/s)

Transmission pump	125 l/s x 3 including stand-by
Transmission pipeline	Diameter 450mm, Length = 10 km
Distribution reservoir:	1,200 m^3 x 3 units

Kabupaten Karawang (Kec. Karawang Timur, Karawang Barat, Telukjambe Timur, Telukjambe Barat, and Ciampel) (Receiving bulk water: 500 l/s)

Transmission pump	150 l/s x 5 including stand-by
Transmission pipeline	Diameter 450mm, Length = 30 km
Distribution reservoir:	1,500 m^3 x 5 units

3. Project Images



Transmission Pipeline

Pump Facility

Distribution Reservoir

Source: MPA Study Team

4. Expected Benefits

The project will enable each PDAM to distribute bulk water purchased from the Jatiluhur Project to the end-users or customers.

The project will improve the living conditions of the people by providing a reliable supply of safe drinking water.

The project will promote the government policy on reduction of groundwater exploitation by providing a reliable supply of water to business/industrial companies.

5. Project Cost and Funding Scheme

5.1 Project Cost

(JPY million)

Construction Cost	**9,118**
DKI Jakarta	6,740
Kota. Bekasi	1,074
Kabupaten Bekasi	354
Kabupate Karawang	950
Engineering Cost	**455**
Total	**9,573**

Source: MPA Study Team

5.2 Funding Scheme

The project is assumed to be initially funded by the private sector, most likely through SPC (Special Purpose Company) for Jatiluhur Project. The SPC will recover its investment cost through the unitary payments from public authority.

5. 3 PPP Scheme

It is assumed that PPP (BTO) scheme of the PPP will be applied for this project. In this scheme, the private sector establishes a SPC. The SPC will build, transfer, and operate the project facility. The SPC will be paid by installments for the facility of each municipality.

6. Current Status and Implementation Schedule

6.1 Current Status

This project is to be implemented in parallel with the Jatiluhur Project. Thus, project preparation should be conducted at the same time as the Jatiluhur Project.

In order to ensure the viability of the Jatiluhur Project, investment action plans for the distribution facility should commence as early as possible, by both PDAMs and GOI.

6.2 Implementation Schedule

Stage	Target Date
(1) Commencement of SPC contract (together with Jatiluhur Project)	April 2013
(2) Award of SPC contract	End of the second quarter of 2013
(3) Commencement of Construction (First Phase)	First quarter of 2014
(4) Commencement of Operation (First Phase)	First quarter of 2017

Source: MPA Study Team

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Review of the Business Plan of Each PDAMs in terms of Service Expansion.

1. Project Title

A. BETTER URBAN ENVIRONMENT

A.4 Improvement of Water Supply and Sewerage Systems

(3) Development of Sewerage System in DKI Jakarta

2. Project Description

2.1 Objectives

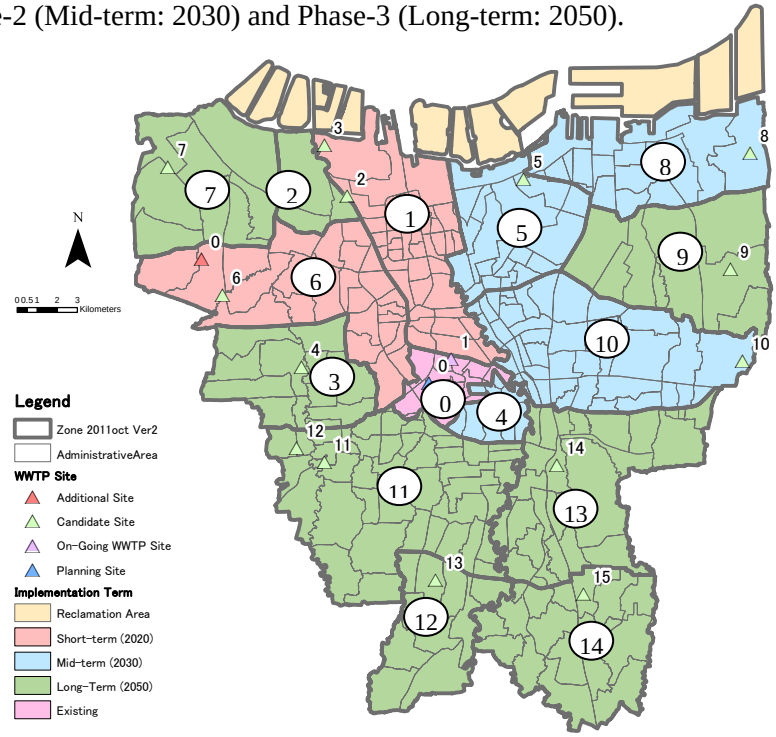
This project aims to improve public sanitation and water environment conditions in DKI Jakarta by providing sewerage facilities. This is consistent with the objectives of the "Better Urban Environment" in "Visions for JABODETABEK in 2030" Project.

2.2 Necessity of the Project

Currently, only 2% of the population use the sewerage system (off-site treatment), 20% are using Individual Treatment Plant (ITP), 68 % are using septic tanks, and remaining 10% discharges their wastewater directly to the river. Only 13% of Suspended Solids are removed from the wastewater by means of off-site and on-site treatment, while 72% are discharged directly to the rivers in Jakarta and 15% decomposed naturally. In order to improve public sanitation and water environment conditions, the provision of off-site wastewater treatment system is required, especially in highly populated areas.

2.3 Project Features

In the Sewerage Master Plan formulated in collaboration with Cipta Karya, DKI Jakarta, and JICA, the city area is to be divided into 14 sewerage zones as shown below. The provision of the system will be undertaken in three phases: Phase-1 (Short term: 2020), Phase-2 (Mid-term: 2030) and Phase-3 (Long-term: 2050).



Source: The Project for Capacity Development of Wastewater Sector through Reviewing the Wastewater Management Master Plan in DKI Jakarta, 2011

The proposed priority project corresponds to Phase-1 (Short-term) of the Master Plan,

namely, the construction of sewerage facilities in Zones 1and 6.
The outline of each zone is as follows:

Zone-1

Coverage area: Kecamatan: Gambir, Sawah Besar, Senen, Menteng, Taman Abang, Matraman, Grogol Petamburan, Taman Sari, Tambora, Setia Budi and Penjaringan

Planning condition:

Design served population:	989,000
Design wastewater flow:	198,000 m^3/day
Pollutant load(SS):	30 ton/day
Pollutant concentration (BOD):	200 mg/l

Facility outline:

Sewer pipeline:	Diameter 200 – 2400mm, Total length = 758 km
House connection	102 km
Capacity of waste water treatment plant:	264,000 m^3/day

Zone -6

Coverage area: Kecamatan: Cengkareng, Grogol Petamburan, Kebon Jeruk, Kalideres, Palmerah, Kembangan, Tambora, Kebayoran Lama and Penjaringan

Planning condition:

Design served population:	1,172,000
Design wastewater flow:	235,000 m^3/day
Pollutant load(SS):	35 ton/day
Pollutant concentration (BOD):	200 mg/l

Facility outline:

Sewer pipeline:	Diameter 200 – 2,400 mm, Total length= 1,008 km
House connection:	131 km
Capacity of waste water treatment plant:	313,000 m^3/day

Sludge Treatment Facilities

Improvement of Pulo Gebang sludge treatment plant: 450m^3/day
Construction of new sludge treatment plant: 600m^3/day

Zone 1 and 6 were selected as the priority zones based on the following:

1) Population density is high;
2) Wastewater treatment plant (WWTP) site shall be secured inside the sewerage zone;
3) Sewer trunk lines are shorter and river crossings should be avoided as much as possible;
4) There are many commercial establishments who can afford to pay wastewater charge after the proposed project is implemented;
5) There are existing sewerage systems;
6) Socio-economic conditions are not good (water borne disease ratio and pollutant load are high);
7) River water quality is not good (BOD is high) ; and
8) Groundwater quality is not good (presence of E-coli is high).

3. Project Images


Source: MPA Study Team

Construction of Sewer Pipeline


Conventional Activated Sludge Method　　Membrane Separation Bioreactor

Source: MPA Study Team

Waste Water Treatment Plant

4. Expected Benefits

- Reduction of treatment cost compared with on-site system;
- Improvement of public hygiene;
- Improvement of urban and living environment;
- Increase in land value;
- Promotion of tourism;
- Promotion of related industries (construction, plant operation, etc.);
- Promotion of public sanitation and environmental education; and
- Capacity development of the Sewerage Department of DKI Jakarta.

5. Project Cost and Funding Scheme

5.1 Project Cost

Zone-1 (IDR billion)

Construction	**6,600**
Collection Sewer line (Foreign Assistance and Governmen fund)	5,100
Wastewater treatment plant (Private funds)	1,500
Engineering (Private fund)	**300**
Total	**6,900**

Source: MPA Study Team

Zone-6 (IDR billion)

Construction	**7,000**
Collection Sewer line (Foreign Assistance and Governmen fund)	4,800
Wastewater treatment plant (Foreign Assistance)	2,200
Engineering (Foreign Assistance)	**400**
Total	**7,400**

Source: MPA Study Team

5.2 Funding Scheme

Zone-1

It is envisaged that the project will be implemented through PPP scheme. Sewer pipelines will be funded by Foreign Assistance and the Indonesian government, while the treatment plant will be funded by private sector. The house connection works will be funded by the Indonesian government (DKI Jakarta)

Zone-6

It is envisaged that the project will be implemented under a conventional fund scheme. Majority of the facilities for construction will be funded by Foreign Assistance, while the house connection works will be funded by the Indonesian government (DKI Jakarta).

	Foreign Assistance	Government	Private	Remark
Zone-1 Construction				
- Collection sewer line	√	√		
- Wastewater treatment plant			√	PPP scheme
Engineering			√	PPP scheme
Zone-6 Construction				
- Collection sewer line	√	√		
- Wastewater treatment plant	√			
Engineering	√			

Source: MPA Study Team

5. 3 PPP Scheme

It is assumed that the PPP (BTO) scheme is applied for Zone-1 project. In this scheme, the private sector establishes an SPC. The SPC will build, transfer, and operate the project wastewater treatment plant. The SPC will be paid by installments for the facility of each municipality.

6. Current Status and Implementation Schedule

6.1 Current Status

The Sewerage Master Plan Study for DKI Jakarta formulated in collaboration with Cipta Karya, DKI Jakarta, and JICA. After the master plan is completed, project preparatory works will commence.

6.2 Implementation Schedule

(1) Zone 1 (PPP scheme)

Stage	Target Date
Feasibility study and project preparation	January 2011- March 2013
Selection of SPC	April 2013 - March 2014
Procurement of EPC	April 2014 – March 2019
Operation	April 2019 -

Source: MPA Study Team

(2) Zone 6 (Foreign Assistance scheme)

Stage	Target Date
Project preparation study	April 2012 - November 2012
JICA appraisal	December 2012 - March 2013
Loan agreement	April 2013
Selection of Consultant	April 2013 - February 2014
Detailed Design	March 2014 - August 2015
Selection of Contractor	September 2015 - December 2016
Construction	February 2017 - February 2020
Operation	March 2020 -

Source: MPA Study Team

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Listing on Blue Book and Financial Request;
- Finalization of F/S and Project Scope;
- Confirmation of the Usable Land Area for Waste Water Treatment Plant; and
- Formulation of Waste Water Tariff Structure to make the Project Feasible.

ZONE-1

- Determination of Financial Source.

1. Project Title

A. BETTER URBAN ENVIRONMENT

A.4 Improvement of Water Supply and Sewerage System

(4) Development of Water Supply Systems for Large-scale Infrastructure Development

2. Project Description

2.1 Objective

This project aims to supply treated bulk water to DKI Jakarta, Kabupaten/Kota Bekasi and Kabupaten Karawang as well as to the new airport and new port that is to be constructed in Kabupaten Karawang.

2.2 Necessity of the Project

In line with the development of MPA, the water demand is projected to increase steadily. The implementation of the bulk water supply project known as the first phase of the "DKI Jakarta – Bekasi – Karawang Water Supply (Jatiluhur)" Project (the Jatiluhur Project) has been decided to be a "Fast-Track Project" of MPA. Construction work is expected to commence in 2013 and is expected to be completed in 2015. By this project, an additional 5,000 lit/sec of treated water in total is to be supplied to DKI Jakarta, Kabupaten/Kota Bekasi and Kabupaten Karawang. However, this amount of water is not sufficient to accommodate the expected water demand in 2020. Therefore, it is necessary to implement the second phase of the Jatiluhur Project.

The water demand and supply plan of each PDAM up to 2020 is described in the Master Plan Towards the Year 2020.

2.3 Outline of the Project:

The project is the second phase of the Jatiluhur Project. The outline of the project is almost identical to the first phase. A water treatment plant will be constructed downstream of Jatiluhur Dam and will supply treated bulk water to the receiving points of municipal water supply corporations (PDAMs) as well as to the new international port in Cilamaya and new international airport in Karawang.

The project is planned to be implemented by PPP scheme in the same way as the first phase (Fast-Track Project).

2.4 Project Features

Planned water supply :		5,000 l/s
of which, input to Karawang		500 l/s
		(200 l/s for new port at Cilamaya)
		(200 l/s for new airport)
		(100 l/s for newly developed area)
	to Bekasi	500 l/s
	to DKI Jakarta	4,000 l/s
Outline of the Facility:		
Water Treatment Plant:		5,000 l/s
Transmission Pipeline :		Diameter 1,800 mm x 58 km long
		Diameter 450 mm x 50 km long (to new port)
		Diameter 450 mm x 20 km long (to new airport)

The project facility will be constructed just besides the first stage facilities.

3. Project Images

Water Treatment Plant

Control Room of the Water Treatment Plant

Transmission Pipeline

Pipe Installation

Transmission Pump

Butterfly Valve

Source: MPA Study Team

4. Expected Benefits

- Low land acquisition cost for WTP compared with the urban area;
- Lower risk of degradation of raw water quality because the intake is located upstream of the West Tarum Canal;
- Realization of a wide range of water allocation system in JABODETABEK area;
- Scale merit of the production cost; and
- Lower cost compared with the case on the provision of individual system by each municipality.

5. Project Cost and Fund Scheme

5.1 Project Cost

Capital Expenditure (USD million)

Description	Cost
Construction Cost	
1. Preparatory Works	68
2. Intake and Raw Water Transmission Pipeline	24
3. Water Treatment Plant	98
4. Transmission pipeline (Jatiluhur to Buaran) and Receiving Reservoirs	210
5. Transmission pipeline to the new port and new airport	10
Sub-total	410
Engineering Cost (Detail design and construction management)	41
Physical Contingency	51
Land acquisition and compensation	Not included
Taxes	Not included
Total	502

Source: MPA Study Team

Operating Expenditure (USD million/year)

Description	Cost
Personnel, Office Running, Electrical, Chemical and Equipment Maintenance Cost	
1. Intake and Raw Water Transmission Pipeline	4.8
2. Water Treatment Plant	6.2
3. Transmission pipeline	10.6
Land rental cost	Not included
Raw water tariff	Not included
Plant replacement	Not included
Total	21.6

Source: MPA Study Team

5.2 Fund Scheme

It is assumed that some parts of the project facilities are financed and constructed by a private entity. Public sectors will finance and construct the rest of the facilities. However, details of demarcation between public and private have not been made clear.

5. 3 PPP Scheme

It is assumed that the PPP (BTO) scheme is applied for this project. In this scheme, the private sector establishes an SPC. The SPC will build, transfer, and operate some parts of the project facilities. A bulk supply contract will be concluded between the SPC and GCA (Government Contracting Agency) established by the GOI. It is also assumed that a government subsidy and guarantee will be provided to the SPC by the GOI in accordance with the presidential regulations on PPP.

6. Current Status and Implementation Schedule

6.1 Current Status

Technical feasibility study for the first phase of Jatiluhur project was conducted by the Ministry of Public Works under Indonesia Infrastructure Initiative (INDII) program funded by AusAID.

Further study especially for the second phase is needed.

6.2 Implementation Schedule

Stage	Target Date
(1) Feasibility study	To be completed by the end of 2014
(2) SPC procurement	To be completed by the end of 2015
(3) Commencement of Construction	First quarter of 2017
(4) Commencement of Operation	First quarter of 2020

Source: MPA Study Team

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Study on Water Demand and Supply Plan after the Completion of Jatiluhur Project (Phase I)

1. Project Title

A.BETTER URBAN ENVIRONMENT

A.5 Solid Waste Treatment

(2) Development of New Landfill Site at Tangerang

2. Project Description

2.1 Objective

This project aims to prepare solid waste treatment and disposal facility for the western area of JABODETABEK.

2.2 Necessity of the Project

Currently, all solid wastes generated in DKI Jakarta are disposed in the Bantar Gebang Landfill Site in Bekasi City, located in the eastern area near DKI Jakarta. In addition, the capacity of the landfill site for DKI Jakarta will not be enough in the future. There are no other areas for a landfill site in DKI Jakarta. If transportation efficiency is a major planning consideration, it is recommended that the landfill site is constructed in the western area near DKI Jakarta.

On the other hand, Tangerang Regency only has one open dumping site located at Jatiwaringin. The Solid Waste Management Law No.18/2008 stipulates that open dumping sites must be closed in 2013. In this context, the Tangerang Regency is required to have a sanitary landfill site in compliance with the requirements of the law. This site will be utilized as the regional landfill site for the western part of DKI Jakarta, Tangerang City, and South Tangerang City.

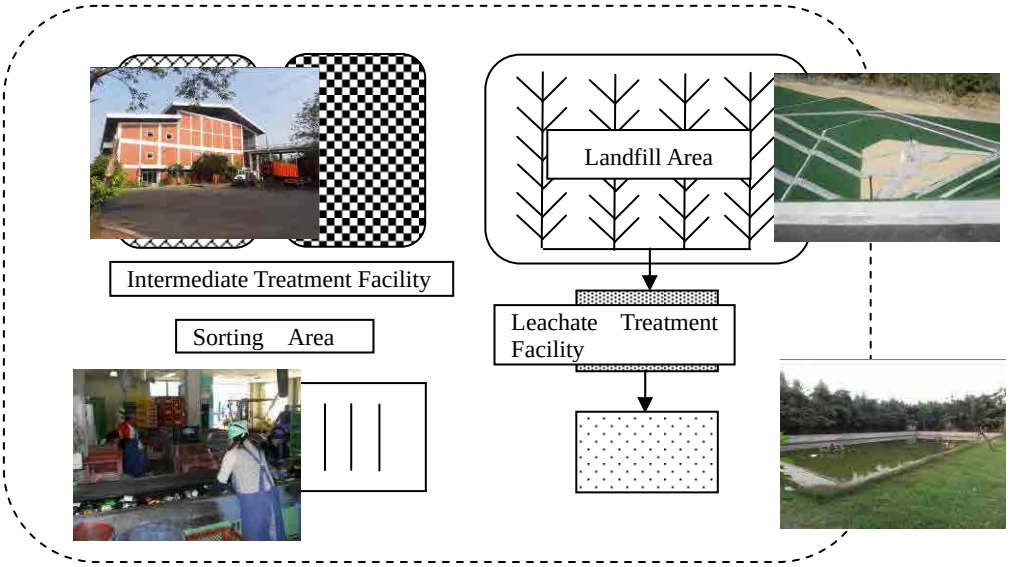
2.3 Project Features

The project has features for the development of integrated solid waste management system including Sanitary Landfill Site (SLF) and Intermediate Treatment Facility (ITF). The SLF includes landfill area, surface water collection system, leachate collection and treatment facility, landfill gas collection facility, weighing bridge, and administrative building, etc. As for the ITF, Mechanical Biological Treatment (MBT), such as composting facility or methane fermentation facility, and Waste-to- Energy (WTF) for residual which has high lower calorific value, will be developed.

Source: MPA Study Team

3. Project Images

Overall Image of the Solid Waste Treatment and Disposal Facility (TPST) Tangerang



Source: MPA Study Team

4. Expected Benefits

Expected benefits for the development of the Solid Waste Treatment and Disposal Facility in the Tangerang area are as follow.

- Solid waste generated in the western area in DKI Jakarta will be disposed properly; and
- Solid waste generated in the other areas such as Tangerang Regency, Tangerang City, and South Tangerang City will be disposed properly.

5. Project Cost and Funding Scheme

5.1 Project Cost

	Unit Price	Unit	Cost (USD million)	Remarks
Pre-treatment facility	USD 0.017 million/ton	1,500 ton/day	25.0	MBT for organic waste and waste to energy for combustible residual
Landfill facility	USD 0.238 million/ha	100 ha	23.8	Land Reclamation and facilities for sanitary landfill
Leachate treatment facility	USD 6.2 million	1 set	6.2	Leachate treatment facility
Land acquisition and others	USD 8.6 million	1 set	8.6	Land cost and other associated facilities and equipments, etc.
Total Investment Cost	-	-	63.6	
Operation and maintenance	-	-	8.7	Management cost, not include depreciation

Source: METI Study

5.2 Funding Scheme

Funding scheme for Build-Operate-Transfer (BOT) will be applied for this project. Funds from DKI and/or Foreign Assistance may be subsidized, if necessary. The details of the funding scheme are also being studied in the feasibility study by METI, which has not been determined yet.

5. 3 PPP Scheme

It is assumed that the PPP (BOT) scheme is applied for this project. In this scheme, the private sector establishes an SPC and the SPC will build and operate the project facilities. A BOT concession agreement will be concluded between the SPC and DKI. SPC will recover its investment from the tipping fee from DKI and revenues from selling Refuse Derived Fuel (RDF) and recyclables. Public support from DKI and/or Foreign Assistance sources might be provided for the project.

6. Current Status and Implementation Schedule

6.1 Current Status

The feasibility study has been done by the consultant team dispatched by METI. The site of the project was determined through discussion by Tangerang Regency and the study team. The final report of the study was submitted on March 2012.

6.2 Implementation Schedule

Stage	Target Date
(1) Feasibility Study	Completion (March, 2012)
(2) Implementation Plan	Middle of 2012- March, 2013
(3) Detailed Design and EIA	Middle of 2013 - Middle of 2014
(4) Commencement of Construction	Beginning of 2015
(5) Commencement of Operation	Beginning of 2017

Source: MPA Study Team based on METI Study

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Land Acquisition of Landfill Area;
- Approval of the M/P of DKI Jakarta toward the Utilization of the New Landfill Site by DKI Jakarta;
- Establishment of Funding Scheme;
- Approval of EIA; and
- Revise of MOU between Tangerang Regency and DKI Jakarta.

1. Project Title

A.BETTER URBAN ENVIRONMENT

A.6 Flood Management

(2) Development of Urban Drainage System in DKI Jakarta

2. Project Description

2.1 Objectives

The project aims to mitigate and control the frequent occurrence of flood inundation in the business and commercial areas of DKI Jakarta due to urban excess water, with target protection level of 10 to 25 years return period.

Flood management infrastructure secures the value-chain foundation for industrial production, distribution networks, commercial and marketing basis, social welfare and safety of the people. The project is indispensable in achieving the vision for the acceleration and expansion of Indonesia's economic development by strengthening overall its sustainable global competitiveness towards an innovation-driven economy.

2.2 Necessity of the Project

The urban flood inundation damages are alarmingly growing due to the increase in surface runoff. Effects of urban flood include damages inside business and commercial areas, land subsidence, rise of spring sea tide, accumulation of sediments and solid wastes inside the drainage channels, insufficient capacity of drainage pumping and gate facilities, etc. The flood inundation problems in urban areas will not be totally controlled with the provision of on-going and planned river improvements and floodway works on the five rivers, the rehabilitation project of the existing drainage systems, and the high tide protection wall planned for North Jakarta.

2.3 Project Features

The project is composed of the following components:

1) Key new polders and retention ponds selected from the lists included in the Spatial Plan 2011;
2) New trunk drainage systems (open-channel) which discharge the urban excess water in West Jakarta to the Java Sea;
3) Replacement of the pumps in the Melati Pump Station (12.88 m^3);
4) Local retention ponds, with pumps in the isolated business and commercial areas, which are not able to discharge excess water to existing flood and drainage canals; and,
5) Integrated management and operation system of the existing and new pumps and gates, which is established under PPP.

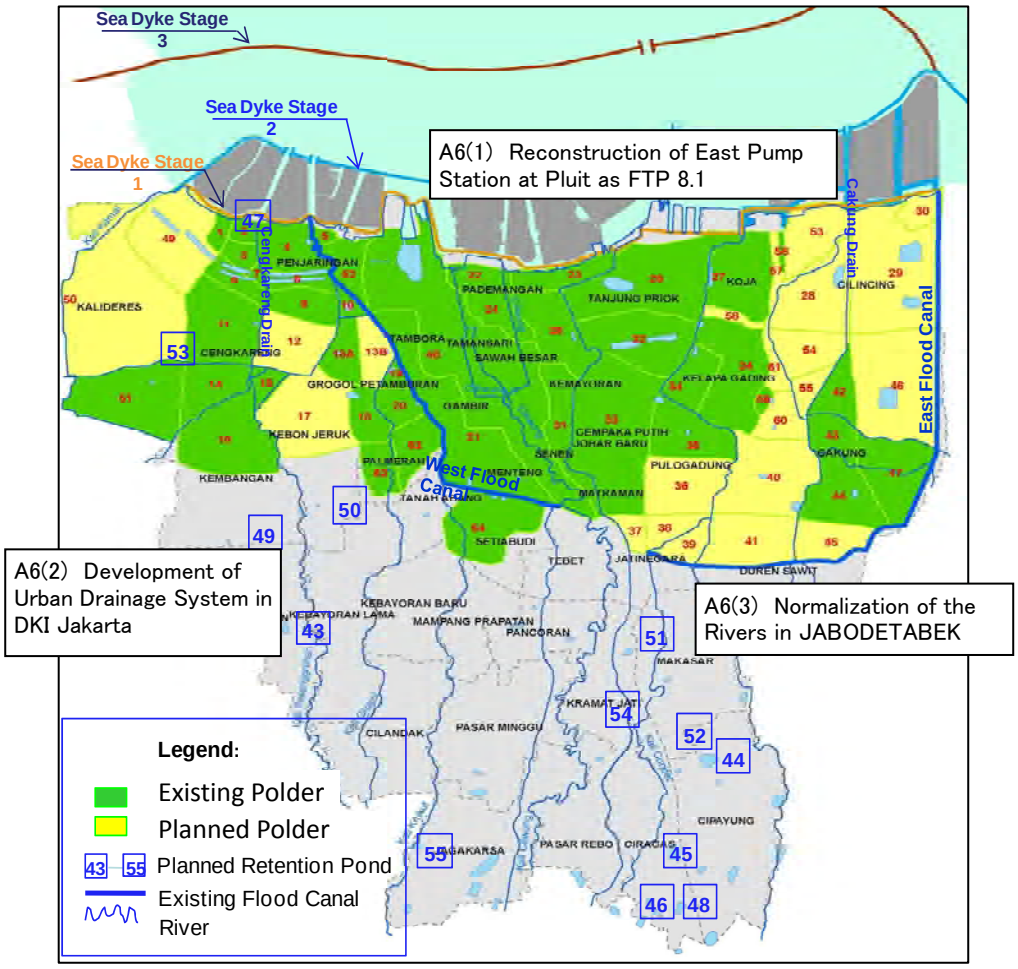
Each polder system is composed of micro-drainage, sub-micro drainage, macro-drainage, retention ponds (waduk), dikes and pump stations depending on site conditions. The new trunk drainage systems are alternatives to the multi-purpose deep tunnel planned below the West Flood Canal (WFC) and the Ciliwung River. The trunk drainage systems are planned as open channels, but the tunnel system type might serve as an alternative, if land acquisition and resettlement is not attainable. One trunk drainage system aims to drain the excess water to the Java Sea, from the areas in Manggarai I Gate to Pasar Ikan Gate, by expansion of the existing Cideng River and other connected channels. The other trunk drainage system aims to drain the excess water to Java Sea, from the areas in Manggarai II Gate to Marina Gate, by expansion of the existing Ciliwung River and other connected

channels. This plan assumes that the high tide protection wall scheduled under Phase 2 will be commissioned in 2020 as planned in the Spatial Plan of DKI.

The capacity of the WFC to contain the design flood is attained if the existing bridges which confine the flood flow in the WFC are heightened and necessary freeboard is kept. The excess water stored in the isolated retention ponds is discharged by pumps to the WFC or to the new trunk drainage systems.

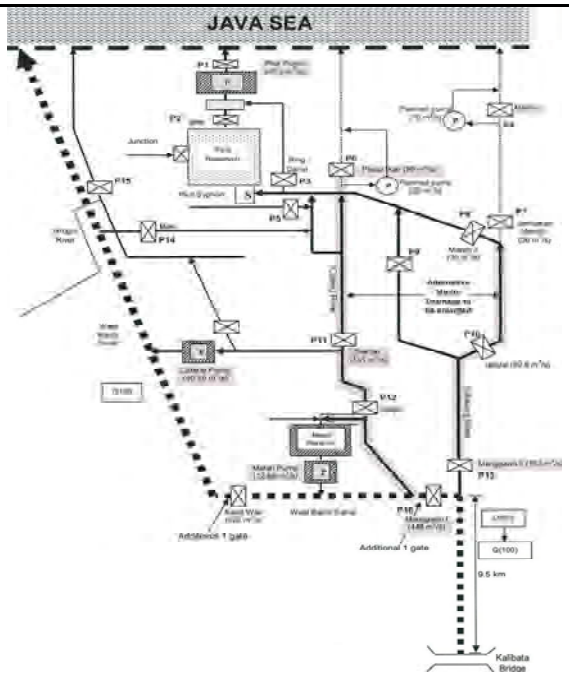
The integrated management and operations system aims to achieve systematic and optimum operation and maintenance of the existing and new drainage pumps and gates as a group in the whole service area of the WFC, the downstream Ciliwung River and the EFC, which are operated on a station-to-station basis with their own respective information. This system is equipped with regional real-time information on meteorology, hydrology, and river flow characteristics. It also aims to minimize the life cycle cost of the pumps and gates shared with the potential risks of operation and maintenance of the facilities among the public and private sectors.

3. Project Images



Source: MPA Study Team based on DKI Jakarta Flood Control Plan

Planned Polder Drainage and Retention Ponds in DKI Jakarta



Source: MPA Study Team
based on DKI Jakarta

New Trunk Drainage Systems to Drain Excess Water to Java Sea

4. Expected Benefits

The direct and indirect flood damages in the central economic and business areas of the DKI Jakarta will be mitigated. In particular, suspension of economic and commercial activities due to closing of the road systems will be reduced significantly.

5. Project Cost and Funding Scheme

5.1 Project Cost

The total project cost is estimated at IDR 5,500billion (USD 640 million). The cost of each project component is shown below.

Project Component	IDR billion	USD million
1. Selected new polders and retention ponds in the Spatial Plan (1/3 of polders and 1/4 of ponds of MP completed in 2020)	3,700	425
2. New trunk drainage canal and pumps West Jakarta Route-1: 8.5 km West Jakarta Route-2: 9.0 km	800	100
3. Replacement of the pumps in Melati Pump Station (12.88 m^3)	50	6
4. Local retention ponds with pumps	600	70
5. Integrated management and operations system of the pumps and gates	350	38
Total	5,500	640

Source: MPA Study Team Exchange Rate as of October 2011: USD1.0= IDR 8,700

5.2 Funding Scheme

	Public	Private	Remarks
Selected new polders and retention ponds in the Spatial Plan	√		
New trunk drainage canal and pumps	√		
Renewal of the pumps in Melati Pump Station	√		
Local retention ponds with pumps	√		
Integrated management and operations system of the pumps and gates	√	√	PPP Scheme

Source: MPA Study Team

6. Current Status and Implementation Schedule

6.1 Current Status

The Spatial Plan of DKI Jakarta 2011 - 2030 for flood control and drainage was released to the public on December 2011. Further elaboration is required during the Feasibility Study stage to ensure its effective implementation, including review of the modified master plan.

6.2 Implementation Schedule

Stage	Target Date
Elaboration of the available M/P and F/S	April 2012 - March 2013
Detailed design of the new drainages, pumps, and gates	April 2013 - March 2014
Detailed design of the information system and integrated management system	April 2013 - March 2014
Institutional arrangement for the integrated management and operation under PPP scheme	April 2013 - March 2014
Bid for construction	April to December 2015
Bid for information system and organization setup	April to December 2015
Construction for drainage, pumps, and gates (Phase 1)	January 2016 - December 2020
Production and installation of information system	January 2018 - December 2020
Bid and construction (Phase 2)	January 2021 - December 2025

Source: MPA Study Team

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Finalization of Master Plan by DKI Jakarta;
- Prioritization of Schemes; and
- Determination of Funding Source.

1. Project Title

A. BETTER URBAN ENVIRONMENT

A.6 Flood Management

(3) Normalization of the Rivers in JABODETABEK

2. Project Description

2.1 Objectives

The project aims to mitigate flood in the central economic and business areas of the DKI Jakarta. Flood mitigation will be done by normalizing the river channel, such as widening of river channels, shortcut, and reconstruction of bridges.

Infrastructures for flood management are essential in ensuring the foundation of value-chain for industrial production, distribution networks, commercial and marketing basis, social welfare, and safety of the people. The project is indispensable in achieving the vision of accelerating and expanding Indonesia's economic development by strengthening overall the nation's sustainable global competitiveness towards an innovation-driven economy.

2.2 Necessity of the Project

Among the rivers flowing into JABODETABEK area, the Ciliwung River which traverses the center of the state capital, often cause flood damages during the rainy season. Flood control is required to protect the business and economic center from flood damages. Currently, the flood discharge from the Ciliwung River has been partially diverted to the West Flood Canal through the Manggarai Water Gate. However, flood still occurs in Jakarta. In addition, the increase of the flood runoff ratio in upstream catchments results in the increase of flood discharge in downstream areas. The existing channel capacity of the Ciliwung River could not accommodate the design flood discharge in several stretches, particularly on the stretch from Manggarai Gate to Kalibata Bridge.

The channel of the Ciliwung River is confined on the stretch from Manggarai gate to Kalibata Bridge because of protests from illegal residents that prevented the normalization works on the river channel. Normalization of this river segment to accommodate design flood of 50 -100 years is necessary to mitigate the frequent flood occurrence upstream of the stretch.

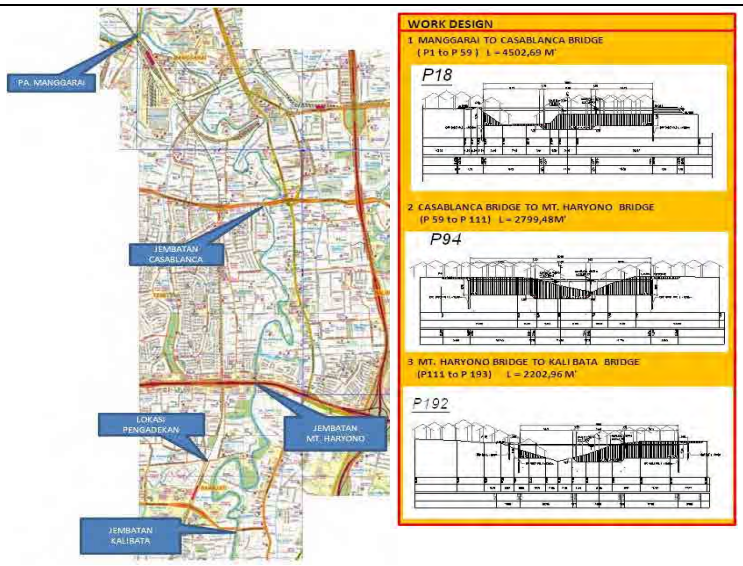
The normalization works for the Ciliwung River in the stretch is indispensable.

2.3 Project Features

The normalization project is composed of the widening of the 9.6 km stretch Ciliwung River channel from Manggarai Gate to Kalibata Bridge and the resettlement of legal and illegal residents in the public domain of the river course. The resettlement program is on-going and is being undertaken by DKI Jakarta. Works on increasing the elevation of the Kalibata Brige is almost complete.

The design flood discharge of 557 m^3/s for the section of the Ciliwung River, has a return period of 100 years. The design cross-section of the normalization component is shown in the Project Images below.

3. Project Images



Source: MPA Study Team based on DKI Jakarta

Alignment and Design Cross-section of the Ciliwung River Normalization Component

4. Expected Benefits

The direct and indirect flood damages in the central economic and business areas of DKI Jakarta will be mitigated. In particular, suspension of economic and commercial activities due to closing of the road systems will be reduced significantly.

5. Project Cost and Funding Scheme

5.1 Project Cost

The construction cost of the normalization component is estimated at IDR 3,000billion.

5.2 Funding Scheme

	Public	Private	Remark
Construction/Normalization works	√		Commenced in 2012
Operation and Maintenance	√		

Source: MPA Study Team

6. Current Status and Implementation Schedule

6.1 Current Status

Design of the normalization section was completed and construction is scheduled to commence on August 2012. Construction is scheduled for completion by the end of 2015.

6.2 Implementation Schedule

Stage	Target Date
(1) Master Plan	Completed in 1997
(2) D/D	Completed in 2011
(3) Commencement of Construction	August 2012
(4) Commencement of Operation	End of 2015

Source: MPA Study Team

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Finalization of Master Plan by the Ministry of Public Works
- Prioritization of Schemes
- Determination of Funding Source

1. Project Title

B. NEW GROWTH SUB-CORRIDOR FOR JABODETABEK MPA

B.1 Development of New Growth Sub-Corridor for JABODETABEK MPA

(1) Development of New Township

2. Project Description

2.1 Objectives

The creation of the New Township will absorb a part of the population increase of JABODETABEK area in the suburbs of Jakarta. For the emerging middle class population, a new type of suburban lifestyle will be sought. The new township development will have good connectivity with the new airport, roads, and railways. It will be a compact, resilient, and ecological city devised with smart technology. The objectives of the project include the following:

(1) To take full use of the locational advantage of the new airport, available transportation means and the materialization of new suburban lifestyle of Indonesia's emerging middle class population
(2) To realize low carbon energy consumption and reduce the environmental impact by the development of "compact city" and the introduction of "smart" technology
(3) To develop the city's resilience against natural disasters by the introduction of disaster prevention technology

2.2 Necessity of the Project

Concentration of activities in the areas of DKI Jakarta is evident. The excessive overcrowding in DKI Jakarta causes traffic congestion, economic degradation, and worsened living conditions of the citizens. In order to mitigate overcrowding in DKI Jakarta, creation of a sub-centers to support DKI Jakarta by developing new township and absorbing part of the growing population are necessary.

2.3 Project Features

(1) Features of the New Township

1) Environmental considerations including natural environment protection, wastewater treatment and solid waste management, etc.;
2) Disaster resilience with the application of state-of-the-art disaster-prevention technologies;
3) Backup functions of administrative services for crisis management by the national government in the event of natural disasters;
4) Utilization of renewable energy and smart technology;
5) Traffic hubs using new information and communication management technology, ICT; and
6) Government involvement in township development.

(2) Project Components and Development Areas

a) Project Components
- Residential, Commercial and Business areas;
- Administration, Education area; and s
- Road/Park/Green areas.

b) Development areas

100 ha (Phase 1: by 2020)
2,400 ha (Phase 2: from 2021 to 2030)
2,500 ha (Total : from 2011 to 2030)

3. Project Images

Source: MPA Study Team

Image of New Township

4. Expected Benefits

Realization of the following benefits are expected throughout the project:

(1) Excessive concentration of both people and traffic in DKI Jakarta will be mitigated;
(2) Reduction of carbon dioxide emissions from the new township;
(3) Negative environmental impacts, such as air and water pollution, noise, odor, etc. can be controlled and avoided;
(4) Disaster-resilience against flood and earthquake in the new township will be given emphasis, and administrative functions will be made workable, even in cases of emergency;
(5) A synergistic effect with the new airport and new seaport is expected;
(6) Creation of new opportunities for employment; and
(7) Quality of life in other cities can be improved by following and adopting the features of this "model" city.

5. Project Cost and Funding Scheme

5.1 Project Cost

The project period is divided into two phases, Phase 1 until 2020, and Phase 2 between 2021 and 2030.

The cost for each phase and the total cost are as follows.

Phase 1 (up to 2020): IDR 5,600,000 million
Phase 2 (between 2021 and 2030): IDR 316,000,000 million
Overall (both Phase 1 and Phase 2): IDR 321,600,000 million

Preliminary Cost Estimate of New Township Development Project (Overall: Phases 1 and 2)

Items	Unit Price (IDR million)	Quantity	Cost (IDR million)	Remarks
(1) Feasibility Study and Basic Design	15,000	1 LS	15,000	
(2) Land Acquisition	8,753	180 ha	1,575,500	
(3) Road	21,881	500 ha	10,940,500	
(4) LRT and BRT	131,300	10 km	1,313,000	
(5) Compact Multi-Infra Station	17,505	100 units	1,750,500	
(6) ICT	1,050,500	1 LS	1,050,500	
(7) Buildings for Business, Commerce, and Public Services	122,533	180 ha	22,056,000	
(8) Residence (high-income)	2,626	7,033 units	18,466,500	
(9) Residence (middle-income)	1,313	45,214 units	59,358,500	
(10) Residence (low-income)	131	211,000 units	27,7001000	
(11) Price Escalation	162,056,000	1 LS	162,056,000	
(12) Contingency	15,317,000	1 LS	15,317,000	5% of Total Cost ((1)-(11))
			321,600,000	

Source: MPA Study Team

5.2 Funding Scheme

The PPP scheme is to be introduced for implementation, operations, and maintenance of the infrastructure portion.

	Public	Private	Remarks
Land acquisition and site preparation	√		For business and commercial areas
Construction of business and commercial buildings		√	
Construction of residences		√	
Infrastructure development	√	√	For the compact Multi-Infra Station
Introduction of ICT	√		
Road construction	√		
Development of LRT and BRT	√	√	

Source: MPA Study Team

5.3 PPP Scheme

It is assumed that PPP scheme will be applied for this project. In this scheme, the private sector establishes an SPC, and the SPC will build, transfer, and operate some facilities such as the business and commercial buildings, residences, and some of the infrastructures.

6. Current Status and Implementation Schedule

6.1 Current Status

An ongoing discussion about the project's conceptual design including contents, scale, site, etc. between the MPA Study Team and the concerned government agencies in Indonesia is being held.

6.2 Implementation Schedule

A master plan for the target area is necessary to implement the project strategically and efficiently.

Stages	Target Date
(1) Master Plan	2012
(2) Feasibility Study	Mid 2012 - Early 2013
(3) Land Acquisition	Mid 2013 - Mid 2016
(4) Basic Design and Detailed Design	Mid 2013 - Mid 2015
(5) EIA	Mid 2012 - Mid 2013
(6) Tender	Early 2015 - Late 2018
(7) Construction (Phase 1)	Late 2015 - End of 2020
(8) Construction (Phase 2)	2021-

Source: MPA Study Team

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Finalization of Pre-Feasibility Study supported by METI, Japan;
- Determination of Implementing Agency (MOPH is recommendable.);
- Settlement of Demarcation between Public and Private Sector;
- Listing on PPP Book by GOI;
- Establishment of Funding Scheme by MOPH and Private Sectors;
- Acceleration of Land Acquisition by MOPH; and
- Incentive Plan for Resident and Companies to move to New Township

1. Project Title

B. NEW GROWTH SUB-CORRIDOR FOR JABODETABEK MPA

B.1 Development of New Growth Sub-Corridor for JABODETABEK MPA

(2) Development of New Industrial Estate in the Vicinity of the New Airport

2. Project Description

2.1 Objectives

This project will house high-tech, high value and export-oriented industries in JABODETABEK area to take advantage of the location's proximity to the new airport and seaport. Availability of the two modes of transport either by sea or air will be an attractiion to locators and business enterprises. The objectives of the project are the following:

(1) To attract high value-added industries that would like to take advantage of the new airport and seaport, and the good logistics connection;
(2) To attract export-oriented companies with foreign currency earnings; and
(3) To meet growing domestic demand for high quality goods and commodities.

2.2 Necessity of the Project

As the land resource in DKI Jakarta is scarce and limited, this project offers plenty of land areas and caters to the growing demand for areas suitable for industries that require fast and reliable connections with the proposed seaport and airport in the suburb of DKI Jakarta.

(1) Attracting industries that are considered strategic to Indonesia (high-tech, high value) and promoting research and development (R&D).
(2) Creating job opportunities for high quality human resources.
(3) Providing a model for export-oriented enterprise with high foreign exchange earnings.

2.3 Project Features

- Project Site : Kab. Karawang, West Java Province (near the new airport)
- Development Area : 750 ha (Overall: Phases 1 and 2)
  375 ha (Phase 1 until 2020)
  375 ha (Phase 2 after 2021)
- Infrastructure : Roads, electricity and water supply, wastewater treatment, solid waste management facilities, etc.
- Type of Industry : High-value added industry including automobile, electronics, ICT, pharmaceutical, food, fashion, etc. to be prioritized

3. Project Images

Source: MPA Study Team

4. Expected Benefits

A synergistic effect is expected from the development of an industrial estate in parallel with the new international airport.

(1) To utilize land areas near the new airport for industrial estate where residential use is not suitable due to noise;
(2) To promote and increase the use of air cargo at the new airport;
(3) To create new job opportunities in Karawang Province; and
(4) To promote high value-added and export-oriented industries, which contribute to foreign currency earnings.

5. Project Cost and Funding Scheme

5.1 Project Cost

The project period is divided into two phases, Phase 1 up to 2020, and Phase 2 after 2021.

The cost of each phase and the total cost are as follows.

Phase	Project Cost (IDR billion)
Phase 1 (until 2020):	IDR 1,700 billion
Phase 2 (after 2021):	IDR 1,500 billion
Overall (Phases 1 and 2):	IDR 3,200 billion

Source: MPA Study Team

Preliminary Cost Estimate for the New Industrial Estate in the Vicinity of the New Airport

Item	Unit Price (IDR billion)	Quantity	Cost (IDR billion)	Remarks
F/S and BD	10	1 LS	10	
Land Development	1,130	1 LS	1,130	
Infrastructure of utility	460	1 LS	460	
Others	100	1 LS	100	
Total			1,700	

Note: * Developments to be accompanied by the new airport development including access road to the airport are excluded in the above cost estimate.

Source: MPA Study Team

5.2 Funding Scheme

In this project, costs for site preparation and development of some of infrastructure shall be financed by private companies.

5.3 PPP Scheme

It is assumed that PPP scheme will be applied for this project. In this scheme, the private sector establishes an SPC, and the SPC will build and operates the facilities in the site. The SPC will recover its investment from the rent of the users. The demarcation between public and private is shown below.

	Public	Private	Remarks
Land acquisition and site preparation	√		
Development of access roads and power transmission	√		
Site preparation		√	
Infrastructure development inside the estate	√	√	
Introduction of ICT	√		
Sale of lots	√		
Operations and maintenance of infrastructure, and facilities to be developed	√	√	

Source: MPA Study Team

6. Current Status and Implementation Schedule

6.1 Current Status

The site of the new airport is to be determined in the JICA-supported Master Plan Study on Multiple-Airport Development for Greater Jakarta Metropolitan Area. The MPA Study Team discussed the concept of the industrial estate including site, scale, etc., with the concerned government agencies in Indonesia.

6.2 Implementation Schedule

Stage	Target Date
(1) Master Plan and Feasibility Study	2012
(2) Award of the Concessionaire	2013
(3) Detailed Design	2015
(4) Commencement of Construction (Phase 1)	2016
(6) Commencement of Construction (Phase 2)	After 2021
(7) Commencement of Operations	2018

Source: MPA Study Team

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Determination of Implementing Agency. (MOI is recommendable.);
- Settlement of Demarcation between Public and Private Sectors;
- Listing on PPP Book;
- Formulation of Development Plan by MOI referring to the Master Plan for New Airport;
- Acceleration of Land Acquisition by MOI; and
- Coordination with Other Ministries by MOI for Development of Utilities,

1. Project Title

B. NEW GROWTH SUB-CORRIDOR FOR JABODETABEK MPA

B.2 Development of New Academic Research Cluster

(1) Development of New Academic Research Cluster

2. Project Description

2.1 Objectives

The project aims to promote the "Cluster Development in Support of Six Economic Corridors Development" by "innovation cluster strengthening as the center of excellence" as described in MP3EI (page 42).

As the first among the themes, the bio-based industry in Indonesia will be created by intensifying the link between existing biological resources and scientific research achievements with biotech business activities. This will be done through transfer of biotechnology research achievements to various industrial activities.

The New Academic Research Cluster, by doing so, will function as a catalyst that will turn Indonesia's abundant biological resources into the country's major revenue sources. The outcome will lead to "Innovation-Based Industry" as described in MP3EI (page 41).

2.2 Necessity of the Project

Indonesia is endowed with world-class biological diversity. With the adoption of the Nagoya Protocol on Access and Benefit-Sharing (ABS), Indonesia gained an impetus to further explore and utilize its biological resources. At the same time, expectation is high for Indonesia to improve the accessibility of its abundant biological resources to the rest of the world.

Existing academic institutions and research laboratories in Indonesia have long been conducting academic researches on local flora and fauna. Some of the institutions and laboratories boast of having world renowned reputations. However, outputs from their activities are not explicitly utilized for commercialization purposes.

The Government of Indonesia has proactively been promoting the practical use of its biological resources through programs such as the development of Serpong Biopark Indonesia. These initiatives may gain stronger impetus if they were to be pursued in collaboration with the private sector stakeholders, and integrated with environmental-friendly features.

Enhancing the link by technology transfer between academic research achievements and business activities will be the key to realize innovation in bio-based industry. The New Academic Research Cluster, by utilizing the country's existing advantages in biological resources, is expected to turn Indonesia into the world's leading hub for bio-based industries. This will be done by utilizing the country's existing advantages in biological resources.Innovation requires a catalyst. The New Academic Research Cluster, which was developed and managed jointly by public and private sectors, is an essential infrastructure for such innovation to be realized.

2.3 Project Features

The cluster will be comprised of the following three major functions. All new developments will feature an environmental-friendly, energy-efficient, socially-inclusive designs and technologies, making it a "Smart-Cluster":

(1) Integrated Support Center (Phase-1)

The Integrated Support Center is the core intelligent facility that links existing academic institutions and laboratories with current and future business activities. Activities for exchange of information, dissemination of knowledge and technology transfer, while

protecting intellectual property right, will be conducted in this key facility. The Integrated Support Center may be developed in Serpong, in line with the Serpong Biopark Indonesia Program.

The Integrated Support Center will also be developed and operated directly under a public authority or by private companies under agreement.

(2) Business Incubation Centers (Phase-1)

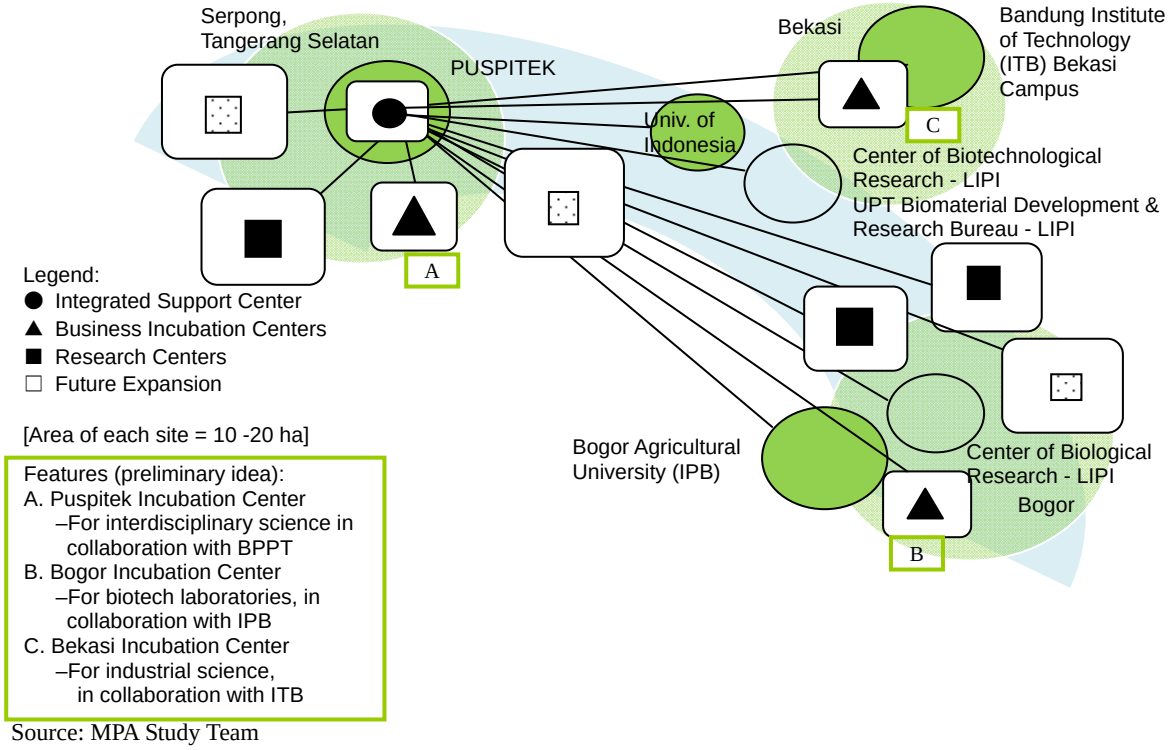
These facilities are dedicated to foster an optimum environment for potential business activities to be actively conducted with support from functions of the Integrated Support Center. Small but innovative elements of bio-based businesses will be incubated at the center. Advanced laboratory facilities and office space will become available for bio-entrepreneurs at moderate tariff.

Business Incubation Centers may be developed in the form of a few complexes. Environmentally friendly and low carbon features will be incorporated into the complexes. These complexes may be developed in dispersed manner, within easy reach of the integrated Support Center. The center may be developed and operated by private companies under a concession agreement.

(3) Research Center (Phase-2)

Ecologically-friendly research park for corporate R&D centers equipped with smart grid and zero emission (water, sewage and hazardous waste disposal infrastructure, etc) will be situated in the outskirt green belt zone. These R&D centers will maintain strong linkages with the activities of the Business Incubation Centers and will have good access to the Integrated Support Center, so as to be able to obtain up-to-date information on all the activities within the New Academic Research Cluster.

3. Project Images



Source: MPA Study Team

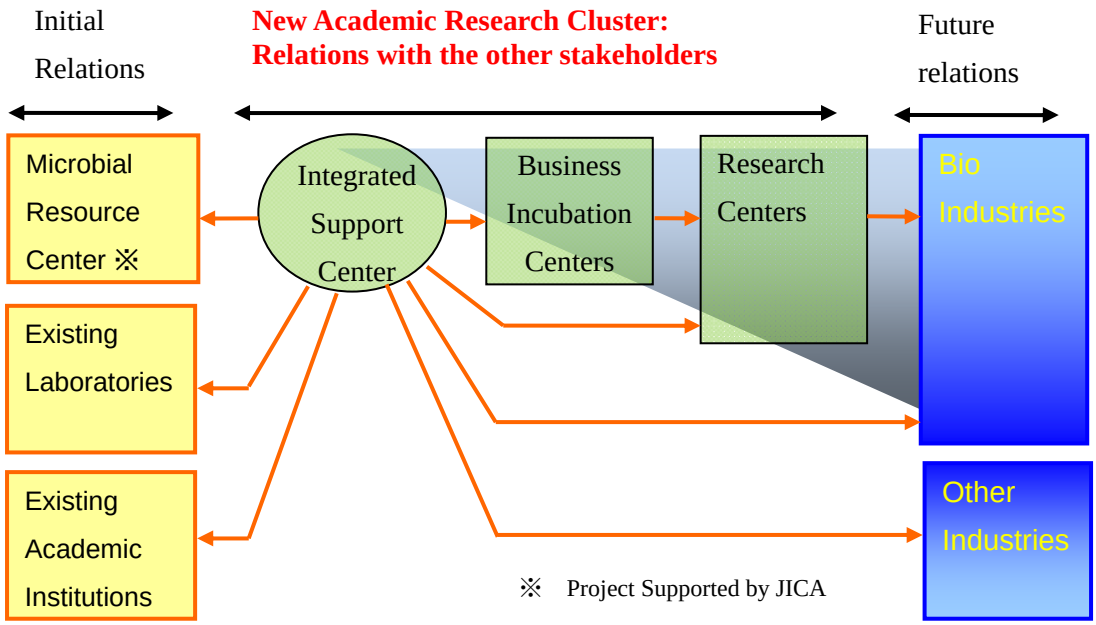
Illustration of the New Academic Research Cluster

The project will formulate a cluster with existing research functions and newly developed functions. The location of the Integrated Support Center may be reviewed if necessary.

Source: MPA Study Team

Perspectives of Facilities for New Academic Research Cluster

4. Expected Benefits



Source: MPA Study Team

4.1 Integrating the Activities of the Existing Institutions

Currently, various institutions under the State Ministry of Research and Technology (RISTEK) are conducting academic research activities. A coordinating role is required, not only to improve efficiency by avoiding redundant activities, but also to improve procedures for access to Indonesia's biological resources and research achievements by external and foreign entities. Coordinating role can be played by the Integrated Support Center of the New Academic Research Cluster. The center is expected to act as a one-stop shop for those who require access to Indonesia's biotechnology research properties and biological resources.

4.2 Bridging Academic Research Achievements with Commercial Activities

There are limited cases in which a bio-based industry business entity contacts existing academic research institutions and laboratories for technology transfer and access to biological resources. By bridging the academic and commercial sectors, both sectors are expected to enhance their activities. The academic sector will conduct more activities that yield useful outputs for the industrial sector, while bio-based industries can further their R&D activities by making use of the outputs from the academic sector.

4.3 Promoting Innovation in Indonesia's Bio-based Industries

Innovation is realized when the structure of business relations changes dramatically. Bio-based industry may experience this change when technology transfer and access to biological resources become more easily and practically available by facilitating their R&D activities. Active exchange of information, not only between the academic and business sectors but also among various stakeholders, is expected to trigger innovation; making Indonesia's bio-business sector a world's leading showcase. This is what will be expected when existing institutions and industries are brought under an integrated New Academic Research Cluster.

5. Project Cost and Funding Scheme

5.1 Project Cost

The project costs is shown in the following table:

Preliminary Cost Estimate for New Academic Research Cluster

	Unit Price	Unit	Cost (IDRmillion)	Notes
Land acquisition	N/A	20 ha x 1 site	0	National land
Improvement of Land	0.343/m^2	20 ha x 50% x 3 sites	103,000	Research center
Smart Utilities on site	-	1 site	15,000	Support center
		3 sites	91,000	Incubation center
		3 sites	121,000	Research center
Construction of Bld./Facilities	9.7/m^2	10,000m^2 x 1 site	97,000	Support center
		10,000m^2 x 3 sites	291,000	Incubation center
		20,000m^2 x 3 sites	582,000	Research center
Instruments for analysis	10/m^2	10,000m^2 x 3 sites	300,000	Incubation center
	20/m^2	20,000m^2 x 3 sites	1,200,000	Research center
(Operation)			(Excluded)	
Grand Total			IDR 2,800,000 million	
The above costs include contingency and VAT. Operation cost will be borne by the Indonesian side.				

Source: MPA Study Team

5.2 Funding Scheme

The funding scheme of the project is shown in the following tables:

	Public	Private	Remarks
Land acquisition and site improvement	√		for Research Center Only
Construction of buildings/facilities	√	√	
SMART Utilities	√	√	
Instrument for Analysis	√	√	
(Operation)		√	

Source: MPA Study Team

Preliminary Funding Scheme for New Academic Research Cluster (Exchange rate USD = JPY76)

	Phase-1				**Phase-2**	
	Integrated Support Center 10,000m^2 x 1 site		Incubation Center 10,000m^2 x 3 sites		Research Center 20,000m^2 x 6 sites	
	Fund Scheme (IDR million)		Fund Scheme (IDR million)		Fund Scheme (IDR million)	
	Public	Private	Public	Private	Public	Private
Land acquisition	National land		National land		National land	
Improvement of Land	completed		completed		103,000	
Smart Utilities on site	15,000		91,000		121,000	
Construction of Bld./Facilities	97,000		291,000			582,000
Instruments for analysis			300,000			1,200,000
Sub Total	112,000		682,000		224,000	1,782,000
Grand Total	112,000		682,000		2,006000	
	IDR 2,800,000 million					
The above costs include contingency and VAT. Operation cost will be borne by the Indonesian side.						

Source: MPA Study Team

5.3 PPP Scheme

It is assumed that PPP scheme is applied for this project. In this scheme, the private sector establishes an SPC and the SPC will build and operate some of the facilities, such as Research Center. Operation of the Integrated Support Center and Incubation Center shall be done through cooperation of public and private sectors.

6. Current Status and Implementation Schedule

6.1 Current Status

New Academic Research Cluster can be developed in line with the existing program created by the Indonesian government. Serpong Biopark Indonesia, which is a program initiated by the Agency for the Assessment and Application of Technology (BPPT) is an example of an existing governmental program that can be expanded to the New Academic Research Cluster project.

This program is already listed in the Blue Book, and therefore is ready for arrangement of development assistance with the donors.

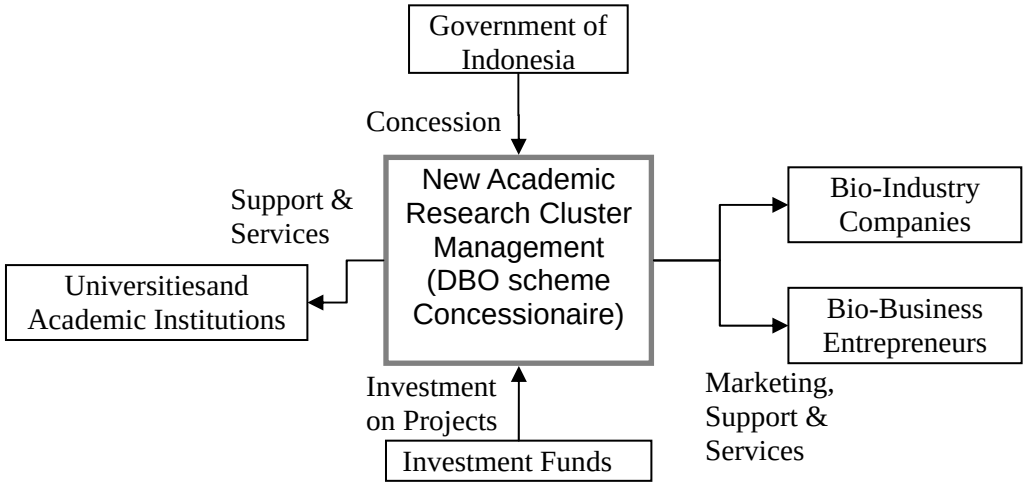
6.2 Implementation Procedure

The project requires a comprehensive policy on how Indonesia's bio-based industry can be developed. A master plan on the industry's development policy together with the role of the government will have to be developed as the first step of the project.

The master plan will also identify the realistic source of funding and governmental supports. Some portions of the funding should, desirably, come from private sources.

A feasibility study will be conducted immediately after the master plan. The feasibility study should identify necessary information such as the location, size and basic design of the facilities, and should estimate the project costs.

The project will be efficiently pursued if operation of the facilities and activities were to be conducted by private entities that have an experience in academic support services. Concessions for PPP operation will be granted to a private entity chosen through tendering. The concession may require not only operation, but also design and construction of the facilities (DBO scheme).



Source: MPA Study Team

A Concept of PPP Scheme for the New Academic Research Cluster

6.3 Implementation Schedule

Stage	Target Date
(1) Master Plan	Completed in March 2012
(2) Arrangement for Governmental Supports	September - December 2012
(3) Tender for PPP Concessions	January - March 2013
(4) Detailed Design and EIA	January - August 2013
(5) Commencement of Construction	October - December 2013
(6) Inauguration	2015-2016

Source: MPA Study Team

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Finalization of Pre-Feasibility Study supported by METI, Japan by the end of November 2012;
- Based upon METI Pre-Feasibility Study, the further study will be considered;
- Formulation of Attractive Business Plan for the Private Sectors (by BPPT);
- Government Supports, such as Tax Holidays and/or Tax Reductions, Protection of Intellectual Properties, Priority Access to Biological Resources, and so on.; and
- Listing on PPP Book

1. Project Title

B. NEW GROWTH SUB-CORRIDOR FOR JABODETABEK MPA

B.3 Development of Road/Railway along New Growth Sub-Corridor for JABODETABEK MPA

(1) Construction of Second Jakarta-Cikampek Toll Road

2. Project Description

2.1 Objective

The existing Jakarta-Cikampek Toll Road is already saturated due to the rapid growth of traffic on the economic corridor. This north coastal corridor (PANTURA) is the most important corridor in the Java Island for accelerating the economic growth of the nation and is indicated in MP3EI. Traffic demand is expected to grow in this corridor. Thus, it is desirable to develop another axis which is parallel to the existing Jakarta-Cikampek Toll Road and to design a robust toll road network.

2.2 Necessity of the project

(1) Current Status of the Existing Jakarta-Cikampek Toll Road

The Jakarta-Cikampek Toll Road with a length of 83 km was constructed in 1988 and has been operated by PT. Jasa Marga. The traffic volume has increased steadily and reached to 363,300 vehicles/day in 2010. This traffic volume is the second largest among Jasa Marga's toll roads (see Table-1).

To meet the increasing traffic demand especially in the Jakarta-Cikarang Toll Road, the number of lanes were increased in the western part of Cikarang Industrial Area from six lanes to eight lanes in 2009. However, traffic demand still exceeds the road capacity in the Jakarta-Cikarang section (see Figure-1).

(2) Necessity of the Second Jakarta-Cikampek Toll Road

Indonesia's recent economic boom has attracted a considerable amount of direct foreign investment from Japan, Korea, China and other countries. For instance, major automobile companies have developed large factories in the East Jakarta Industrial Area (Cikarang, Karawang) followed by many subcontractors.

To the east of the "East Jakarta Industrial Area (Cikarang, Karawang)", new industrial areas (Surya Cipta, Indo-Taisei) are planned to be developed, which corresponds with future national projects, such as the new Cilamaya Seaport, a new airport, and a new administration area.

Traffic on the existing Jakarta-Cikampek Toll Road has already reached its road capacity, especially in Jakarta-Cikarang section. This toll road plays an important role for freight traffic because of the following conditions:

1) Many industrial areas have been/will be developed along the existing Cikampek Toll Road.
2) The dry port operated in April 2011 is located at the north of the existing toll road, will attract more freight traffic.
3) Freight traffic will increase when the Cilamaya seaport is opened.

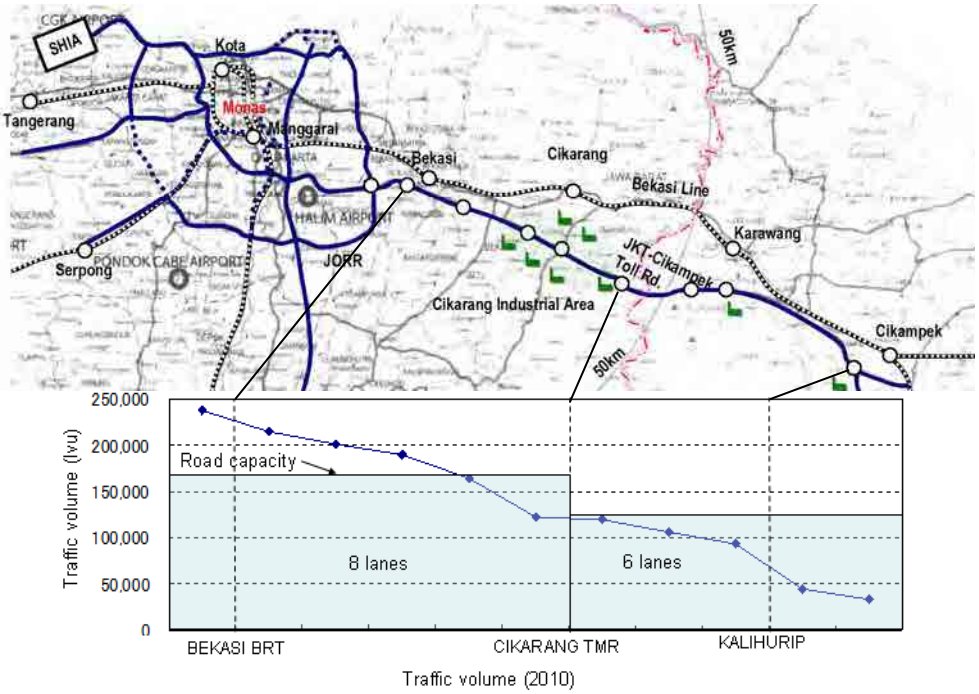
On the other hand the second Jakarta-Cikampek Toll Road will serve more passenger traffic compared to the existing toll road since it would directly connect with the planned international airport in Karawang.

Toll Road Sections Operated by PT Jasa Marga

Daily Traffic Volume (*1000vehicles/day)

Area	Road Section	2006	2007	2008	2009	2010	Length (km)	(% of total) open-year
Jakarta	Jagorawi	319.8 10 %	318 99%	310.5 97%	329.6 103%	343.1 107%	59	11.10% 1978
	Cawang-Tomang-Cengkareng (JIUT)	704.8 100%	701.4 100%	669.8 95%	690.8 98%	675.7 96%	38	7.20 1987
	Jakarta-Cikampek	288.3 100%	330.7 115%	331.3 115%	342.7 119%	3.3 126%	83	15.60% 1988
	Jakarta-Tangerang	2 1.8 100%	311 107%	311.5 107%	326.4 112%	249.4 85%	39	7.30% 1984
	Jakarta Outer Ring Road (JORR)	235.7 100%	281.4 119%	285.3 121%	308.3 131%	327.1 139%	43	8.10% 1991
	Bogor Ring Road (BORR)				1.8	20	4	0.80% 2009
Bandun	Pu baleunyi	133.7 100%	144 108%	146.5 110%	178.7 134%	190.8 143%	122	23.00% 19 0
Surabaya	Surabaya-Gempol	153.2 100%	147.3 96%	152.7 100%	165.3 108%	173.4 113	49	9.20% 1986
Semarang	Semarang	66.4 100%	70.4 106	73.5 11 %	78.3 118%	87.9 132%	25	4.70% 1983
Medan	Belmera	43.7 100%	46 105%	45.8 105%	46.4 106%	47.2 108%	43	8.10% 1986
Cirebon	Palikanci	34.5 100%	37.6 109%	39.4 114%	42.1 12	42.3 122%	26	4.90% 1998
	Total	2,272 100%	2,388 10 %	2,366 1 4%	2,510 110%	2,520 111%	531	100%

Source: PT Jasa Marga Interview Results



Source: MPA Study Team Based on Interview with PT Jasa Marga

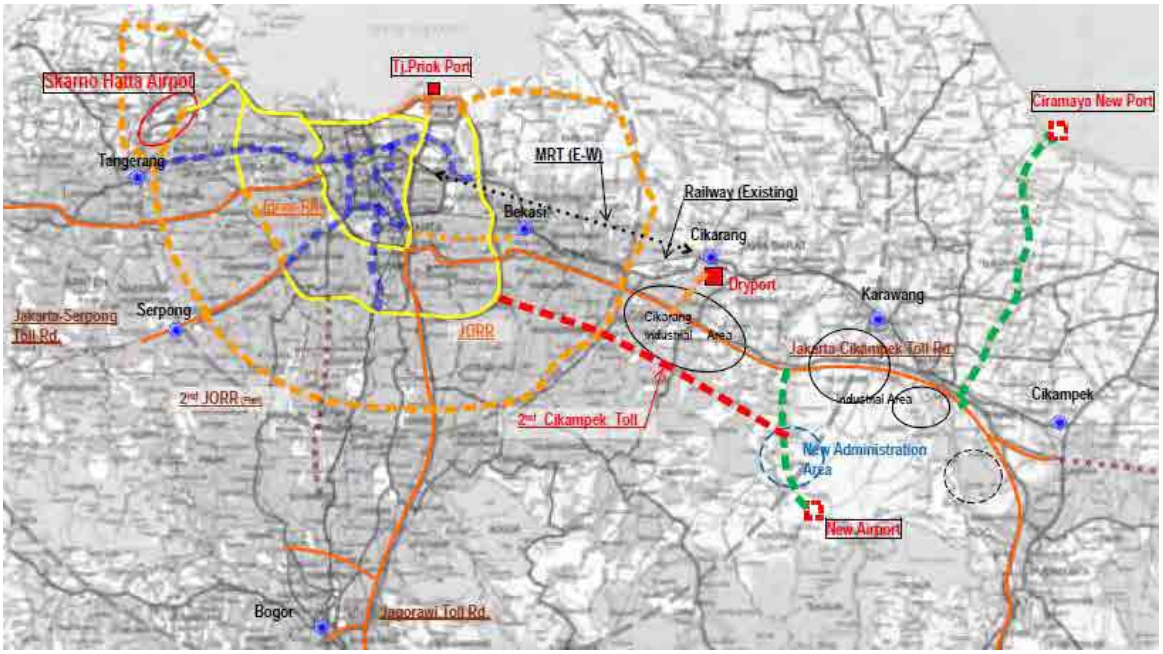
Traffic Volume in the Jakarta – Cikampek Toll Road (2010)

2.3 Project Features

The second Jakarta-Cikampek Toll Road will increase the toll road capacity of the Java Economic Corridor in this region. The planned length is 37 km and it will have six lanes for all the sections. The toll road would connect Jakarta, Cikarang and the new international airport t and access road to new Cilamaya seaport.

3. Project Images

(the second Jakarta-Cikampek Toll Road is shown along the red dotted line)



Source: MPA Study Team

4. Expected Benefits

The construction of the second Jakarta-Cikampek Toll Road will increase road capacity between Jakarta and Cikampek. Iit will supplement the road capacity of the already saturated Cikampek Toll Road. By expanding the road capacity of the existing corridor between Jakarta and Cikampek, it will reduce vehicle operation cost and travel time cost on the road network. Furthermore, it provides an alternate route to the existing toll road. Thus, it will provide a more reliable road network in case of accidents and emergencies. This will also provide a faster connection to the airport.

5. Project Cost and Funding Scheme

5.1 Project Cost

The project cost is estimated using the current prices in 2011 as indicated in the table below.

Project Cost of Second Jakarta–Cikampek Toll Road

	IDR billion or Equivalent to USD million (Exchange Rate: USD 1=IDR 8,827)	
1. Civil Works	2,752	311.8
2. Engineering Works	275	31.2
3. Contingencies of 1 and 2	270	30.6
Subtotal (1-3)	3,297	373.6
4. Land Acquisition	826	93.6
5. Administration Fee	347	39.3
6. VAT 10%	330	37.4
Grand Total (1-6)	4,800	543.82

Source: MPA Study Team

5.2 Funding Scheme (PPP)

It is assumed that toll road operations will be handled by the private sector. Three kinds of possible funding schemes will be applied by assigning the financial responsibility for design and construction as shown in the table below.

	Case I		**Case II**		**Case III**	
	Public	Private	Public	Private	Public	Private
Land acquisition	√		√			√
Design and construction	√		√	√		√
Operations and maintenance		√		√		√

Source: MPA Study Team

6. Current Status and Implementation Schedule

6.1 Current Status

The second Jakarta-Cikampek Toll Road was proposed in SITRAMP, Urban Transportation Master Plan for Jabodetabek 2004, and also included in the JABODETABEKPUNJUR Spatial Plan (PP54, 2008). However, the toll road has not been listed in the road development plan by the Ministry of Public Works.

6.2 Implementation Schedule (Draft)

Stage	Target Date	Note
Pre-Feasibility Study, or included to other study	2012	Related to other projects (new airport/seaport)
Feasibility Study	2013	
Fund Preparation, EIA	2014	Foreign Fund, BOT, PPP
Detailed Design and Land Acquisition	2015	
Tender and Construction	2016 - 2019	Civil works for three years
Operation	2020	Private toll road company

Source: MPA Study Team

7. Challenge and Action to be taken

The following actions shall be taken for the smooth implementation of the project:

- Registration of the National Spatial Plan;
- Registration of the Road Master Plan by PU;
- Listing on PPP Book by GOI;
- Implementation of Feasibility Study;
- Execution of Land Acquisition;
- Execution of Land Acquisition (Tanjung Priok-Cikarang); and
- Determination Funding Source by Private Sector.

1. Project Title

B. NEW GROWTH SUB-CORRIDOR FOR JABODETABEK MPA

B.3 Development of Road/Railway along New Growth Sub-Corridor for JABODETABEK MPA

(4) Construction of Freight Railway to New Cilamaya Seaport

2. Project Description

2.1 Objective

To construct a new freight railway connecting Cikarang Dry Port along Java North Main Line to the new Cilamaya Seaport.

2.2 Necessity of the Project

Lack of road capacity as well as insufficient number of Inland Container Depots (ICD) and dry ports in the vicinity of the Tanjung Priok Seaport are causing serious traffic congestion. Accordingly, a new international seaport and container terminal are planned to be constructed in Cilamaya by 2020. At present, there is no access road and railway to the proposed site of the new Cilamaya Seaport.

2.3 Project Features

(1) Construction of single track between Cilimaya Terminal and Cikarang Dryport

- Route Alignment: new 41.7 km of single track at grade level;
- Civil Works: 41.70 km of embankment with a height of 3 m, top width of 6-10 m;
- Track Works: 41.7 km of single tracks with four intermediate passing loops, using R54 type rail and 1067-mm gauge width;
- Bridge Works: 12 steel plate girder bridges; and
- Signaling and Telecommunication Works: automatic block system, fiber-and-copper cable or optical fiber transmission, train radio system, telephone exchange, dedicated telephone terminal.

(2) Construction of Stabling Track in Cikarang

- Track Works for Stabling Yard in Cikarang: Eight stabling tracks for freight trains and two stabling and inspection tracks for locomotives within a yard area of 43,000 m^2 (860 m×50 m);
- Civil Works: 43,000 m^2 embankment with the height of 3 m, water supply, drainage;
- Building Works: administration building, signal control room, inspection shed, etc.;
- Signaling and Telecommunication Works; and
- Maintenance Facilities: fabrication and erection of oil storage tank and water tank, light maintenance equipment, inspection pit, overhead crane, under-floor jacks, and spare parts.

(3) Construction of Container Terminal at Cilamaya New Terminal

- Track Works: Two bays of three rail tracks with a single-track neck, at an area of approx. 40,000 m^2. (40 m×500 m×2);
- Civil Works: 400 mm depth reinforced concrete (RC) pavement of the container yard, water supply, drainage and sewerage works;
- Bridge Works: one single-track PC girder bridge with steel piers with a length of 25 m, and pile length of 30 m, which connects landside to the Cilamaya new terminal;
- Building Works: 2 modular offices with control rooms;
- Signaling and Telecommunication Works; and
- Container Handling Equipment: 4 reach stackers and 6 head truck/chassis trucks.

(4) Procurement of Rolling Stocks

- 16 locomotives (CC201) (14 for daily operations and 2 for reserve) ; and
- 387 wagons (368 for daily operations and 19 for reserve).

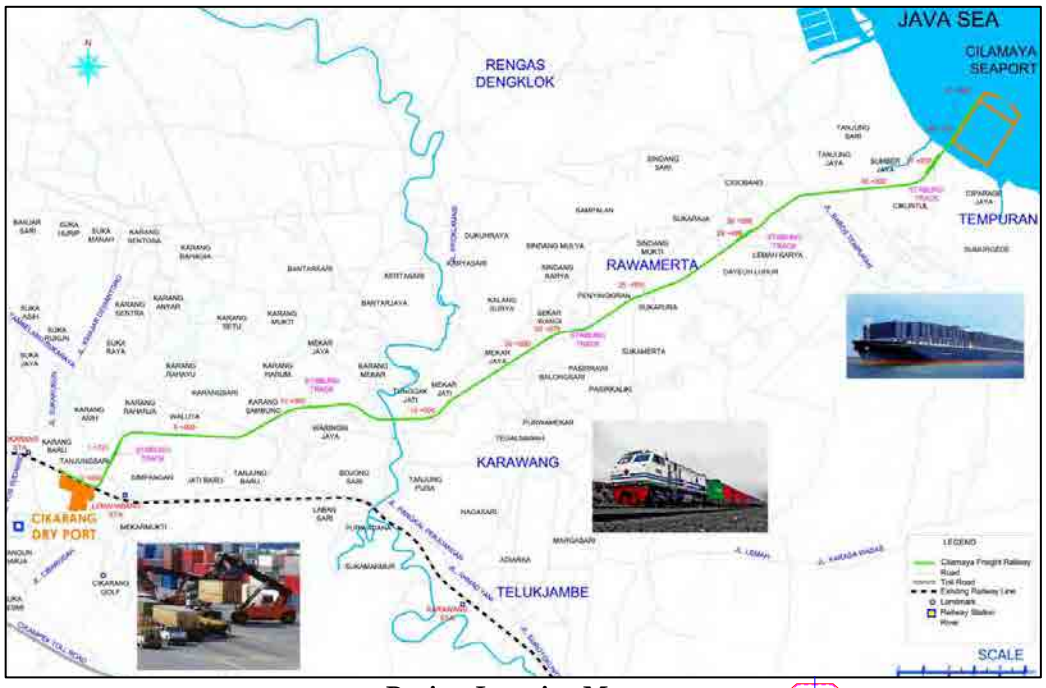
(5) Operation Plan

Operation Plan for Freight Railway from/to Cilamaya New Terminal

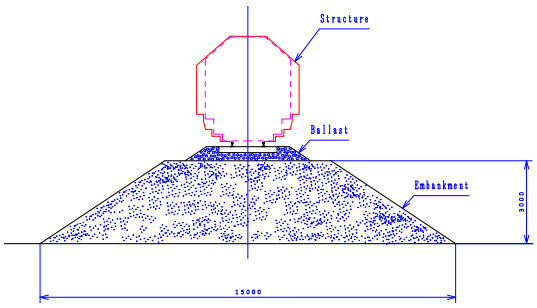
Operation Section	Distance (km)	Trip Time (min)	Trips per day	Wagons Per train	Throughput (TEU)
Cilamaya-Gedebage	178.5	307	6	32	70,080
Cilamaya-Cikarang	41.5	78	27	64	584,000

Source: Master Plan Study on Port Development and Logistics in Greater Jakarta Metropolitan Area, 2011

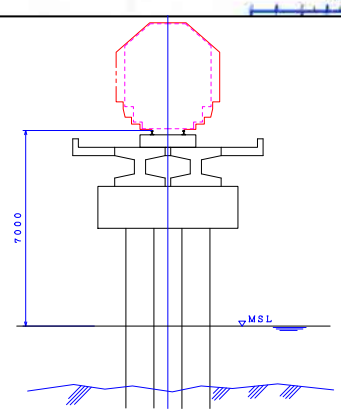
3. Project Images



Project Location Map



Typical Cross Section



Cross Section of Bridge Link Landside to Cilamaya NewTerminal

Source: Adopted from the Master Plan Study on Port Development and Logistics in Greater Jakarta Metropolitan Area, 2011

4. Expected Benefits

- Railway transport produces less exhaust gas and pollution as compared with truck transport;
- Railway transport reduces the traffic volume and congestion surrounding the seaport;
- Railway transport is expected to create considerable advantages, particularly in terms of enhancement of handling capacities of the terminal, which is currently limited. At the same time, railway transport will form a basic social infrastructure for regional development; and
- Railway transport will support in minimizing the dwelling time of containers in the terminal, supplementing the truck transport, by quickly dispatching the cargos from the terminal. Subsequently, the stock area in the yards will have available spaces for the succeeding cargoes unloaded from the ships. As a result, the railway transport will contribute in substantially enhancing the handling capacity of the terminal without investing large additional cost for the expansion of berthing facilities, or deepening of the channel/berthing area by dredging to accommodate larger container ships.

5. Project Cost and Funding Scheme

5.1 Project Cost

The preliminarily estimated total project cost is IDR 3,400 billion including construction cost, O&M cost, procurement of rolling stocks, land acquisition, engineering cost, contingency cost, price escalation, taxes, and duties.

Preliminary Estimation of Project Cost

Item		Construction Cost IDR billion
1	Civil Works	894
2	Building Works	106
3	Track Works	390
4	Signaling Works	184
5	Telecom Works	60
6	Maintenance Facilities	39
7	Container Handling	126
8	Rolling Stock	926
	Sub-total	2,725
9	Land Acquisition	105
10	Engineering Cost (6%)	164
11	Contigency Cost (7%)	133
12	Taxes and Duties (10%)	273
	Total Project Cost	**3,400**

Source:The Survey for Cilamaya New Port Development Project, 2011

5.2 Funding Scheme

The capital investment of infrastructure, rolling stock, and land acquisition should be borne by the Directorate General of Railways (DGR) in behalf of the central government. The O&M costs of all railway facilities and equipment, and some capital investment costs such as station facilities, should be borne by a railway freight operator, such as PT KA.

	Public	Private	Remarks
Land acquisition	√		for ROW, infrastructure and rolling stock
Construction of Handling Facilities		√	
Construction of Station Facilities		√	
Construction of Dry Port facilities		√	
O&M of Handling Facilities		√	
O&M of Station Facilities		√	
O&M for Dry Port Facilities		√	

Source: Master Plan Study on Port Development and Logistics in Greater Jakarta Metropolitan Area, 2011

Role, Cost and Revenue of Main Stakeholders for the Project

Stakeholder	Role	Cost & Revenue
Container Yard Operator (Pelindo, MTI)	Handling TEU at port yard, Lo/Lo, depot management	Capital investment cost of handling facilities O&M costs of handling facilities and equipment Revenue from handling, hauling, Lo/Lo, storage
Central Government Directorate General of Railways	Acquiring ROW, infrastructure, rolling stock	Capital investment cost of infrastructure, rolling stocks, and ROW Revenue : TAC
Railway Freight Operator (PT KA)	Transport of TEU by train from port to dry port	Capital investment cost of station facilities O&M costs of all railway facilities and equipment Revenue from transportation by train
Dry port Operator	Handling TEU at dry-port yard, Lift-on/Lift-off, depot management	Capital investment of dry port facilities O&M costs of dry-port handling facilities and equipment Revenue from handling, Lift-on/Lift-off, storage
Truck Feeder	Transport by truck from dry port to factory, loading and unloading	O&M costs of trucks Revenue for transportation by truck

Source: Master Plan Study on Port Development and Logistics in Greater Jakarta Metropolitan Area, 2011

6. Current Status and Implementation Schedule

6.1 Current Status

- Master Plan Study on Port Development and Logistics in Greater Jakarta Metropolitan Area was prepared and completed in March 2011; and
- The survey for Cilamaya New Port Development Project was implemented and completed in July 2011; and
- Feasibility study for Cilamaya Port will start at the January of 2012.

6.2 Implementation Schedule

Stage	Target Date
(1) Feasibility Study	2012
(2) Selection of Consultant	2013
(3) Detailed Design and Tender Documents Preparation	2014
(4) Land Acquisition	2015-2016
(5) Selection of Contractor(s)	2016
(6) Civil Works	2017-2019
(7) Railway O&M Works	2018-2019
(8) Rolling Stock Procurement	2017-2019
(9) Commencement of Services	2020

Source: The Survey for Cilamaya New Port Development Project, 2011

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Registration of the National Spatial Plan;
- Registration of the Railway Master Plan by MOT;
- Implementation of Feasibility Study; and
- Land Acquisition for the Freight Railway.

1. Project Title

B. NEW GROWTH SUB-CORRIDOR FOR JABODETABEK MPA

B.3 Development of Road/Railway along New Growth Sub-Corridor for JABODETABEK MPA

(5) Construction of Access Road to the New International Airport

2. Project Description

2.1 Objective

To secure access by constructing a new road to the new international airport in Karawang this will connect the airport to the existing Jakarta - Cikampek Toll Road and Second Jakarta-Cikampek Toll Road.

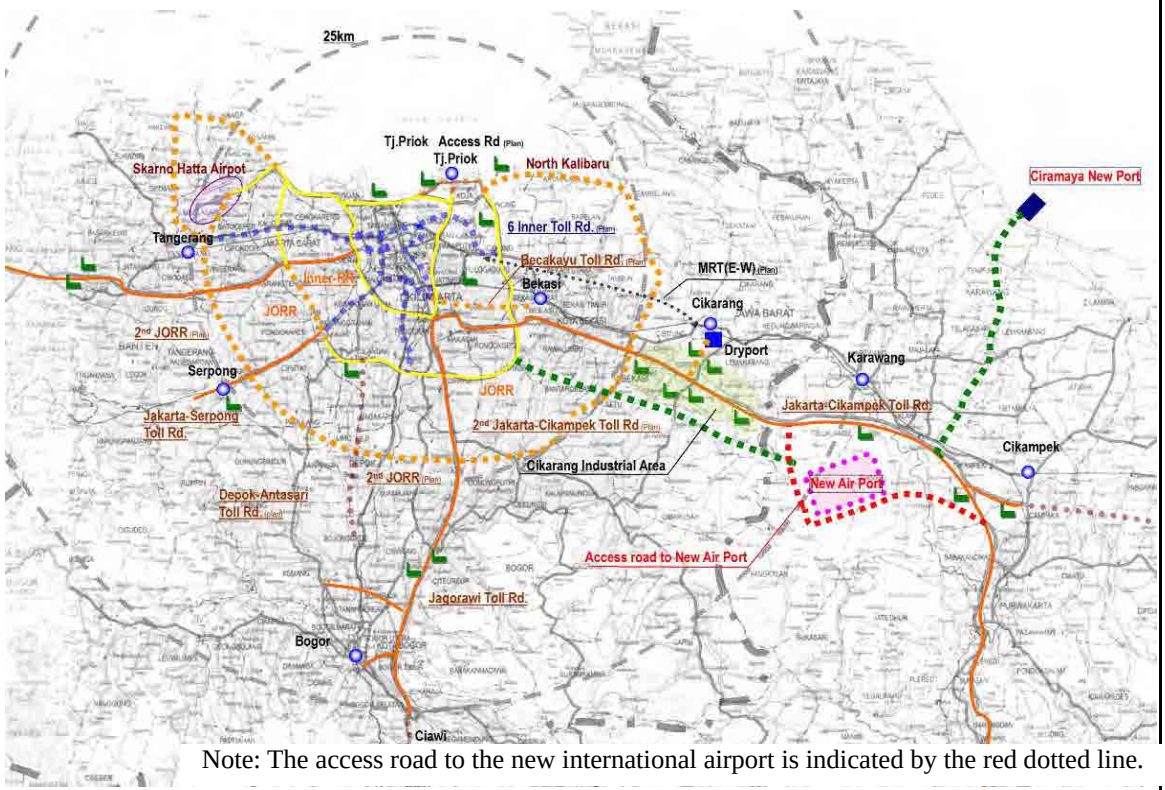
2.2 Necessity of the Project

The new international airport planned to be developed about 60 km east of the center of Jakarta. Access should be provided when the said airport will been opened. Developing an access road from the existing toll road is the better option in terms of time and cost.

2.3 Project Features

The airport access road connects the Jakarta-Cikampek Toll Road to the planned new airport in Karawang. And the airport access road connects Second Jakarta-Cikampek Toll Road in future. The road will have four lanes initially and will be expanded to six lanes in later stage. The road will be further extended to the Cipularang Toll Road to the east. The total length from Jakarta–Cikampek Toll Road through the new international airport to Cipularang Toll Road is 39.5 km.

3. Project Images



Note: The access road to the new international airport is indicated by the red dotted line.

Source: MPA Study Team

4. Expected Benefits

The expected benefits of the access road to the new international airport include:

- Smooth access from the existing toll road network will be provided to passengers and freight traffic through the construction of the new access road; and
- Development of the access road will bring about reduction of travel time and vehicle operating cost.

5. Project Cost and Funding Scheme

5.1 Project Cost

The preliminary cost estimation for the development of access road to the new airport is IDR 2,200 billion.

5.2 Funding Scheme (PPP)

It is assumed that toll road operation will be carried out by the private sector. Three kinds of possible funding schemes can be applied considering the financial responsibility for design and construction as shown in the table below.

	Case I		**Case II**		**Case III**	
	Public	Private	Public	Private	Public	Private
Land acquisition	√		√			√
Design and Construction	√		√	√		√
Operation and Maintenance		√		√		√

Source: MPA Study Team

6. Current Status and Implementation Schedule

6.1 Current Status

The Master Plan Study on Multiple-Airport Development for Greater Jakarta Metropolitan Area was completed in March 2012. The master plan also includes the study on the access road.

6.2 Implementation Schedule

Stage	Target Date
(1) Master Plan	Completed in March 2012
(2) Feasibility study	2012 - 2013
(3) PPP package tender document preparation	End of 2013
(4) Selection of the concessionaire	End of 2014
(5) Detailed Design and EIA	Middle of 2016
(6) Land acquisition	Middle of 2016
(7) Construction	Middle of 2019

Source: “Master Plan Study on Multiple-airport Development for Greater Metropolitan Area” by JICA, 2012

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Registration of the National Spatial Plan;
- Registration of the Airport Master Plan by MOT; and
- Implementation of Feasibility Study.

1. Project Title

B. NEW GROWTH SUB-CORRIDOR FOR JABODETABEK MPA

B.3 Development of Road/Railway along New Growth Sub-Corridor for JABODETABEK MPA

(6) Construction of Jakarta-Bandung High Speed Railway via the New International Airport

2. Project Description

2.1 Objective

The agglomeration of the population along the corridor from Jakarta to Bandung has intensified. This corridor is part of the Java Economic Corridor which has been identified in MP3EI. In MP3EI, the Jakarta - Bandung corridor was proposed to be supported by railway. In order to support the economic activities in the corridor, the railway line between Jakarta and Bandung should be strengthened. Development of a high-speed train is also included in the spatial plan of West Java Province.

On the other hand, the new international airport was planned for development in Karawang in line with the goals of multiple gateways proposed in the Vision for 2030. It is desirable to provide high-speed rail access to the international airport in order to avoid traffic congestion in the city.

2.2 Necessity of the Project

As one of the key issues of the development concepts of JABODETABEK MPA in 2030, New Growth Pole Development was proposed, where a new seaport and airport are planned to be constructed and their surrounding areas are to be developed through the introduction of urban functions such as gateways, commerce and businesses, residences, high-tech industries, sports and culture, and research and development. Furthermore, some administrative functions of the central government were also considered to be relocated out of Jakarta. In order for this plan to materialize, it is inevitable to establish efficient multimodal transport systems connecting with the existing political and economical poles.

According to the airport master plan study supported by JICA, which is currently being implemented, the future air traffic demand in JABODETABEK will exceed the handling capacity of the existing Soekarno-Hatta International Airport by around 2020. Also, the development of a new international airport in Karawang (hereinafter referred to as “NIA”) was proposed as one of the priority projects of the MPA, in addition to the project for the improvement of Soekarno-Hatta International Airport.

As one of the most efficient transport systems for passenger access, it is recommended to construct a high-speed railway link between Jakarta and NIA.

On the other hand, transportation volume between Jakarta and Bandung, the third largest economic pole of Java, has been drastically increasing recently. At present, the travel time between Jakarta and Bandung when using the highway is approximately 2.5 hours during off-peak hours, but is 5-6 hours during peak hours. Thus, this causes large economic losses every day. The extension of the high-speed railway link from NIA to Bandung will enhance the integrated development of JABODETABEK and Bandung. Furthermore, access time from Bandung to the international airport will be significantly shortened and the accessibility to international transport of the Bandung area will remarkably be improved.

The high-speed railway system is a technological breakthrough in passenger transport which will allow for the increase of railway share in modal split among other transport

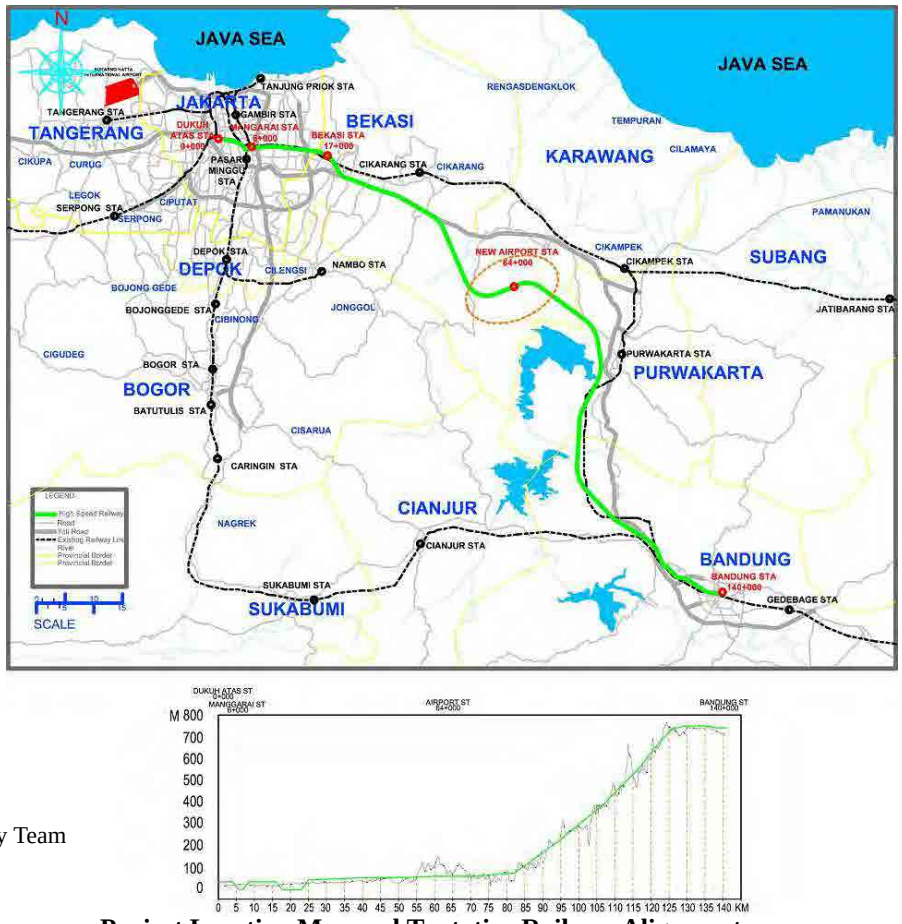
modes. The high-speed railway project that will link Jakarta and Surabaya (distance of 685 km) via Cikampek, Cirebon, Semarang and Cepu was proposed in 2010 by the Directorate General of Railways of the Ministry of Transportation. The high-speed railway system to be constructed under this project will constitute a part of the future project connecting Jakarta and Surabaya.

2.3 Project Features

The project consists of the construction of a high-speed railway between Jakarta and Bandung via NIA. The section between Jakarta and NIA will be constructed as Stage I, and the section from NIA to Bandung will be constructed as Stage II.

- Station: Dukuh Atas (Sudirman), Manggarai, Bekasi, NIA, and Bandung
- Operational Speed: Maximum commercial speed of 300 km/h
- Route Length: 140 km (Stage I: 65 km, and Stage II: 75 km)
- Travel Time: Jakarta to NIA: 20 min (Stage I),
  NIA to Bandung : 20 min (Stage II)
- Gauge: 1,435 mm
- Power: AC 25 kV 50 Hz
- Maximum Gradient: 25 per mm
- Rolling Stock: Electrical Multiple Unit (EMU), 8 cars (opening stage), 12 cars (future)
- Signal: Cab Signal, Automatic Block, Digital Automatic Train Control (ATC)

3. Project Images



Source: MPA Study Team

Project Location Map and Tentative Railway Alignment

Terminal Station

Terminal Station

Typical Platform

Typical Platform

Typical Tunnel Section

Tunnel Portal

Typical Elevated Section

Typical At Grade Section

Source: MPA Study Team

4. Expected Benefits

- To provide reliable and convenient access for passengers traveling through NIA to/from their final destinations/origins. It will shorten the traveling time between the airport terminal and the city centers of Jakarta or Bandung;
- To enhance the integrated development between JABODETABEK and Bandung through possible efficient utilization of human resources and better communications by connecting both metropolitan areas with reduced travel time and distance;
- To contribute to the development of a new growth sub-corridor located east of Jakarta with the decrease in travel time of passengers;
- To reduce environmental load by reducing energy consumption through the conversion of passengers' transport mode from automobiles to electrified railway; and
- To reduce to some extent the excessive concentration of population in JABODETABEK, in order to reduce various social and economic problems.

5. Project Cost and Funding Scheme

5.1 Project Cost(Stage I)

The total project cost of stage I was estimated at IDR 39,800 billion.

Civil Works (Roadbed, Bridge, Tunnel, Track, Station, etc)	IDR 34,850 billion
Rolling stocks, etc	IDR 4,950 billion
Total	IDR 39,800 billion

** This cost does not include the cost of land acquisition, price escalation, etc.

5.2 Funding Scheme

Option 1: Project Financing Scheme

A project entity is to be established and the cost is treated as “financing for a large scale capital project” where the repayment resource is limited to the assets and revenues of the project. The scope of the new entity will either consist of construction, operations, and maintenance as in the case of Jakarta MRT, or operations and maintenance only. The financial resources would come from the public and private sectors of Indonesia, multilateral funding agencies, Japan’s financial assistance agencies, or Japan’s private sector to the organization in charge of operations.

Option 2: PPP-OMC Scheme

This scheme involves the joint implementation of the government and private sectors. The option of “separation of infrastructure and operations” can be adopted since it is currently applied to the Indonesian railway sector. Private investment will finance the entity for operations and maintenance. Infrastructure will be constructed and owned by the government. The financial resources would come from the public sector of Indonesia, multilateral funding agencies, and/or Japan’s financial assistance agencies.

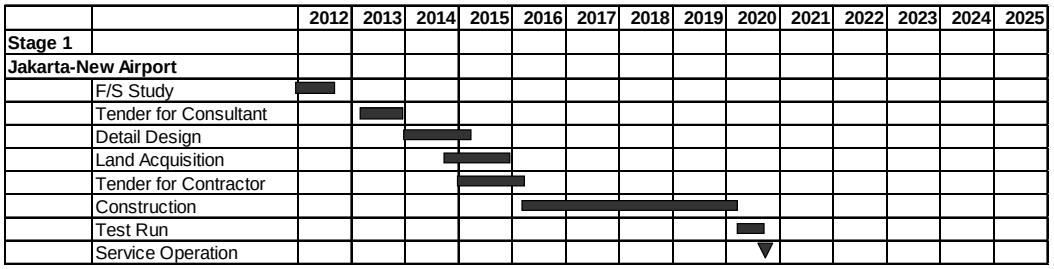
6. Current Status and Implementation Schedule

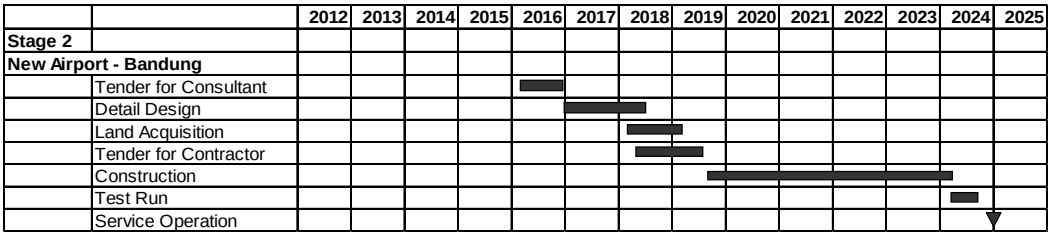
6.1 Current Status

- The Study on Java High Speed Railway Construction Project (Pre-F/S, JETRO) was completed in 2009;
- The Master Plan Study on Multiple-Airport Development for Greater Jakarta Metropolitan Area (JICA) is completed in March 2012;
- The Pre-Feasibility Study on Jakarta-Bandung High Speed Railway (MLIT) was completed in March 2012; and
- The Pre-Feasibility Study on Jakarta-Bandung High Speed Railway (METI) has started in April 2012, and will be completed in March 2013.

6.2 Implementation Schedule

The expected implementation schedule of each stage is shown below.





Source: MPA Study Team

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Registration of the National Spatial Plan;
- Registration of the Railway Master Plan by MOT; and
- Implementation of Feasibility Study.

1. Project Title

C. MULTIPLE GATEWAYS

C.1 Development of Cilamaya Port

(2) Development of New Car Terminal at Cilamaya Port

2. Project Description

2.1 Objectives

The transportation equipment industry including the motor vehicle sector is an important industry in the Java Economic Corridor, particularly in the JABODETABEK region as identified in MP3EI. The industry shows strong potential growth since car ownership is still low in Indonesia. The development of specialized motor vehicle terminals in the ports areas are included as one of the strategies to improve connectivity to the Java Economic Corridor. Developing a car terminal as well as container terminal as parts of a new commercial port facility in Cilamaya would contribute to the promotion of the automotive industry and its related industries in the region.

2.2 Necessity of the Project

Even if the existing car terminal expands in Kalibaru, the capacity of the existing car terminal will be able to handle the automotive cargo demand till 2020. Due to limited backup area causing congestion in the surrounding areas of the Tanjung Priok Port, and the limited capacity of access roads around the port, it is not recommended to concentrate all the required facilities by expansion of the existing car terminal at Tanjung Priok. It is against the basic development policy in the JICA Port Master Plan Study.

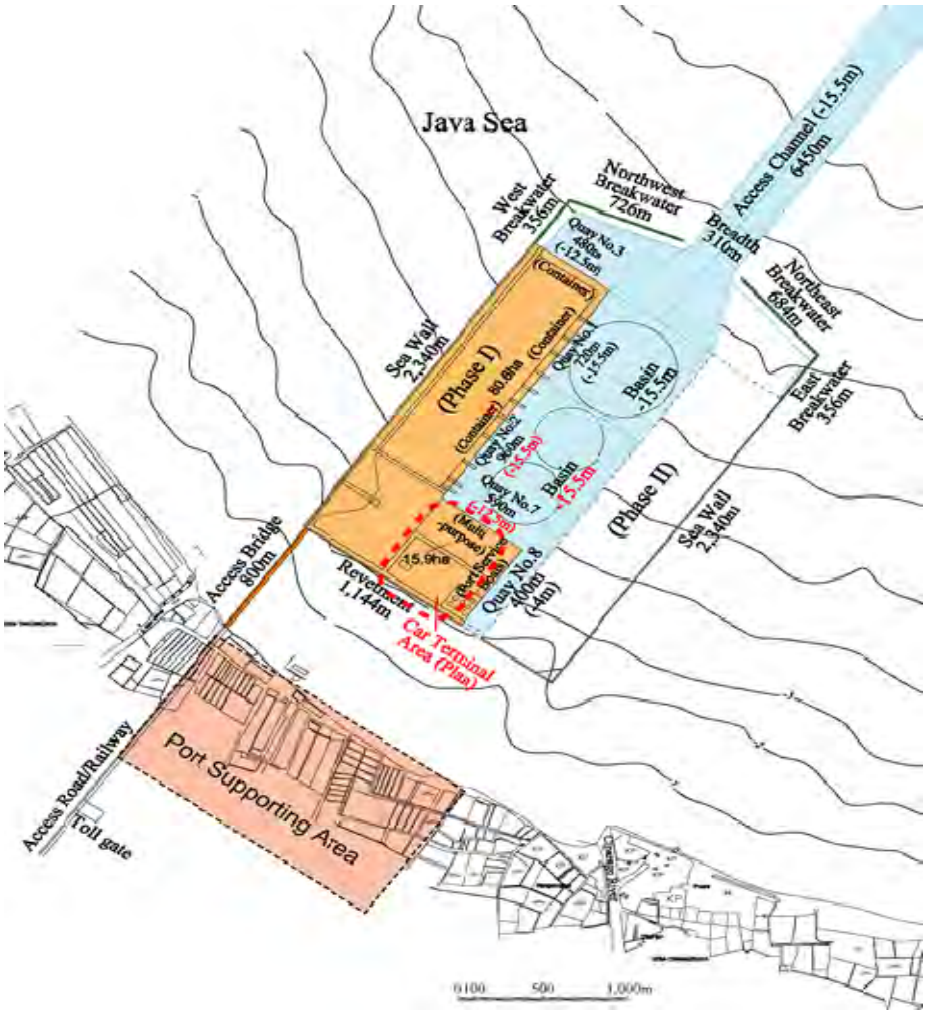
Therefore, a new car terminal should be developed in Cilamaya in order to handle the automotive cargo produced by the manufacturing factories in the eastern part of Jakarta. The new terminal will also cope with the automotive sea trade demand after 2020.

2.3 Project Features

The development project of a new car terminal with a handling capacity of at least 500,000 units consists of the following components:

(1) Provision of a berthing facility with at least 500 m berth length for Pure Car Carrier (PCC) operations of 22,000 DWT. The water depth of the facility will be -12.5 m in order to possibly accommodate at least two large PCCs with 200 m length simultaneously;
(2) Provision of a yard area sufficient for at least 10,000 parking slots. The total area is expected not less than 200,000 m^2 (500 m x 400 m);
(3) Provision of a backup area outside of the terminal for the car motor pool to be utilized by the car manufacturers; and
(4) The necessary utility supply and terminal management office building.

3. Project Images



Source: MPA Study Team

The new car terminal development is planned as part of Phase 1 of the Cilamaya New Port development.

4. Expected Benefits

- To enhance competitiveness of sea transport for the automotive industry in the ASEAN region by minimizing logistics costs between the port and factories in the eastern part of Jakarta;
- To enhance the domestic sea transport capacity of automotive production;
- To reduce traffic congestion on the toll road in the metropolitan area; and
- To reduce damages to Completely Built-Up (CBU) vehicles by shortening the transport and storage time at the terminal.

5. Project Cost and Funding Scheme

5.1 Project Cost

The cost of car terminal construction works is estimated and shown in the table below. The construction costs of revetment and dredging the access channel and basin in front of the terminals are expected to be provided by the Port Authority.

Preliminary Cost Estimate for Development of Cilamaya Car Terminal

	Unit	Cost (IDR billion)	Note
Berthing Facility (-12.5 m)	500 m	70	Open type wharf
Dredging / Reclamation	1,500,000 m^3	216	
Yard Parking Pavement	188,000 m^2	81	Asphalt concrete type including yard lighting system
Loading / Unloading Area	12,000 m^2	11	Concrete type
Utilities (Power, Water and Drainage System)	1 set	22	
TOTAL		400	

Note: The conversion rate is USD1.0 = 80 yen and USD 1.0 = IDR 8,500. The cost was estimated at 2011 prices.
Source: MPA Study Team

5.2 Funding Scheme

Public funding: Dredging the access channel and basin, terminal access road network, breakwater/revetment/seawall, substation of main power supply, etc. required outside of the car terminal premises should be provided together with the entire new port development plan.

Private sector: Construction of berthing facility, yard parking pavement, and all utilities concerned within the car terminal premises. The above cost of car terminal construction works will be financed by the private investors.

	Public	Foreign Assistance	Private
Land acquisition and site improvement	√		
Construction of berthing facilities, pavement and car terminal facilities			√
Dredging works		√	
Construction of terminal access road, breakwater/revetment/seawall, substation power supply, etc.		√	

Source: MPA Study Team

6. Current Status and Implementation Schedule

6.1 Current Status

The proposed car terminal will form one of the components of Phase 1 of the Cilamaya New Terminal Development project. This is recommended in the JICA Port master plan since this facility recognized as an important and urgent infrastructure for connectivity of the economic corridor.

The master plan for a new port development in Cilamaya consists of container terminals and multi-purpose terminal which was converted in to the car terminal during the MPA study due to the strong requests from the auto manufacturers in the port hinterland. The JICA Port Master Plan study was completed in March 2011. The Ministry of Transportation of the Government of Indonesia authorized the inclusion of the Tanjung Priok Master Plan based on the recommendation of JICA Port Master Plan and its Implementing Strategy of the urgent development of a container terminal in North Kalibaru, and the development of a new terminal at Cilamaya in May 2011. The Port Master Plan as was signed by Minister of MOT in April 2011.This Port Master Plan was reviewed and updated by DGST MOT based on thelarger domestic container traffic demands than expected 2009-2010. Accordingly the Port

Master Plan as signed by Minister of Transport was modified. The Minister of MOT approved the modified Port Master Plan in June 2012. The pre-feasibility study for the construction of the access road was carried out by JICA from August 2011 to November 2011, in close coordination with the West Java Provincial Government.

6.2 Implementation Schedule

This proposed car terminal facilities development is planned for implementation as part of the Phase 1 project of the Cilamaya new port development. The following implementing schedule was considered together with the Phase 1 project of the new port development.

Stage	Target Date	
	Loan Project	Terminal Investor
(1) FS and EIA application of port and access road	Within 2012	
(2) EIA survey and obtain approval from MOE	2012-2013	
(3) PPP scheme study and loan application by MOT	2013	
(4) Preparation of PQ, tender documents and procurement of car terminal investors by PA		2013-2014
(5) Procurement of consultants for engineering design of facilities of the loan project by PA	2014	
(6) Conducting detailed design of facilities of the loan project under PA	2015-2016	
(7) Design works of facilities of car terminal and obtain EIA approval from MOE by terminal investor		2015-2016
(8) Procurement of contractor for constructing the facilities of the loan project by PA	2016	
(9) Commencement of construction works of the loan project under PA	2016	
(10) Commencement of construction works of the car terminal by investor		2017
(11) Construction period of the loan project	2016-2019	
(12) Construction period of car terminal		2018-2019
(13) Commencement of car terminal operations		2020

Source: JICA MP Study

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- The project will be implemented together with Cilamaya Port under C.1 (1) as FTP 1.2.

1. Project Title

C. MULTIPLE GATEWAYS

C.1 Development of Cilamaya Port

(3) Development of Logistics Park (Supporting Facilities for the New Port)

2. Project Description

2.1 Objectives

This project aims to create a new logistics network centered at the new Cilamaya Port. The new port will have an efficient cargo/logistics distribution system and will contribute to the economic activities in the region. Traffic congestion in and around the port area would be alleviated.

2.2 Necessity of the Project

The new port was planned in Cilamaya with a capacity of 7.5 million TEUs in 2030. However, the logistics facilities supporting its activities such as container depots, warehouses, logistics center, stockyard, etc. have not yet been considered.

In order to promote the use of the new port and to avoid crucial traffic congestion around the Cilamaya Port, it is necessary to establish a strategic logistics network connecting Cilamaya Port and nearby industrial areas. The economic and industrial development in Indonesia requires more advanced logistics services. The development of: 1) port supporting facilities near Cilamaya Port, and 2) a dry port and logistics center along the highway and railway are required in order to provide such advanced services.

2.3 Project Features

The port supporting logistics facilities will be comprised of two major logistics parks.

This project is supposed to have a functional base for physical distribution to support logistics for the Cikampek and Karawang regions. Arrangement of facilities such as highly sophisticated shipping storages, storage equipped with refrigerator, and container freight stations are planned.

(1) Logistics Park (1); Port Supporting Area (near Cilamaya Port)

Location: near Cilamaya Port (on the opposite shore)
Area: about 150 ha
Functions:

- Car stockyard (for loading and unloading, pre-delivery inspection(PDI));
- Container stockyard (for empty containers, container repairing yard, loaded container temporarily);
- Logistics center (high performance warehouses, refrigerated warehouses, trailer parking area, CFS, etc.);
- Port-related industry (distributive processing, Assembly processing plant, etc.) ; and
- Offices and others.

Area Allocation of Logistics Park (1)

Item	Area	Note
(1) Car stockyard	20 ha	For loading and unloading, PDI
(2) Container depot	30 ha	Empty containers, container repairing yard, etc.
(3) Logistics center	30 ha	High performance warehouses, refrigerated warehouses, trailer parking area, CFS, etc
(4) Port-related industries	30 ha	Assembly processing plant, etc
(5) Offices and others	20 ha	
(6) Road	20 ha	
TOTAL	150 ha	

Source: MPA Study Team

(2) Logistics Park (2); Dry Port and Logistics Center (along the highway and the railway)

Location: Cikampek (along the highway and railway)
Area: about 150 ha
Functions:

- Dry port (provide an integrated port and logistics services as a port terminal, to be able to complete all document formalities of port clearance and customs clearance) ; and
- Logistics center (high performance warehouses, distributive processing center, refrigerated warehouses, trailer parking area, CFS, etc.).

Area Allocation of Logistics Park (2)

Item	Area	Note
(1) Dry port	100 ha	Extended gate of Cilamaya Port, provides one-stop services for logistics
(2) Logistics center	50 ha	
TOTAL	150 ha	

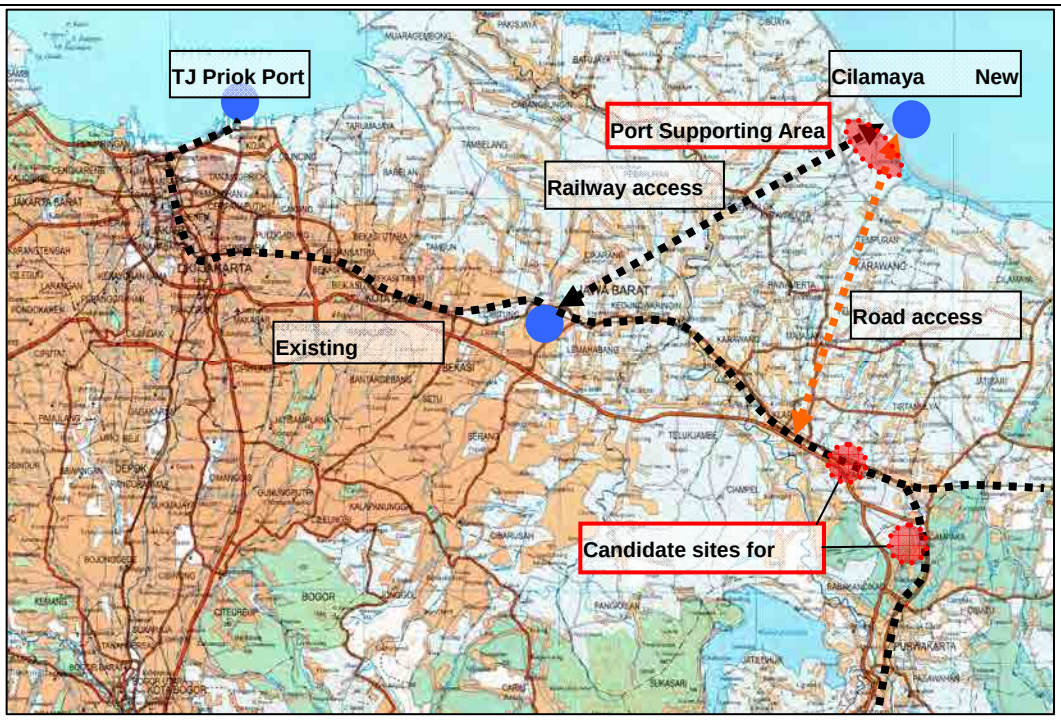
Source: MPA Study Team

(3) Promotion of Logistics Parks

To make the dry port competitive against Cilamaya Port and Tanjung Priok Port and to make logistics companies to locate into the logistics parks, some arrangements should be taken in close cooperation with the Government of Indonesia.

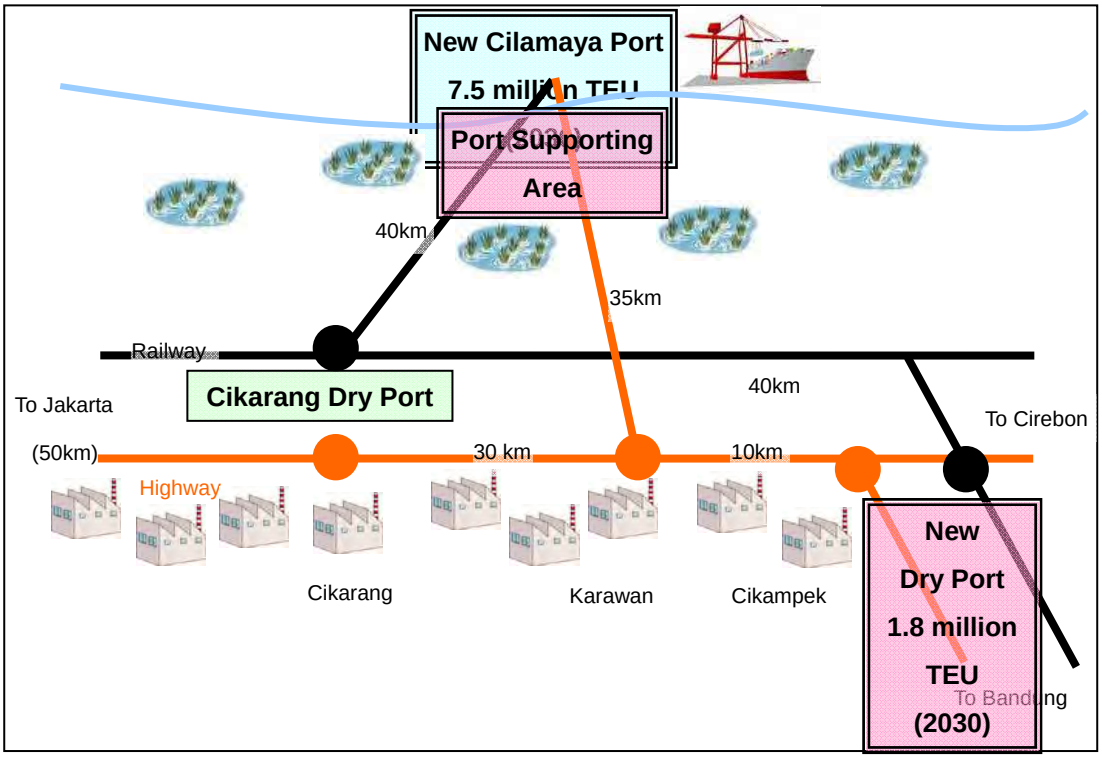
Integrated operations of the Cilamaya Container Terminal and the dry port are advisable for cargo handling efficiency. If Cilamaya Port and the dry port are operated by one operator, cargo handling would be more efficient. For example, in Thailand only one company operates both container terminal in Laem Chabang and the inland container depot in Lat Krabang. This contributes to an efficient cargo handling.

3. Project Images



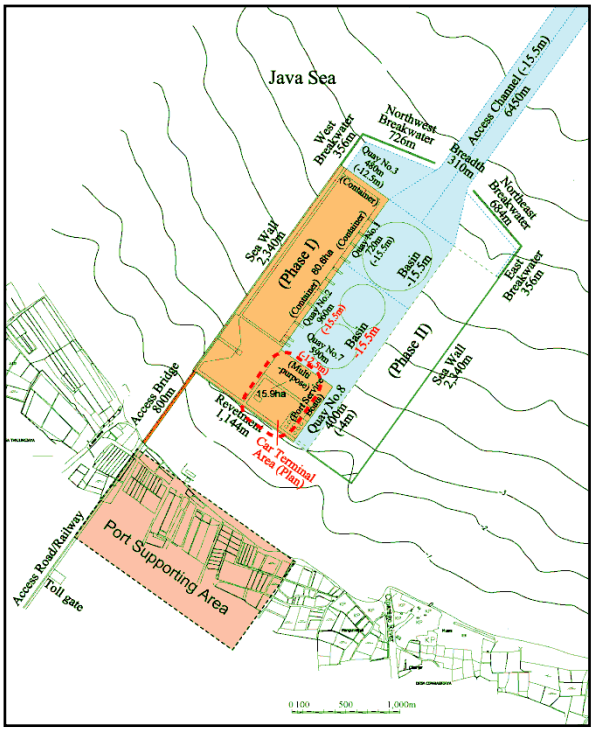
Project Site Map

Source: MPA Study Team



Schematic Diagram (Dry Port/Logistics Center)

Source: MPA Study Team



Site Map (Cilamaya Port and Port Supporting Area)

Source: JICA MP Study

Container Depot/Dry Port

Car Stockyard

Logistics Center

High Performance Warehouses (Indoor)

Source: MPA Study Team from Cargo Circulation Center at Tokyo Bay in Japan

Project Images

4. Expected Benefits

- To ease traffic congestion not only in and around JABODETABEK area but also around the new Cilamaya Port and its vicinities;
- To improve the operational convenience in Cilamaya Port;
- To improve the convenience to port users for shippers and consignees;
- To decrease logistics costs;
- To enhance the handling capacity of Cilamaya Port;
- To provide more advanced logistics services to shippers/consignees; and
- To create better logistics circumstances.

5. Project Cost and Funding Scheme

5.1 Project Cost

Preliminary Cost Estimate for Logistics Park (1) ~Port Supporting Area~

Item	Unit Price (IDR billion)	Quantity	Unit	Cost (IDR billion)	Note
Logistics master plan	20	1	LS	20	
F/S and B/D	10	1	LS	10	
Land acquisition	2	150	ha	300	
Land improvement	1,191	1	LS	1,191	
Infrastructure and utility	305	1	LS	305	
Contingency	160	1	LS	160	
Subtotal				1,986	
Car stockyard	302	1	LS	302	Pavement, office
Container depot	453	1	LS	453	Pavement, office
Logistics center	1,357	1	LS	1,357	Warehouses
Port-related industries	1,357	1	LS	1,357	Factories
Contingency	345	1	LS	345	
Subtotal				3,814	
TOTAL				5,800	

Source: MPA Study Team

5.2 Funding Scheme (Private)

Applying the Private scheme was considered.

	Public	Private	Remarks
Land acquisition		√	
Construction of infrastructure		√	
Construction of buildings/facilities		√	
Operations		√	

Source: MPA Study Team

6. Current Status and Implementation Schedule

6.1 Current Status

- The Ministry of Transportation of the Government of Indonesia authorized inclusion of the new port development master plan in the Tanjung Priok Master Plan in April 2011. The new port at Cilamaya is one of the components of middle-term and long-term development as parts of the Tanjung Priok Port Master Plan;
- Feasibility study for Cilamaya Port will start at the January of 2012;
- The Ministry of Industry indicated interests in the development of the industrial areas near Cilamaya Port.

6.2 Implementation Schedule

Stage	Target Date
(1) Logistics Master Plan	2012-2013
(2) Feasibility Study	2014
(3) Land Acquisition	2015-2017
(4) Detailed Design	2017
(5) Tender	2018
(6) Construction	2019-2020
(7) Commencement of Operation	2020

Source: MPA Study Team

- The objective of the logistics master plan is to grasp the logistics circumstances and cargo flow in the Java Island and prepare a master plan to realize the efficient logistics environment including the allocation of logistics facilities.

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Establishment of the Logistic Master Plan;
- Arrangement of the Source of Finance for Land Acquisition; and
- Land Acquisition.

1. Project Title

C. MULTIPLE GATEWAYS

C.2 Improvement of Tanjung Priok Port

(2) Expansion of Car Terminal at Kalibaru

2. Project Description

2.1 Objectives

As mentioned in the project profile for the car terminal at Cilamaya Port, the transportation equipment industry including the motor vehicle sector is an important industry in the Java Economic Corridor, particularly in the JABODETABEK region. The industry has strong potential growth since car ownership is still low. In MP3EI, the development of specialized motor vehicle terminals at ports is included as a strategy to improve its connectivity to the Java Economic Corridor. The expansion of the existing car terminal in Kalibaru would enhance the operational capacity in order to support the automotive industry in the country.

2.2 Necessity of the Project

The throughput of Completely Built-Up (CBU) vehicles currently handled in the existing car terminal has increasing remarkably. Based on the demand projection, the throughput handled through sea trade will reach more than 300,000 units in 2015 and more than 500,000 units in 2020.

The handling capacity of the existing car terminal is limited to approximately 250,000 units. The expansion of the yard area and the provision of an additional berth facility at the existing car terminal are urgently required to cope with the demand of 300,000 units in 2015. The production of the automotive industry would be hampered without the improvement of the car terminal.

The project is formulated as part of the master plan of the Tanjung Priok Ports, of which formulation was supported by JICA in the Study on Port Development and Logistics in Greater Jakarta Metropolitan Area in March 2011.

2.3 Project Features

The expansion of the existing car terminal mainly consists of the following:

(1) Provision of an additional berthing facility for Pure Car Carrier (PCC) with berth length of 360 m in order to accommodate PCC 22,000 DWT. The water depth of the facility will be -12.0 m deep.
(2) Provision of additional storage yard area with enough space for the loading and unloading of CBUs by use of car trailers.
(3) Provision of a new parking area to handle the vehicles for domestic market (coastal shipping trade).

The total expected area after expansion will be more than 25 ha in order to provide at least 10,000 parking slots for efficient operations.

3. Project Images

Source: MPA Study Team

(1) Existing Car Terminal
(2) Expansion Area
(3) Additional Berth Facility (360 m)

4. Expected Benefits

After the expansion of the existing facility, the following benefits can be expected:

- Expansion of the car terminal capacity would support the automotive production in the region. It would also lead to the promotion of the country's automotive industry;
- Improvement of car terminal facility leads to more efficient and safe operation of CBU handling not only for export/import but also for the domestic market; and
- Integration of domestic sea trade with foreign sea trade would reduce congestion in the port area.

5. Project Cost and Funding Scheme

5.1 Project Cost

The construction cost of the expansion of car terminal is estimated as shown in the table below.

Preliminary Cost Estimate for Expansion of Car Terminal in Kalibaru

	Unit	Cost (IDR billion)	Note
Additional Berth (-12.0 m)	360 m	76	Open type wharf
Dredging / Reclamation	85,000 m^3	14	
Yard Parking Pavement	158,000 m^2	100	Inter-locking concrete block type
Loading / Unloading Area	12,000 m^2	10	Concrete type
		200	

Note: The cost was estimated at 2011 prices. The conversion rate is at USD1.0 = JPY 80.
Source: MPA Study Team

5.2 Funding Scheme

The project is for the expansion of the existing car terminal facilities in Kalibaru. The facility will be operated by a private company established for this car terminal operation under the subsidy of Pelindo II.

- All project funding could be financed by the private sector to improve the existing facility in order to urgently cope with the traffic demand.

	Public	Private	Remarks
Land Acquisition	√		
Construction of Buildings/Facilities/Pavement works		√	
Operations and Maintenance		√	

Source: MPA Study Team

6. Current Status and Implementation Schedule

6.1 Current Status

The handling capacity of the existing terminal is about 250,000 units per year. The throughput in 2010 reached to 200,000 units.

At present, the plan to expand the existing car terminal will utilize the neighboring area of the existing shipyard. The relocation of the terminal is under negotiations between the owner of the shipyard company and Pelindo II.

It was expected that the negotiations will be finalized by the end of 2011. Pelindo II will start the detailed design of the expansion facilities and the necessary EIA study. After the negotiations on relocation, the shipyard area could be converted as an area for the car terminal.

The existing private car terminal operation company is implementing the project under the supervision of Pelindo II in accordance with the following tentative schedule.

6.2 Implementation Schedule

Stage	Target Date
(1) Establishment of the Expansion Development Plan	Completed in 2011
(2) Detailed Design and Procurement of Contractor	Completed in 2012
(3) Survey and Obtain Approval of EIA from MOE	Completed in 2012
(4) Commencement of Construction works	End of 2012
(5) Commencement of Operation	Beginning of 2014

Source: MPA Study Team

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Monitoring of Construction Work.

1. Project Title

C. MULTIPLE GATEWAYS

C.3 Development of New International Airport

(1) Development of New International Airport

2. Project Description

2.1 Objectives

The objective of the project is to immediately construct the new airport in order to start its operations in 2019 to cope with the increasing demand of passenger and aircraft movement at the Soekarno-Hatta International Airport (SHIA).

2.2 Necessity of the Project

At present, SHIA is faced with a tremendous increase in demand of passengers and aircraft movement. The airport can no longer cope with this demand, as the airport capacity is now in saturated condition.

The "Master Plan Study on Multiple-Airport Development for Greater Jakarta Metropolitan Area (MP Study)" analyzes the possibility of coping with this saturated condition by utilizing existing airports in this area.

The capacity of two current runway operations was estimated about 370,000 movements per year in maximum. The actual aircraft movement in 2010 has reached more than 307,000 movements, and it was estimated that its capacity would be saturated in 2014. If the third close runway would be constructed, the runway capacity increased to 470,000 movements would still be saturated between 2015 (397,500 movements) and 2020 (497,050 movements) due to a sharp increase of aircraft movement

The estimated passenger demand at SHIA in 2025 is 87 million and the maximum handling capacity of SHIA is about 60 million under the conditions that four (4) terminal developments will be completed in full-scale. For the development purpose, the passenger traffic demand for the construction of the project shall be the demand of five (5) years after the completion year. Accordingly, an overflow of 27 million passengers (87-60=27) from SHIA will be covered by a new airport from 2019.

The new airport site located at the southern area of Kabupaten Karawang, was selected based on a detailed comparison study among seven alternative sites in the western and eastern parts of the Greater Jakarta Metropolitan Area. In addition, harmonizing development with kertajati which is planned by West Java Province is possible by taking every available step.

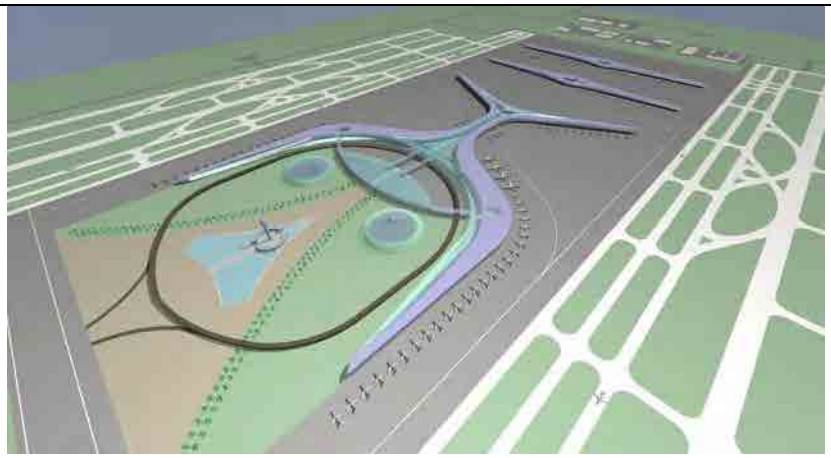
2.3 Project Features

The following development plan was proposed in the Final Report of the MP Study:

(1) Phase 1 : Target year is 2019
   1) Two runways of 3600 m in length with open parallel condition
      (Runway capacity of aircraft movement was estimated at 370 thousand.)
   2) Passenger terminal building will cater to 30 million annual passengers (map).
   3) Cargo terminal
   4) Other facilities for the operations of the international airport

(2) Phases 2 : Target year is 2030
   1) Passenger - 70 map
   2) Aircraft movement - 470 thousand by three runways

3. Project Images



Source: JICA MP Study Team Final Report March 2012.

Image of Master Plan

4. Expected Benefits

The benefits of the new airport development are as follows:

(1) In relation to Multiple Gateway

1) Establishment of a multiple international airport system at the capital city of Indonesia
2) Establishment of an alternative airport functions to SHIA, with a similar capacity near Greater Jakarta Metropolitan Area, in case of emergency at SHIA
3) Creation of demand for international and domestic passengers, and Logistics in the eastern part of JKT and the northeastern part of Bandung will be created by linking with a new seaport

(2) In relation to New Growth Center

1) To cope with the future demand of civil aviation, induced by socio-economic activity in the eastern part of Greater Jakarta Metropolitan Area in connection with SHIA and a new seaport in Cilamaya and in line with the Indonesian Economic Development Corridor (IEDC)/North Corridor, the benefits expected are as follows:
   a) to accommodate the increasing demand of lower cost carriers (LCCs)
   b) to contribute to the establishment of a multi-logistics center
   c) to support the establishment of a cargo-free zone in relation to the encouragement of industrial estates adjacent to a new airport
   d) to accommodate the establishment of a potential aviation industrial estate in the future
2) Development of a core center for international import/export logistics combined with a new airport, new seaport, and new developed industrial estate adjacent to the airport
3) High potential for the formation of a growth center in the eastern part of West Java Province in coordination with the development plan of the West Java Government

(3) Relation to Better Urban Development

1) The potential for the development of multi-functional satellite cities in Greater Jakarta Metropolitan Area in line with the IEDC/North Corridor, are listed below. This is in consideration to the construction of a new airport, a new seaport and relevant urban development in the area.
   a) Expected economic growth in the surrounding satellite cities in the eastern part of Jakarta as a multi-core urban development scheme including the northern part of Bandung
   b) Redistribution of rapid urbanization of Jakarta to other satellite cities in the eastern area
2) Establishment of a new pilot city development scheme as part of the airport city development plan of Indonesia, which depends on the civil aviation activities for socio-economic activities among islands

5. Project Cost and Funding Scheme

5.1 Project Cost

	Phase 1 (IDR billion)	Phase 2 (IDR billion)	Total (IDR billion)
New Airport Construction Cost	35,300	44,600	79,900

Note**:** Cost includes contingencies, consulting services and VAT.
Source: JICA MP Study Team Final Report March 2012.

5.2 Funding Scheme

Government financing, through foreign assistance and funding from the private sectors under the PPP scheme will be applied for the construction and implementation of the new airport.

	Public	Foreign Assistance	Private	Remarks
Land acquisition and site preparation	√			
Construction of new airport	√	√	√	
Construction of access facilities	√	√	√	
Operations and maintenance			√	

Source: "Master Plan Study on Multiple-airport Development for Greater Metropolitan Area" by JICA, 2012

6. Current Status and Implementation Schedule

6.1 Current Status

(1) Current status as of March 2012

The current status on the MP study is as follows:

- Submission of Final Report of MP study after approval by DGCA
- Environmental Impact Assessment (EIA) Study

(2) Implementation Schedule

Stage	Target Date
Completion of EIA Study	September 2012
Feasibility Study on the New Airport	2012-2013
Financial Arrangement	2013
Loan Agreement	2013

Source: "Master Plan Study on Multiple-airport Development for Greater Metropolitan Area" by JICA, March 2012

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Registration of the National Spatial Plan (including regional and local government spatial plan);
- Registration of the Airport Master Plan by MOT;
- Implementation of Feasibility Study and EIA (including assessment for national food security);
- Governmental Guarantee for Work Completion of Public Portion;
- Settlement of Demarcation between Public and Private Sectors; and
- Appointment of well-experienced Project Management Consultant (PMC).

1. Project Title

C. MULTIPLE GATEWAYS

C.4 Improvement of Soekarno-Hatta International Airport(SHIA)

(1) Construction of Soekarno-Hatta International Airport

(b) Expansion of Soekarno-Hatta International Airport

2. Project Description

2.1 Objectives

The objective of the project is to construct the third runway of SHIA in order to cope with rapid increase of air traffic and to maintain safe aircraft operation at SHIA.

2.2 Necessity of the Project

As described in the previous C.3, the existing two runways of SHIA have the capacity of 370,000 movements, which will be saturated around 2014. The construction of the third runway may be expanded to correspond to the recent rapid growth of air traffic demand and safety aircraft operation in SHIA, even though the Karawang new airport will be developed by 2019.

2.3 Project Features

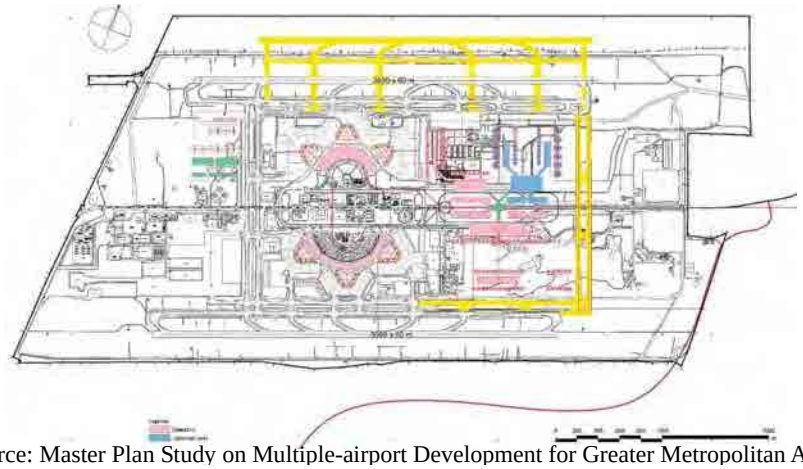
The development plan of the third runway was legislated as “Main plan of Soekarno-Hatta International Airport” by MOT in 2008. JICA Master Plan Team evaluated this plan and proposed some modifications for its effective development and optimal usage. The detail futures are as follow:

1) “Closed parallel” from the second (northern) runway by 500m
2) 2500m Length
3) Around 2,000 household is to be resettled involuntarily

AP II has also their own plan of SHIA expansion called as “Grand Design”. The third runway in the plan is depicted as “open parallel” runway by 1,500m distance from the second runway. Around 10,000 household is to be resettled if it would be materialized, so the “Grand Design”, particularly the part of the plan of third runway development has not been authorized by MOT yet.

3. Project Images

Image of Third Runway ;



Source: Master Plan Study on Multiple-airport Development for Greater Metropolitan Area

4. Expected Benefits

The benefits of the third runway development of SHIA are as follows:

1)Increase of airport capacity of SHIA,

2)Enhancement of air safety of SHIA,

5. Project Cost and Funding Scheme

5.1 Project Cost

Item	Cost (IDR billion)
Construction of Third Runway (Not include land acquisition & compensation)	Approximate 1,000

5.2 Funding Scheme

Under consideration.

6. Current Status and Implementation Schedule

Under consideration.

7. Challenges and Actions to be Taken

・Project preparation including land acquisition and resettlement

1. Project Title

D. LOW-CARBON ENERGY DEVELOPMENT

D.1 Low-Carbon Power Supply Development

(7) Other Renewable and Low-Carbon Emission Power Projects connecting to Java-Bali-Sumatra Power Network

(a) Kamojang Geothermal Power Plant Extension Project

2. Project Description

2.1 Objective

The aim of this project is to meet the increasing power demand in Java-Bali System by utilizing geothermal energy which is abundant in Indonesia.

2.2 Necessity of the Project

(1) Indonesia's target is at least 15% of primary energy to be produced from non-fossil fuel sources in the form of hydroelectric, geothermal and biomass energy in 2025 as declared in the Presidential decree No.5/2006.
Indonesia has 27,000 MW of potential geothermal energy, but only 3% has been been developed in 2009. In the Second National Power Development Program (Fast Track Program II: 2010 -2014), the plan is to provide 3,967 MW of geothermal energy.

(2) Geothermal power generation neither emits greenhouse gases nor contributes to the negative impacts of climate change.

2.3 Project Features

Type of Plant	Geothermal power plant
Place	Laksana village, near Ibun subdistrict capital,in Bandung district, West Jawa
Capacity of Project in Program TAHAP II （As per PLN RUPTL）	1 x 30MW and 1 x 60MW
Project Schedule in TAHAP II （As Per PLN RUPTL）	Construction start: March, 2011 Commencement of operation: (30MW) 2015 (60MW) 2016
Owner and Operation Company	PT. Pertamina Geothermal Energy (PT.PGE)
Main Facilities and Services	1) Steam generator, 2) Geothermal power plant,

Source: MPA Study Team

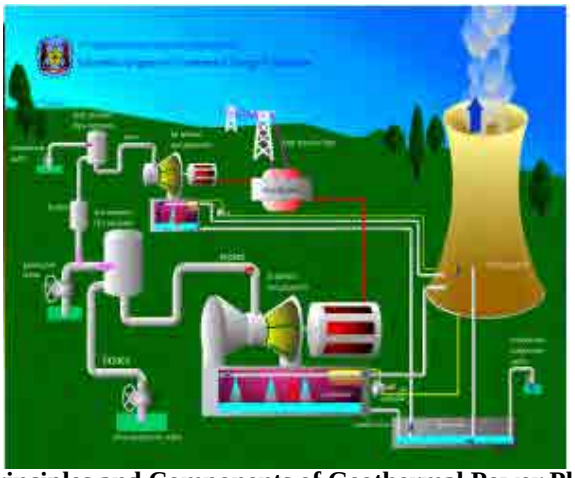
3. Project Images

Source: MPA Study Team

Location of Kamojang Geothermal Power Plant

Source: PGE Annual Report 2010

Existing Kamojang Geothermal Power Plant



Source :PT.PERTAMINA

Principles and Components of Geothermal Power Plant

4. Expected Benefits

The Geothermal Power Generation System in Indonesia is expected to have the following benefits:

(1) Geothermal energy, which is an indigenous energy source in Indonesia. It can be utilized for electric power generation.

(2) Geothermal energy is a renewable source of energy. Once the plant is constructed, the fuel cost remains free.

(3) Geothermal gas is not a fossil-fuel energy source. It contains less greenhouse gases and is a sustainable energy source that does not contribute to climate change.

(4) This plant will promote local investment and improvement of the local economy, through which the increase in employment opportunities is one of the major contributions.

5. Project Cost and Fund Scheme

5.1 Project Cost

Total Project Cost for Units No.5 and 6: IDR 1,420billion

6. Current Status and Implementation Schedule

6.1 Current Status

1) Engineering Services for Kamojang Geothermal Plant expansion completed in 2011
2) The Power Purchase Agreement (PPA) for PLTP Kamojang Unit 5 has been agreed upon between PT Pertamina Geothermal Energy and PT PLN in March 2011.

6.2 Implementation Schedule

Stage	Target Date
(1) Commencement of Operation	2015, 2016

Source: MPA Study Team

1. Project Title

D. LOW-CARBON ENERGY DEVELOPMENT

D.1 Low-Carbon Power Supply Development

(7)Other Renewable and Low-Carbon Emission Power Projects connecting to Java-Bali-Sumatra Power Network

(b) Patuha Geothermal Power Plant No.2 and No.3, and Dieng Geothermal Power Plant

2. Project Description

2.1 Objectives

The project objective is to meet the increasing power demand in Java-Bali network by utilizing geothermal energy which is abundant in Indonesia.

2.2 Necessity of the Project

1) Indonesia's target is at least 15% primary energy to be produced from non-fossil fuel sources, in the form of hydroelectric, geothermal, and biomass energy in 2025 (Presidential Decree No.5/2006).

Indonesia has 27,000 MW of potential geothermal energy, but only 3% has been developed in 2010. In the Second National Power Development Program (Fast Track Program II: 2010 -2014), the plan is to provide 3,967 MW of geothermal energy.

2) Geothermal power generation neither emits greenhouse gases nor contributes to the negative impacts of climate change.

2.3 Project Features

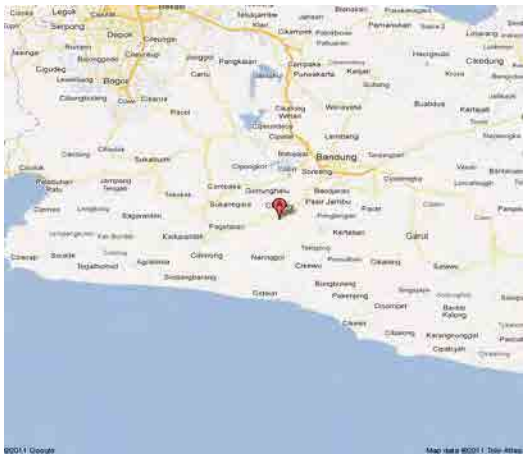
Name of Plant	Patuha Geothermal Power Plant No.2 and No.3
Place	Patuha in Bandung District, West Java
Capacity of Project in Program TAHAP II(As per PLN RUPTL)	Total 120MW (2 x 60MW)
Project Schedule in TAHAP II (As per PLN RUPTL2011-2020)	Commencement of Operation: (2x60MW)2015
Owner and Operation Company	PT. GEO DIPA ENERGY

Source: MPA Study Team

Name of Plant	Dieng Geothermal Power Plant
Place	Dieng Plateau, Central Java
Capacity of Project in Program TAHAP II(As per PLN RUPTL)	Total 110MW (2 x 55MW)
Project Schedule in TAHAP II (As per PLN RUPTL2011-2020)	Commencement of Operation: (2x55MW)2015
Owner and Operation Company	PT. GEO DIPA ENERGY

Source: MPA Study Team

3. Project Images



Location of the Geothermal Power Plant (Patuha)

Location of the Geothermal Power Plant (Dieng)

Source: MPA Study Team

Typical Geothermal Power Plant

4. Expected Benefits

The Geothermal Power Generation System in Indonesia is expected to have the following benefits:

1) Geothermal energy, which is an indigenous energy source in Indonesia, can be utilized for electric power generation.
2) Geothermal energy is a renewable energy. Once the plant is constructed, the fuel cost remains free.
3) Geothermal gas is not a fossil fuel energy source. It contains less greenhouse gases and is a sustainable energy source that does not contribute to climate change.
4) This plant will promote local investment and improvement in the local economy, through increase in employment opportunities.

5. Project Cost and Fund Scheme

5.1 Project Cost

Total Project Cost for Patuha and Dieng: IDR 5,680 billion

6. Current Status and Implementation Schedule

6.1 Current Status

Financial scheme is being finalized by PT GEODEPA.

6.2 Implementation Schedule

Stage	Target Date
(1) Commencement of Operation	2015, 2016

Source: MPA Study Team

1. Project Title

D. LOW CARBON ENERGY DEVELOPMENT

D.1 Low Carbon Power Supply Development

(8) Development of West Java Coal-fired Power Plant with Clean Coal Technology

2. Project Description

2.1 Objectives

The objective of the study is to supply electricity from highly efficient coal-fired power plants to meet the increasing power demand in the Jakarta Metropolitan Area under a PPP or IPP scheme.

2.2 Necessity of the Project

(1) The capacity of Java-Bali System, which supplies electricity to the Jakarta Metropolitan Area, needs to be increased to meet the high power demand growth.
(2) Indonesia also needs to strengthen its effort in addressing world climate change and in mitigating greenhouse gas emissions.
(3) The development of Ultra-Supercritical (USC) coal-fired power plants utilizing Clean Coal Technology (CCT) as the effective measure applied to overcome the issues mentioned above.

2.3 Project Features

(1) The USC Steam Turbine Technology, as compared to the conventional sub-critical pressure steam technology will achieve higher power generation efficiency and will effectively reduce greenhouse gas emissions.
(2) Capacity of 1,000 MW or 2 x 600 MW power plants, with tolerance of ±10% at the transmission end.
(3) Utilization of domestic sub-bituminous coal with relatively low sulphur and ash content.
(4) The project should be implemented under the PPP or IPP scheme. This scheme is the most appropriate structure for private sector involvement in developing major projects in sectors which are vital to the nation. These sectors are protected under Article 33 of the 1945 Constitution of the Republic of Indonesia, wherein it is stated that such sectors must be controlled by the state.

3. Project Images

Potential construction sites are as shown below:

Source: MPA Study Team

The actual construction site should be determined in conjunction with PLN's system planning, however, Bekasi is preferable.

4. Expected Benefits

The large-scale power plant that features the CCT can contribute to a stable and sustainable power supply of the Java-Bali Grid, and can support the government's commitment to reduce greenhouse gas emissions.

5. Project Cost and Fund Scheme

5.1 Project Cost

Preliminary estimate of the project cost for the 1000-1200 MW Coal-fired Power Plant is shown below.

Cost Item	Cost (USD million)	Major Items
EPC Cost	1,300-1,560	Main Plant, Coal Unloading Jetty, Cooling Water System
Non-EPC Cost	50-70	Ash Yard, Housing Colony, Access Roads, Land Costs 500 kV Switchyard
Owner's Cost	90-120	Insurance, Owners' & Lenders' Advisors' cost, Development Costs
Inventories	170-200	Tools & Equipments, Spare Parts, Coal/Oil Inventory
Financing Cost	290-350	Interests during Construction
Total	**1,900-2,300**	

Source: MPA Study Team

5.2 Fund Scheme

Preliminary estimate of the fund scheme is shown below.

Source of Funds		USD Million	Composition	
Equity		475-575	**25%**	
Debt	ECA Facility	855-1,035	**45%**	45%
	Commercial Bank Facility	570-690		30%
Total		**1,900-2,300**	**100%**	

Source: MPA Study Team

6. Current Status and Implementation Schedule

6.1 Current Status

Project preparation needs to be initiated.

6.2 Implementation Schedule

Proposed project schedule is shown below:

Stage	Target Date
Project Preparation	2012-2013
Tender Process	2013
PPA Signing	Second quarter, 2014
Financial Closure	Second quarter, 2015
Construction Commencement	Second quarter, 2015
Start of Commercial Operations	Fourth quarter, 2019

Source: MPA Study Team

7. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Implementation of Feasibility Study; and
- Confirmation of funding scheme.

1. Project Title

D. LOW-CARBON ENERGY DEVELOPMENT

D.2 Development of Smart Grid

(2) Improvement of JABODETABEK Power Supply Quality

2. Project Description

2.1 Objective

The objective of this project is to construct a new 500kV transmission line in the northern corridor of Central and West Java to meet the future power demand increase in the Java island, especially in Jakarta Metropolitan Area.

2.2 Necessity of the Project

1) In Java-Bali Grid, several power plants are planned to be connected to the northern route. The 500 kV Java-Bali transmission line, namely Tanjung Jati Coal-Fired Power Plant, Central Java Coal-Fired Plant, and Indramayu Coal-Fired Power Plant, in addition to the existing plants are already in operation.
2) However, due to the current carrying capacity of the northern route of 500 kV, which is 3,000 MW, it is not possible to connect all the above power plants to the current transmission line. Therefore, in order to deliver power from these plants, the reinforcements of northern 500 kV transmission line route is necessary.

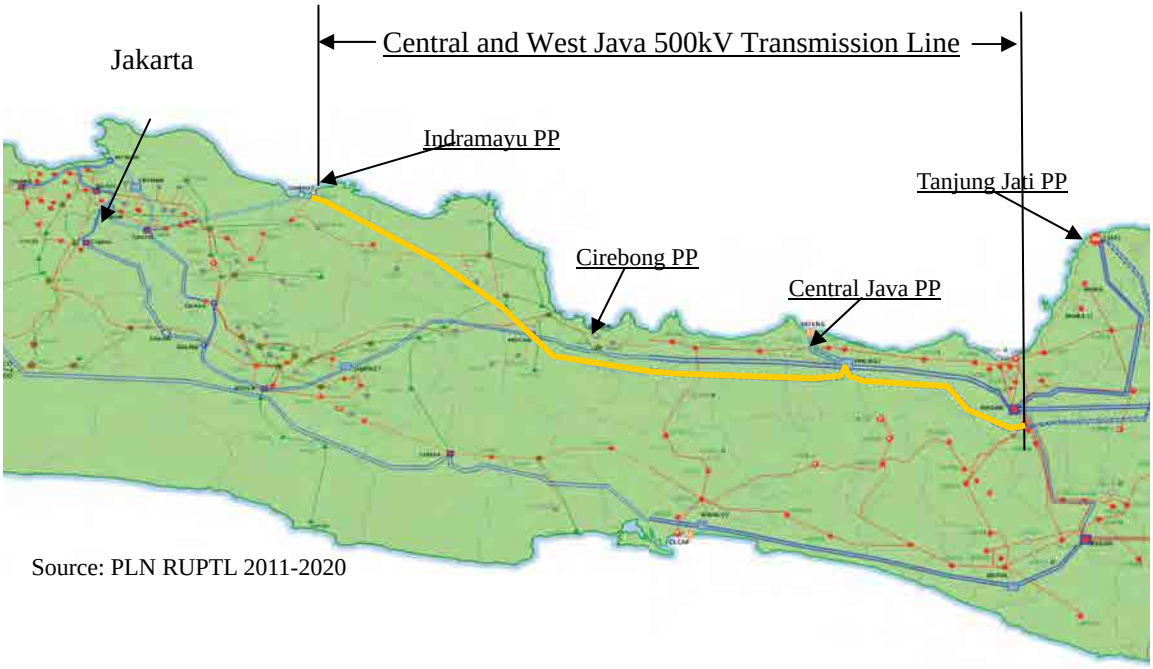
2.3 Project Features

This project is composed of 500 kV transmission lines, 500 kV and 150 kV substation and extension of existing substation as mentioned in the table below.

Kind of Component	Location		Specification		COD
500kV transmission line	From	To	Conductor	Length(km)	
	Tx(Ungaran-Pedan)	Pemalang	2cct, 4xZebra	126	2016
	Pemalang	Mandirankan	2cct, 4xZebra	360	2016
	Mandirankan	Indramayu	2cct, 4xZebra	200	2017
500kV Substation	Pemalang		2x 500MVA		2016
150kV Substation	Pemalang		2x 60MVA		2016
Extension of 500kV substation	Indramayu		10 x CB		2017
	Mandirankan		4 x CB		2016

Source: PLN RUPTL 2011-2020

3. Project Images



Source: PLN RUPTL 2011-2020

Typical 500kV Transmission Line

Source: PLN Web

4. Expected Benefit

1) This 500kV transmission line increases the current transmitting capacity to meet the power generation capacity and improves power supply reliability in the Central and West Java Region.
2) Since the power flow direction is from east (Central Java) to west (Jakarta Metropolitan area), the voltage drop at the receiving end of Jakarta Metropolitan Area will be mitigated.

5. Project Cost and Fund Scheme

Project cost

Total project cost is 4,700 IDR billion.

6. Current Status and Implementation Schedule

6.1 Current Status

1) Feasibility study by JICA: Completed in December 2011

6.2 Implementation Schedule

Stage	Target Date
(1) Land Acquisition and Detail Design	2012
(2) EIA Approval	2012
(3) Award of the Construction Contract	2013
(4) Commencement of Construction	2014
(5) Commencement of Operation	2016,2017

Source: MPA Study Team

7. Challenges and Actions to be taken

The following actions shall be taken for the smooth implementation of the project:

- Commencement of Construction Work; and
- Commencement of Operation.

ANNEX IV

FAST-TRACK PROJECT SHEET

ANNEX IV. FAST-TRACK PROJECT SHEET

1. Project Title

1. International Port

1.1 Improvement and Expansion of Tanjung Priok Port
(Improvement and Expansion of Container Terminal at North Kalibaru)

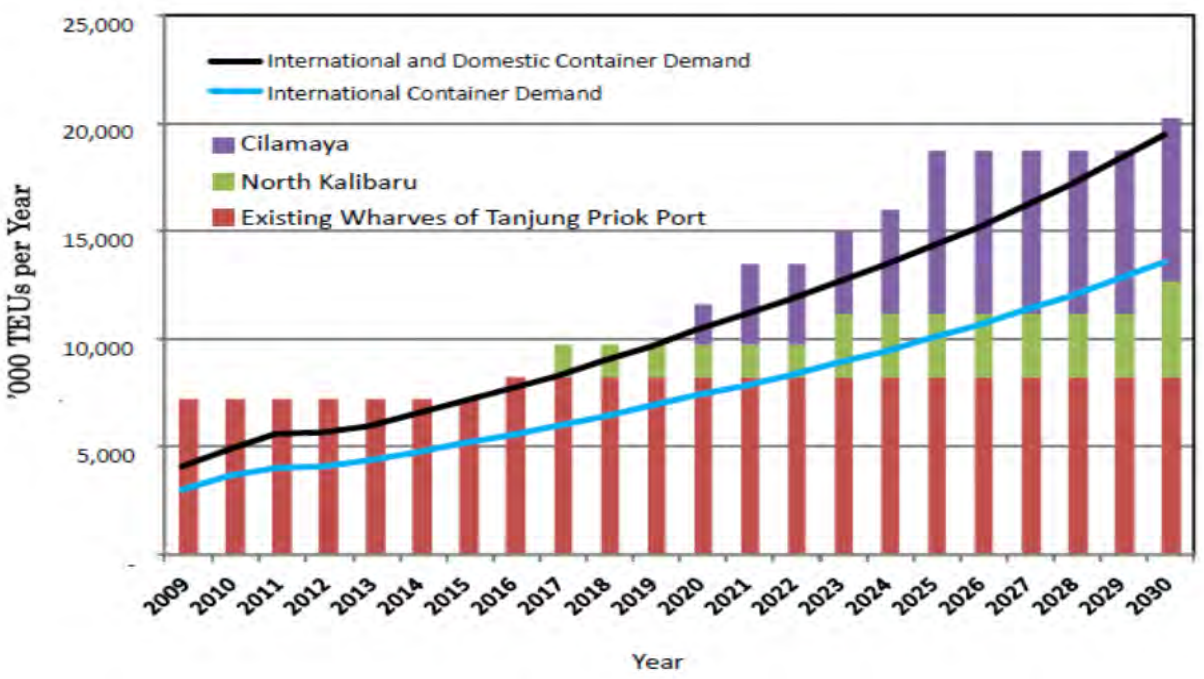
2. Project Description

2.1 Objective

To increase the container handling capacity to meet urgent demands

2.2 Necessity of the Project

The present capacity of international/domestic container throughput through Tanjung Priok Port was estimated at 7.2 million TEU. The actual traffic of containers in 2011 had reached to 5.3 million TEU. The demands would reach full capacity of the present facilities in 2015 with the current traffic growth rate. The container demands in 2020 were estimated at around 10.2 million TEU. The expansion and development of new terminals are urgently required.



Source: The Preparatory Survey on Cilamaya New Port Development Project Interim Report

Balance of Capacity and Demand in International and Domestic Container Handling at Tanjung Priok Terminal and Cilamaya Terminal

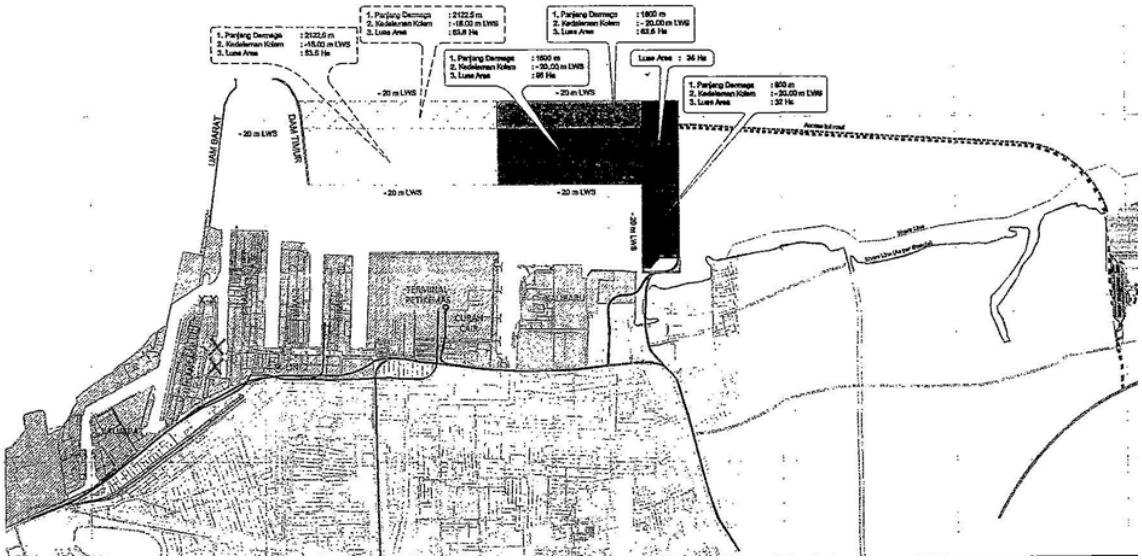
2.3 Outline of the Project

The expansion of the international container terminal at Tanjung Priok is located in North Kalibaru and would handle the volume of up to 4.5 million TEU (Phase 1). The facilities of the new terminals are as follows;

Handling capacity	; 4,500,000 TEU	Berth length	; 2,500m
Depth	; -20.0m	Terminal area	; 128 ha
Port Access Road	; 2,803 m		

The part of this new container terminal (Phase 1 Stage-1) is now to start construction from October, 2012 process.

Handling capacity	; 1,5 million TEU	Berth length	; 900m
Depth	; -20m	Terminal Area	; 32ha
Port Access Road	; 2,803 m		



Development Plan of North Kalibaru Terminals in Tanjung Priok Port to 2024-2030
Source; Modified Master Plan of Tanjung Priok Port by DGST, MOT

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	24,000	
Public	-	
Government of Indonesia	-	
Foreign Assistance	-	
Total	24,000	

Source: Perindo II at 6th Technical Committee

3.2 Funding Scheme

The finance will be arranged by Perindo II.

4. Current Status and Implementation Schedule

4.1 Current Status

- JICA's master plan study on a sea port in the metropolitan area was completed in March 2011.
- The Ministry of Transportation (MOT) of the Government of Indonesia (GOI) authorized Tanjung Priok Master Plan in April 2011 by Ministerial Decree.
- Perindo II has been assigned as the developer of "North Kalibalu Development" by Presidential Decree on April 5 2012.
- Revised Tanjung Priok Master Plan was issued on June 13, 2012 by MOT.
- Construction Permission was provided to Perindo II by DGST on June 14, 2012. The area of the development is Phase 1 of North Kalibaru Development.

4.2 Implementation Schedule

(North Kalibaru Container Terminal (Phase 1-Stage 1))

Stage	Target Date
(1) Commencement of Construction	October 2012
(2) Commencement of Operation	2014

Source: MPA Study Team

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Conduct DED and EIA Study by Perindo II;
- Commencement of Construction Work

Next Key Actions to be taken

Key Actions	Target Date
Commencement of Construction Work (Phase 1-Stage 1)	October 2012
Commencement of Operation (Phase1-Stage 1)	End of 2014

Source: MPA Study Team

1. Project Title

1. International Port

1.2 Development of a New International Port
(Development of a New International Port/ Construction of Access Road to New Cilamaya Seaport)

2. Project Description

2.1 Objective

To develop a new international port at Cilamaya Coast in West Java Province

2.2 Necessity of the Project

The container demands were estimated at around 10.2 million TEU in 2020, and 19.4 million TEU in 2030. In order to meet the rapid increase of demand and to case traffic congestion around the JABODETABEK area, development of a new port in addition to the existing port is urgently required. Among the several potential candidate sites for a new port, Cilamaya was selected as the most suitable site for the new port development by taking into consideration the spatial plans, coastal line changes, traffic congestion, distance from consumption/ industrial areas, etc (according to the master plan study on port development and logistics in Greater Jakarta Metropolitan Area).

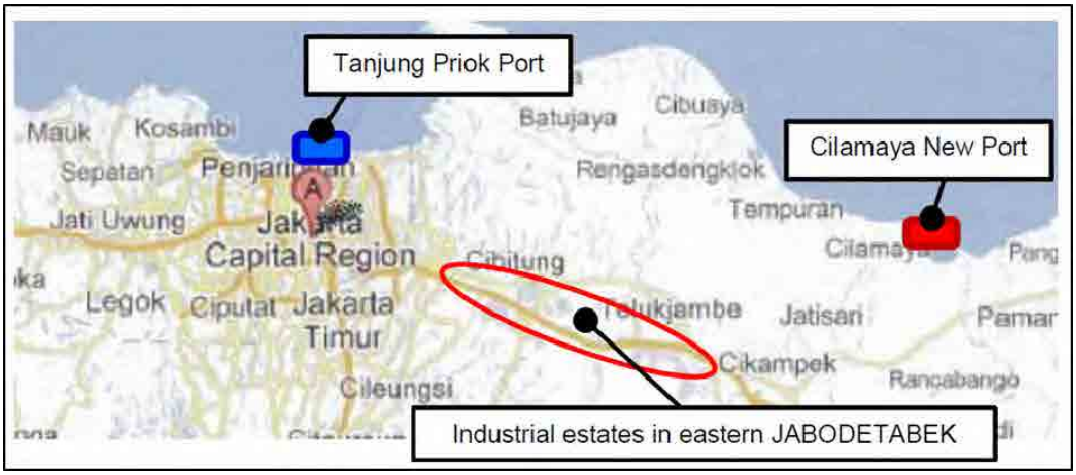
2.3 Outline of the Project

The new international port is planned to be developed on offshore reclaimed land located in Cilamaya. The facilities of the new container terminal are as follows:

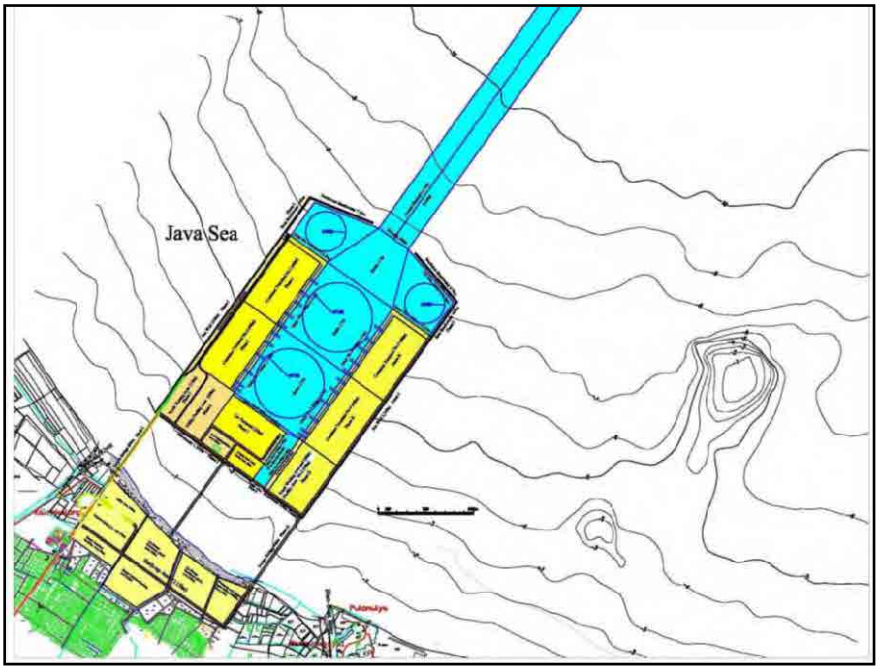
Handling capacity	; 7,500,000 TEU	Berth length	; 4,320 m (16 berths)
Depth	; -12.5~-17m	Terminal Area	; 268 ha
Port Backup area	; 208 ha		

Access road ; 30.6km (from the existing tollway of Jakarta - Cikampek, elevated road)
Dredging works of the access channel and basin ; about 47.6 million m^3
Breakwater/seawall construction; about 4.7 km long
Access Bridge from the coastal line to the off shore terminal ; 800m length with 4 lanes

Phase 1 (target by 2020)	Target of Capacity: 3.75 million TEU
Breakwater construction, dredging works for access channel and basin, offshore land reclamation works, terminal on land facilities, access road/bridge connection, port back up area development and quay wall construction and Revetment under the wharf construction for Phase 2 are carried out. Quay wall for container terminals construction; 2,160m long (depth -17.0m) Quay wall of car terminal, multipurpose berth; 690m long and Ro-Ro berth ; 250m (depth -12.5m) Oil import terminal with storage tank yard reclamation; 230m (depth -12.5m) Port Service wharf; 350m (depth -6.0m)	
Phase 2 (target by 2025)	Target of Capacity: 3.75 million TEU (7.5 million TEU in total in Cilamaya, 20.2 million TEU in total together with Tanjung Priok)
Extension of quay wall for additional container terminals; 2,160m and necessary additional on land facilities will be carried out. Quay wall expansion: 2,160m in length (depth -17.0m), Port service wharf 630m (depth -6.0m)	



Source: Cilamaya Feasibility Study Team



Source: Cilamaya Feasibility Study Team

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Development of New International Port Phase 1 & 2

Fund Source	Cost (IDR billion)	Remarks
Private	6,500	
Public	8,400	
Government of Indonesia	1,700	
Foreign Assistance	6,700	
Total	14,900	

Source: Cilamaya New Port Development Study Team

Construction of Access Road to New Chilamaya Seaport

Fund Source	Cost (IDR billion)	Remarks
Private	5,800	
Public	100	
Government of Indonesia	100	
Foreign Assistance	0	
Total	5,900	

Source: MPA Study Team

3.2 Funding Scheme

Development of New International Port

PPP scheme is to be introduced for construction, operations, and maintenance of the infrastructure portion. The following assortment is proposed in the Master Plan. Final scheme of PPP will be determined by the on-going feasibility study.

Item	Public	Private
Land acquisition	√	
Berthing facilities, pavement, and other facilities		√
Dredging Works	√	
Breakwater/revetment/seawall and utilities	√	

Source: Cilamaya New Port Development Study Team

Construction of Access Road to New Cilamaya Seaport

Project scope and funding scheme are to be proposed by on-going Feasibility Study.

4. Current Status and Implementation Schedule

4.1 Current Status

(1) MP3EI

The Master Plan for Acceleration and Expansion of Economic Development of Indonesia (MP3EI) recognizes the importance and urgency of this project for connectivity of economic corridor in the following statements:

- Advancing the Greater Jakarta area in the Java Economic Development Corridor can be done by building a new possible port in Cilamaya.
- The development and improvement of seaports in Cilamaya will expedite the flow of goods both intra- and inter–corridors, which are expected to accelerate the realization of developing corridors and to spread the density of economic activities in the western parts of Java.

(2) Port Master Plan

- The JICA supported master plan study on a sea port in the metropolitan area is completed in March 2011.
- The Ministry of Transportation of the GOI authorized the inclusion of the Cilamaya new port development plan into Tanjung Priok Master Plan in April 2011.

4.2 Implementation Schedule (Phase 1 targeted in 2020)

Stage	Target Date
(1) Master Plan	Completed in April 2011
(2) Initial Survey of the Planned Access Road	Last quarter of 2011
(3) Feasibility Study and EIA	January 2012 to end of 2012
(4) EIA approval	End of 2013
(5) Detailed Design of port facilities	2013-2014
(6) Commencement of PQ of contractor	2014
(7) Commencement of tender	2014
(8) Commencement of Construction (Access Road)	2017-2019
(9) Commencement of Construction (Port)	2015-2019
(10) Commencement of Operation	2020

Source: MPA Study Team

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

Development of New International Port

- Feasibility Study and Preparation of EIA;
- Listing on Blue Book and Finance Request (Engineering Services);
- Decision regarding the Executing Agencies of the Port;
- Settlement of Demarcation between Public and Private;
- Confirmation of Alignment of Access Road;
- Execution of Land Acquisition; and
- Government Guarantee for Work Completion of Public Portion.

Construction of Access Road to New Chilamaya Seaport

- Determination of the Executing Agency;
- Determination of Funding Scheme;
- Confirmation of Alignment of Access Road;
- Registration of the National Spatial Plan;
- Execution of Land Acquisition and EIA; and
- Listing on Blue Book (if necessary).

Next Key Actions to be taken

Key Actions	Target Date
Feasibility Study and Preparation of EIA	January 2012-February 2013
Listing on Blue Book and Finance Request (Engineering Services)	October 2012
Commencement of Construction	2015 (or later)
Commencement of Operation of Sea Port	2020 (or later)

Source: MPA Study Team

1. Project Title

2. Upgrading the Industrial Area to the East of Jakarta

2.1 Smart Community (including a pilot project for the Smart Grid)

2. Project Description

2.1 Objective

Major objectives are summarized as follows:

(1) Stabilization of the whole industrial estate power system independent of individual factories,

(2) Reduction of CO_2 by installation of renewable energy systems, and

(3) Energy conservation and peak shift by energy management system.

2.2 Necessity of the Project

Industrial parks in the east of Jakarta contribute a major part of the domestic industrial production such as electronics and automobiles production. However, sudden power outage and continuous low voltage situations cause damage to the quality of production and system operations.

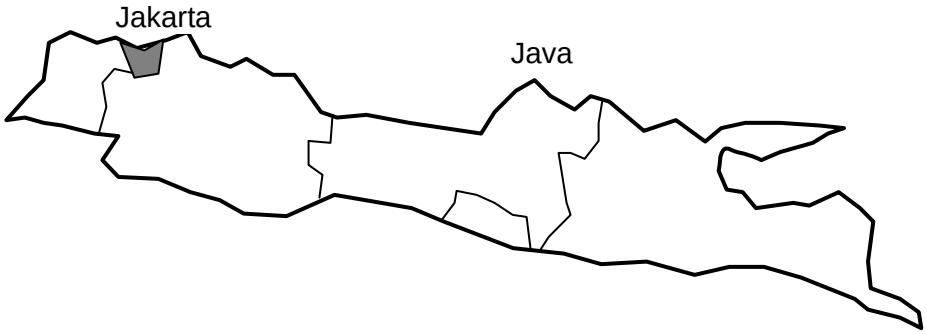
In order to solve these present issues, smart-grid technologies would be introduced for stable power supply combined with usage of renewable energy and improvement of energy management systems.

2.3 Outline of the Project

This project aims to introduce smart-grid technologies, and its concepts of “Smart Community”.

2.4 Project Features

Main features of the smart-grid system will be formulated in the Feasibility Study. A pilot project in Java will be identified in the process of the study.



Source: MPA Study Team based on interview to NEDO

Location of the Project

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	300	
Public	-	
Government of Indonesia	-	
Foreign Assistance	-	
Total	300	

Source: MPA Study Team

3.2 Funding Scheme

This project will be implemented by private sector.

4. Current Status and Implementation Schedule

4.1 Current Status

Preparatory survey was conducted in August 2010 and completed in February 2011 by NEDO. Conduct of the feasibility study commenced in October 2011.

4.2 Implementation Schedule

Stage	Target Date
(1) Preparatory Survey	Completed
(2) Feasibility Study	Started in October 2011
(3) Pilot Project (Demonstration Project)	Started after Feasibility study (If feasible)

Source: NEDO

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- After reaching agreement on MOU, demonstration project will be launched.

Next Key Actions to be taken

Key Actions	Target Date
Once required conditions between the two countries have been agreed, demonstration project will be commenced.	2012
Demonstration project	2012-2015(tentative)

Source: NEDO

1. Project Title

2. Upgrading the Industrial Area to the East of Jakarta

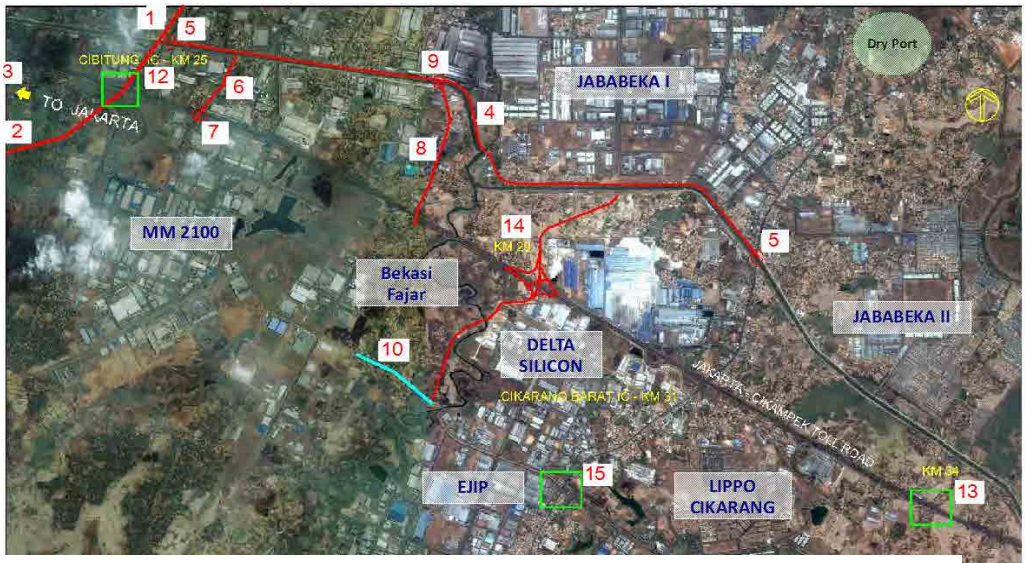
2.2 Improvement of Road Network within the Industrial Area to the East of Jakarta
（Improvement of Road Network in JABODETABEK-Improvement of Road Network within the Industrial Area to the East of Jakarta）

2. Project Description

2.1 Objective

This project aims to alleviate traffic congestion in Cikarang Industrial Area through the improvement of road networks by constructing new roads, flyovers/underpasses, and interchanges, and upgrading of existing roads.

2.2 Project Features



Source: “Preparatory Survey for Metropolitan Arterial Road Improvement Project” by JICA

Location Map of the Project

Improvement of Road in Cikarang Industrial Area

No	Project	Party in Charge
1,2,3	Construction of Cibitung (Cikarang) - Cilincing Toll Road Cimanggis - Cibitung Toll Road Tanjung Priok Access Toll Road	PU, Private(Concessionaire)
(4,5,6,7,8,9)*	Widening of West Tarum Inspection Road (Kali Malang Road) Improvement of Intersection and construction of West Tarum Inspection Road Upgrading of Bali Road at the north side of Toll Road Construction of a Bridge on Bali Road over Toll Road Improvement of Imam Bonjol-4 Road Replacement of River bridge on Imam Bonjol-4 Road	Bekasi,(started construction No.4 partially from west end), and PU
10	Construction of Road between MM-2100 - Bekasi Fadjar	Bekasi Fadjar
11	Construction of Road between Lippo Cikarang - Delta Mas	Lippo Cikarang and JABABEKA
12	Expansion of capacity of Cibitung Toll Gate	Jasa Marga
13	Construction of New Inter Change at 34 km of Toll Road	Jasa Marga, Lippo Cikarang, Jababeka
14*	Construction of Dry Port Access Road a new interchange at Km29 of Toll Road	PU/JABABEKA/Bekasi Fajar/EJIP/MM2100
15*	Construction of Cikarang – Cibarusah/MH. Thamrin Underpass Development	PU/Government of West Java and Region
16	Construction of New Road Development connect to Primer Artery Road	Government of Bekasi Regency

*:Preparatory study supported by JICA
Source: “Preparatory Survey for Metropolitan Arterial Road Improvement Project” by JICA 2011

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	-	
Public	200	
Government of Indonesia	50	
Foreign Assistance	150	
Total	200	

Note: The project cost includes price escalation and contingency.
Source: MPA Study Team

3.2 Funding Scheme

The project will be implemented under a public fund scheme.

4. Current Status and Implementation Schedule

4.1Current Status

- In order to ease road traffic congestion, a memorandum of understanding (MOU-2006) was signed in 2006 among the Ministry of Public Works, Government of West Java Province, Government of Bekasi Agency, PT. Jasa Marga (Persero) and seven industrial estates in Cikarang area to specify the projects by responsibility of each party. As of November 2011, some projects have not yet been completed by the responsible party because of budget constraints, land acquisition problems, etc. A revised memorandum of understanding was signed in February 2012. MoU was concluded among the concerned industrial parks.
- The feasibility study team of JICA for the "Metropolitan Arterial Road Improvement Project" has done the basic design and cost estimate for some of the uncompleted projects in the MOU-2006 and new additional effective projects in this area too.
- The JICA Feasibility Study Team has also done a transportation study in this area and verified the effectiveness of several proposed projects, especially clarified the importance of Dry-port access to IC-29km with north-south non-toll access road (No.14), and increase the number of toll gates at IC-25km (No.12).

4.2 Implementation Schedule

Stage	Target Date
(1) Feasibility study for Loan Preparation	January 2012
(2) Availability of Foreign Loan	March 2012
(3) Procurement of Consultant	October 2012
(4) Commencement of Construction	First quarter of 2014 (tentative)

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Approval of EIA;
- Listing on Blue Book and Finance Request; and
- Commencement of Construction Work.

Next Key Actions to be taken

Key Actions	Target Date
Approval of EIA	October 2012
Listing on Blue Book and Finance Request	October 2012
Commencement of Construction Work	First quarter of 2014

Source: MPA Study Team

1. Project Title

3. Mass Transportation Network

3.1 Jakarta Mass Rapid Transit (MRT): N-S I, N-S II, E-W

2. Project Description

2.1 Objective

To introduce the Mass Rapid Transit System in Jakarta

2.2 Necessity of the Project

DKI Jakarta has made efforts to improve the quality of public transportation service. In 2004, the first Transjakarta Busway operation started for section between Blok M and Kota. A number of corridors have started to add up to Corridor 8. This was the first step to improve public transportation services. However, the busway system has limited capacity and lower speed compared to a rail-based mass rapid transit system due to its fleet size and stopping time at intersections.

It is thus recommended to introduce a rail-based mass rapid transit system on the corridors where high passenger demand is expected. Several mass rapid transit corridors are planned in the revision of the SITRAMP transportation Master Plan.

2.3 Outline of the Project

The first priority corridor proposed in the master plan is the Lebak Bulus - Bundaran HI - Kampung Bandan corridor is the Jakarta Mass Rapid Transit North - South Line. The second priority corridor is the East - West Line. The North - South Line is divided into two sections, N-S Phase I and N-S Line Phase II.

2.4 Project Features

(1) N-S Line Phase I (Lebak Bulus – Bundaran HI)
- Length: 15.7 km
- Stations: 6 underground and 7 elevated
- Depot: at Lebak Bulus
- Project Cost: Approximately JPY 157 billion
- Commencement of service (expected): 2016

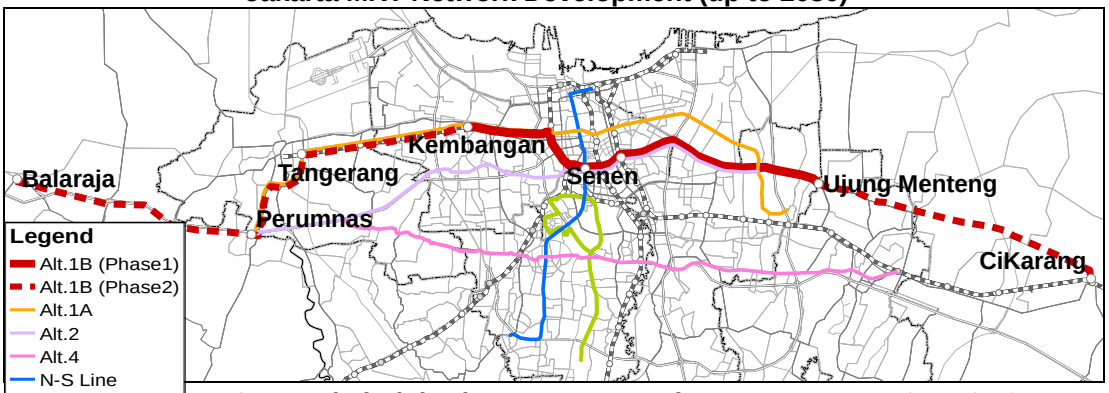
(2) N-S Line Phase II (Bundaran HI – Kampung Bandan)
- Length: 7.8 km
- Station: 7 underground and 1 at grade
- Depot: at Kampung Bandan
- Commencement of service(expected): 2018

(3) E - W Line

Candidate Routes:
1) Alternative 1A: Balaraja – Karawaci – Kalideres – Kembangan – Sawah Besar – Pulo Gebang
2) Altenative 1B: Balaraja – Karawaci – Kalideres – Kembangan – Thamrin – Senen – Ujung Menteng – Cikarang
3) Alternative 2: Balaraja – Karawaci – Panunggangan Utara – Karang Tengah – Tanah Abang – Thamrin – Senen – Ujung Menteng – Cikarang
4) Alternative 4: Balaraja – Karawaci – Panunggangan Utara – Kebayoran – Sisingamangaraja – Iskandar Dinata – Kali Malang – Bekasi

1st Priority Section: Alt. 1B phase 1 (Kalideres – Ujung Menteng)

Jakarta MRT Network Development (up to 2030)



Source: Jabodetabek Urban Transportation Policy Integration Project (JUTPI), 2011

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	-	
Public	33,300	
Government of Indonesia	5,000	
Foreign Assistance	28,300	
Total	33,300	

Note: The project cost includes price escalation and contingency.
Source: MPA Study Team

3.2 Funding Scheme

The project will be implemented under a public fund scheme.

4. Current Status and Implementation Schedule

4.1 Current Status

(1) N - S Line Phase I (Lebak Bulus – Bundaran HI)
- Under tendering process

(2) N - S Line Phase II (Bundaran HI – Kampung Bandan)
- Preparatory Survey and LARAP will be completed by June 2012.

(3) E - W Line
- Preparatory Survey has been started in April 2011.
- The 1st Priority section was proposed as Alternative 1B Phase 1 based on the demand forecast and technical/ environmental aspects, and by reviewing the candidate routes proposed in the Revision of SITRAMP transportation M/P and Preparatory Survey.

The MRT projects are listed in Blue Book and MP3EI, while construction of N-S Line Phase II and E-W has not been included in Blue Book (will be listed on the revised version of Blue Book in 2012).

4.2 Implementation Schedule for N-S Phase I

Stage	Target Date
(1) Selection of Contractors for Civil Works	Fourth quarter of 2012
(2) Commencement of Construction	Fourth quarter of 2012
(3) Selection of Contractors for System and Rolling Stock	First quarter of 2013
(4) Commencement of Operation	Fourth quarter of 2016

Source: MPA Study Team

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

For N-S Line

- N-S I : Completion of Land Acquisition
- N-S I : Contract signing of construction works, rolling stocks and E&M
- N-S II: Listing on Blue Book and Finance Request for construction
- N-S II: Approval of LARAP and Land Acquisition
- Commencement of Operation N-S I (2016) and N-S II (2018).

For E-W Line

- Listing on Blue Book and Finance Request for ES and Construction for E-W
- Coordination among Relevant Government Entities regarding Implementation Structure
- Commencement of Operation (2020)

Next Key Actions to be taken

Key Actions	Target Date
Listing on Blue Book (N-S I construction, N-S II E/S, E-W E/S) and Finance Request for E-W E/S	October 2012
<N-S I> (1) Contract Signing of Construction Works	Fourth quarter of 2012
(2) Contract Signing of Rolling Stocks and E&M	Second quarter of 2013
(3) Commencement of Operation	Fourth quarter of 2016
<N-S II> (1) Approval of LARAP and Land Acquisition	October 2012
(2) Contract Signing of Engineering Services Consultant	Third quarter of 2013
(3) Listing on Blue Book and Finance Request for Construction for N-S II	2013
(4) Commencement of Operation	2018
<E-W> (1) Listing on Blue Book and Finance Request for Engineering Services	October 2012
(2) Coordination among relevant government entities regarding implementation structure	October 2012
(3) Contract Signing of Engineering Services Consultant	Third quarter of 2013
(4) Commencement of Operation	2020

Source: MPA Study Team

1. Project Title

3. Mass Transportation Network

3.2 Improvement of the JABODETABEK Commuter Railway System
(JABODETABEK Railways Capacity Enhancement Project (Phase I))

2. Project Description

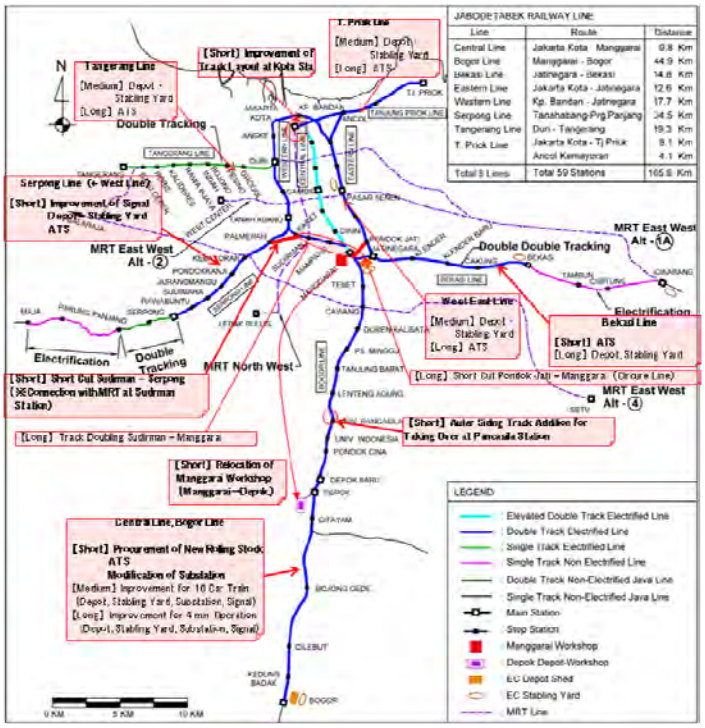
2.1 Objective

To improve the present commuter railway system in JABODETABEK.

2.2 Necessity of the Project

Traffic congestion in the JABODETABEK area causes significant economic loss. In addition, this traffic congestion problem as well as environmental pollution were predicted to get worse due to the increase of traffic demand and the number of cars. Therefore, the Indonesian government is implementing a series of measures such as construction of bus ways, improvement of the JABODETABEK railway system, and implementation of a management system for general buses. However, the share of public transportation has been decreasing.

Though, railway trips shared only 2% of transportation in the JABODETABEK area (person trip survey in 2002, SITRAMP), railway is a main transportation system in the area. Therefore, network expansion and improvement of service level of existing JABODETABEK railways along with the ongoing Jakarta MRT project are required.



2.3 Outline of the Project

Procurement of rolling stock and improvement of railway facilities by eliminating the obstacles regarding the railway operations for capacity enhancement.

2.4 Project Features

(1) Stage I

- Procurement of Rolling Stock,
- Safety system (ATP) Installation on Bogor Line and Bekasi Line,
- Improvement of Power Supply, Signalling, and Communication,
- Improvement of Stations, and
- Depok Workshop Construction.

(2) Stage II

- Safety system (ATP) installation on Serpong Line, Tangerang Line, West Line and East Line,
- Improvement of Power Supply, Signalling, and Communication,
- Improvement of Stations, and
- Short cut between Palmerah and Karet.

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	-	
Public	8,300	
Government of Indonesia	1,400	
Foreign Assistance	6,900	
Total	8,300	

Note: The project cost includes price escalation and contingency.
Source: MPA Study Team

3.2 Funding Scheme

It is envisaged that the project will be implemented under a conventional fund scheme.

4. Current Status and Implementation Schedule

4.1 Current Status

- The conducted of preparatory survey was started in August 2010 and completed in March 2012.
- Part of the project was listed in the Blue Book for the procurement of Electric Rail Cars.

4.2 Implementation Schedule

Stage	Target Date	
	Phase I	Phase II
(1) Preparatory Survey	Completed in March 2012	
(2) L/A	March 2012	2013
(3) Selection of Consultant	Third quarter of 2012	2013
(4) Announcement of Tender	First quarter of 2013	2014
(5) Commencement of Construction	Fourth quarter of 2013	2014
(6) Commencement of Operation	Fourth quarter of 2018	2020

Source: MPA Study Team

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Listing on Blue Book and Finance Request;
- Acceleration of Land Acquisition for Depok Workshop Area; and
- Commencement of Construction.

Next Key Actions to be taken

Key Actions	Target Date
Listing on Blue Book and Finance Request	October 2012
Commencement of Construction (Phase 1)	Fourth quarter of 2013

Source: MPA Study Team

1. Project Title

4. Road Network

4.1 Improvement of Road Network in JABODETABEK Area
(Improvement of Road Network in JABODETABEK-Enhancement of Road Network Capacity in JABODETABEK)

2. Project Description

2.1 Objective

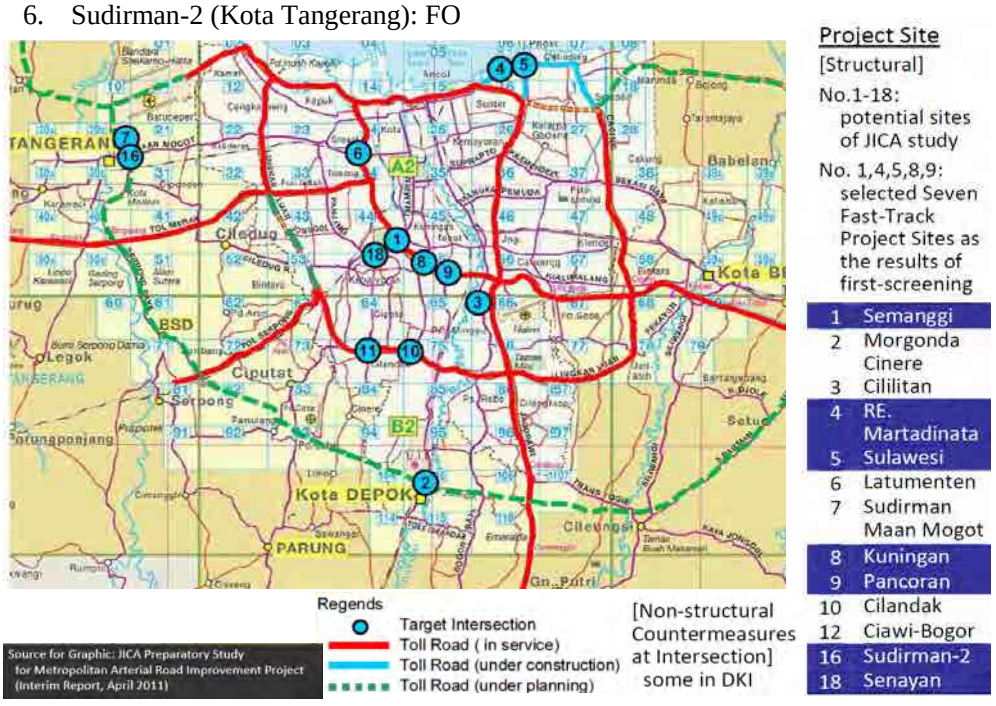
Traffic congestion is one of the main problems in the JABODETABEK area as it was identified in the MP3EI. Such traffic congestion causes tremendous economic loss in the region.

This project aims to alleviate traffic congestion at heavily congested intersections and railway crossings on major road networks in JABODETABEK, through the realization of construction of grade separation and other at-grade countermeasures. In addition, immediate solutions such as improvement of traffic lane arrangement, modification of traffic islands, and installation of traffic lights would contribute to the alleviation traffic congestion.

2.2 Project Features

[Structural Countermeasures]: Flyover (FO), Underpass (UP) and At-grade
(Sub-projects in the JABODETABEK areas that were selected for implementation preparation.)

1. Semanggi (DKI Jakarta): At-grade
2. RE. Martadinata (DKI Jakarta): FO
3. Sulawesi (DKI Jakarta): FO
4. Kuningan (DKI Jakarta): UP
5. Pancoran (DKI Jakarta): FO
6. Sudirman-2 (Kota Tangerang): FO



Source: "Preparatory Survey for Metropolitan Arterial Road Improvement Project" by JICA 2011

[Non-structural Countermeasures for Mitigation of Traffic Congested Intersections]

Some intersections will be the target for carrying out "Soft Measurement", such as adjustment of traffic signal controls and revision of traffic separation/ lane marking, In order to ease the current traffic congestion.

- Model project: 4 intersections (Harmoni, Melawai, Cikini, and Sawah Besar)
- Main project: 30 intersections

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	-	
Public	1,900	
Government of Indonesia	600	
Foreign Assistance	1,300	
Total	1,900	

Note: The project cost includes price escalation and contingency.
Source: MPA Study Team

3.2 Funding Scheme

The scope of the project will be finalized in accordance with the results of "Feasibility Study on Metropolitan Arterial Road Improvement Project".

4. Current Status and Implementation Schedule

4.1 Current Status

[Structural Countermeasures]: Flyover (FO), Underpass (UP) and At-grade

The JICA Feasibility Study Team for the "Metropolitan Arterial Road Improvement Project", in coordination with the central government, has selected the subprojects, and conducted basic design, cost estimate, feasibility study, and LARAP (Land Acquisition and Resettlement Action Program).

[Non-structural Countermeasures for Mitigation of Traffic Congested Intersections]

Currently PU and DKI have started discussing, with each other the project details, such the target intersections and countermeasures.

4.2 Implementation Schedule

[Structural Countermeasures]

Stage	Target Date
(1) Feasibility Study for Loan Preparation	January 2012
(2) Foreign Loan will be Available	March 2012
(3) Procurement of Consultant	October 2012
(4) Commencement of Construction	First quarter of 2014

Source: "Preparatory Survey for Metropolitan Arterial Road Improvement Project" by JICA 2012

[Non-structural Countermeasures]

Stage	Time
(1) Survey, Basic Design, and Cost Estimation for 4 Model Intersections	Completed in September 2011
(2) Seminar on Non-structural Countermeasure for 4 Model Intersections	November of 2011
(3) Commencement of Construction for 4 Model Intersections	Second quarter of 2012
(4) Commencement of Operation for 4 Model Intersections	End of 2013
(5) Survey, Basic Design, and Cost Estimation for Main Intersections.	First quarter of 2013

Source: MPA Study Team

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Approval of EIA;
- Listing on Blue Book and Finance Request; and
- Commencement of Construction.

Next Key Actions to be taken

Key Actions	Target Date
Approval of EIA	October 2012
Listing on Blue Book and Finance Request	October 2012
Commencement of Construction	End of 2013

Source: MPA Study Team

1. Project Title

5. Airport and Related Infrastructure

5.1 Construction of Access Railway to Soekarno - Hatta International Airport

2. Project Description

2.1 Objective

To provide access to Soekarno-Hatta International Airport (SHIA) with reliable and fast railway system

2.2 Necessity of the Project

The current problem of SHIA is limited access from and to the airport. The current access is only through road and highway. The limitation of road access is often exhibited by problems such as accidents and flooding.

Therefore, the development of airport access railway is definitely required to function as alternative access to and from the airport. In addition, the airport access railway is expected to reduce the number of personal transports to and from the airport, thus reducing traffic congestion and air pollution.

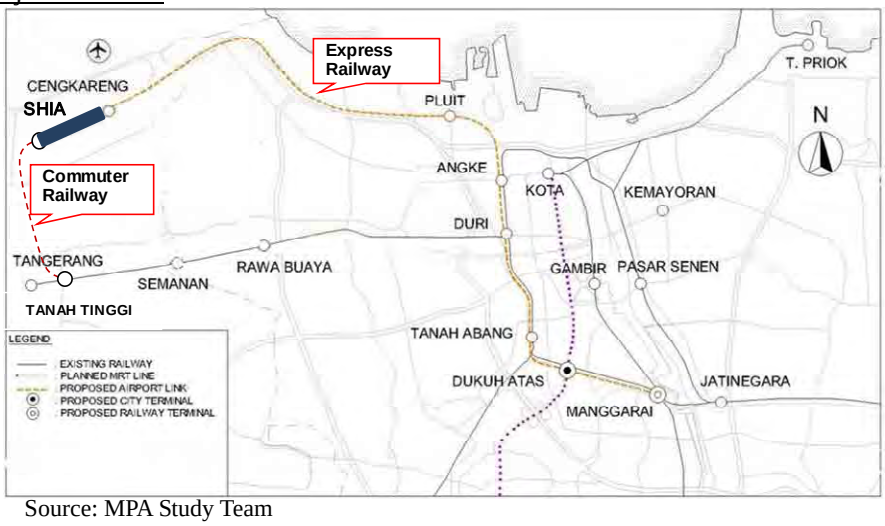
2.3 Outline of the Project

(1) Express Railway: Express service on a dedicated elevated railway line from Manggarai Station to SHIA through Sudirman Station, Tanah Abang Station, Anke Station, and Pluit new station. The total length 33 km. SHIA is linked with Jakarta City Air Terminal at Sudirman Station.

(2) Commuter Railway: Commter Service using the existing Tangerang Line throug Tanah Tinggi Station. A 7 km extention of the line is required to reach SHIA.

Regarding the implementation of the "Access railway to Soekarno-Hatta International Airport", as listed in the PPP Book, investment for the project will be done under PPP scheme. The capital investment for infrastructure, E&M cost and land acquisition shall be borne by the central government. O&M costs of all railway facilities and equipment, and capital investment for rolling stocks shall be borne by the railway operator.

2.4 Project Features



Source: MPA Study Team

Project Location Map

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	6,300	
Public	6,200	
Government of Indonesia	6,200	
Foreign Assistance	0	
Total	12,500	

Source: MPA Study Team

3.2 Funding Scheme

Expressway Railway Service

The investment for the project will be done under the PPP scheme.

Item	Public	Private
Land acquisition	√	
Construction and E & M installation	√	
Operation and Maintenance		√

Source: MPA Study Team

Commuter Railway Services

Direct appointment was issued to National Consortium. Feasibility Study and Detailed Design are on-going.

4. Current Status and Implementation Schedule

4.1 Current Status

- The Feasibility Study for Express Railway was completed by PT. Railink in March 2008. PT. Railink established a Joint Venture with PT. Kereta Api (Persero) and PT. Angkasa Pura II (Persero) to serve the Airport Rail Link Service.
- The Express Railway was listed in the PPP Book in 2011.
- A Pre-Feasibility Study for the Soekarno-Hatta International Airport (Express Railway) to Manggarai Rail Link PPP Project has been started in April 2012 and planned for completion in 2013.

4.2 Implementation Schedule for Express Railway

Stage	Target Date
(1) Pre-Qualification	Completed in 2009
(2) Tender Announcement	Third quarter of 2014
(3) Commencement of Construction	Third quarter of 2015
(4) Inauguration of Service	Fourth quarter of 2020

Source: MPA Study Team

4.3 Implementation Schedule for Commuter Railway

Stage	Target Date
(1) Direct Appointment to the National Consortium	Third quarter of 2011
(2) Feasibility Study with EIA and LARAP	Fourth quarter of 2012
(3) Commencement of Construction	First quarter of 2013
(4) Inauguration of Service	First quarter of 2014

Source: MPA Study Team

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

Expressway Railway Service;

- F/S, Basic Design, EIA and LARAP;
- Execution of Land Acquisition; and
- Governmental Guarantee for Work Completion of Public Portion.

Commuter Railway Services;

- FS, DED with EIA and LARAP

Next Key Actions to be taken

Expressway Railway Service

Key Actions	Target Date
Commuter Railway Services F/S, DED with EIA and LARAP	Fourth quarter of 2012
Commencement of Construction Works	First quarter of 2013
Commencement of Operation	First quarter of 2014
Expressway Railway Service F/S, BD, EIA and LARAP	First quarter of 2013
Government support for public portion	Second quarter of 2013
Tender Announcement	Third quarter of 2013
Commencement of Construction Works	Fourth quarter of 2014

Source: MPA Study Team

1. Project Title

5. Airport and related Infrastructure

5.2 Construction of Soekarno-Hatta International Airport
(Revitalization of Soekarno-Hatta International Airport Terminals)

2. Project Description

2.1 Objective

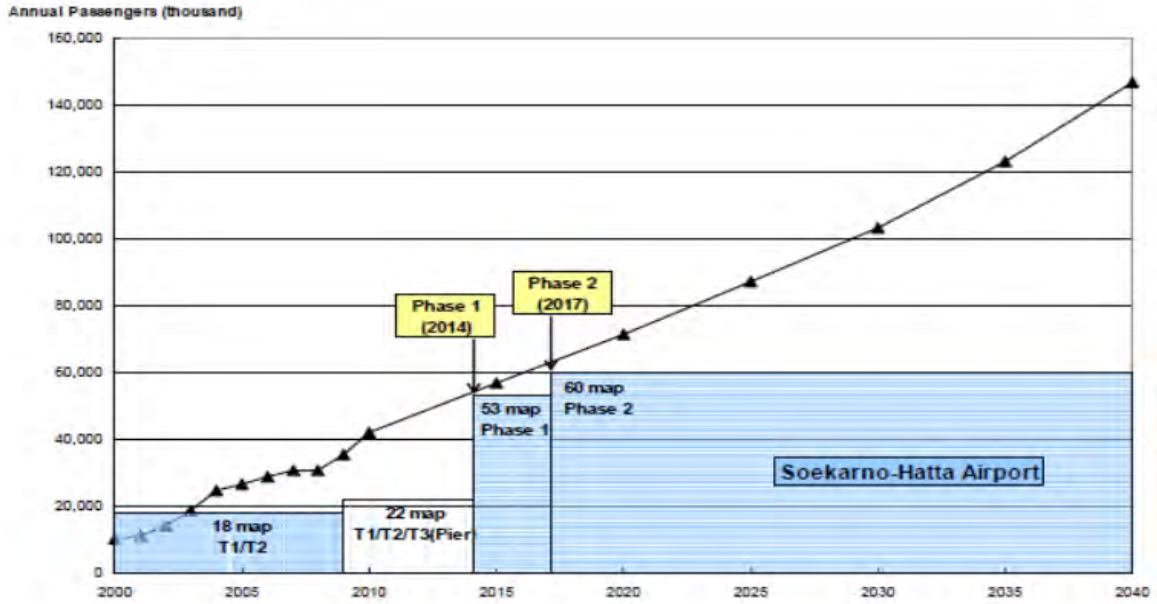
To develop the current Soekarno-Hatta International Airport (SHIA) to solve the constraints on airport operations such as passenger terminal buildings and other relevant facility.

2.2 Necessity of the Project

The following critical conditions were found out in SHIA through the Master Plan Study on Multiple-Airport Development for Great Jakarta Metropolitan Area (M/P Study) supported by JICA.

- The capacity of two current runway operations was estimated about 370,000 movements per year in maximum. The actual aircraft movement in 2010 has reached more than 307,000 movements, and it was estimated that its capacity would be saturated in 2014. Even if the 3rd open runway would be constructed, the runway capacity increased to 550,000 movements would still be saturated between 2020 (497,050 movements) and 2025 (595,530 movements) due to a sharp increase of aircraft movement.
- The total passenger handling volume was 40 million in 2010, while the expected maximum handling volume of current passenger terminals is 22 million per year. This means that the existing passenger terminals handle more than twice of its capacity at present.

Accordingly, the need for the urgent development of SHIA has been recognized in order to cope with this situation.



Source: Airport Master Plan Study (JICA, 2012)

Annual Passengers Forecast and Phased Development of Terminal Building

2.3 Outline of the Project

The following development plans have been proposed in the M/P Study:

- Third terminal building construction
- Forth terminal building construction
- Apron and taxiway construction
- Other related facility development (Airport People Mover, Parking building, etc.)

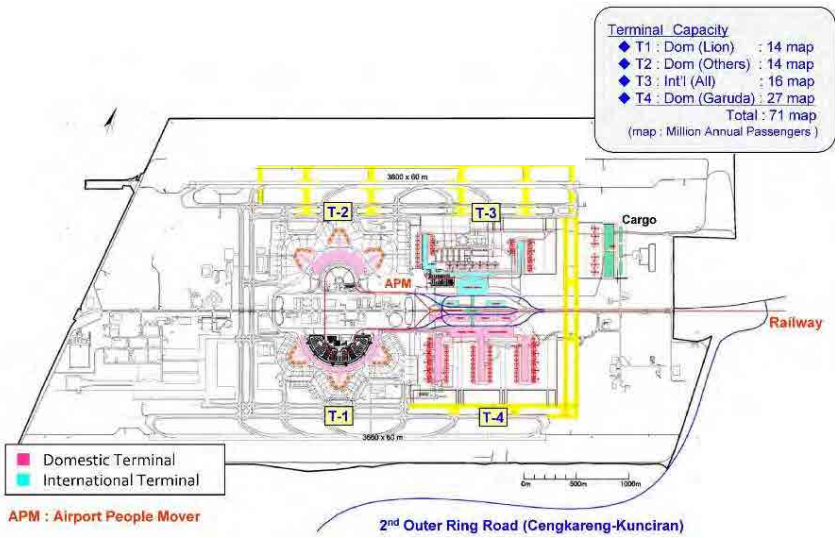
2.4 Project Features

(1) Phase 1 : Target year 2014

- Construction of Connecting Taxiway
- Expansion of Terminal 3 (Expand to 344,000 m^2)
- Development of New Cargo Terminal

(2) Phase 2 : Target year 2017

- Development of Terminal 4 (84,000 m^2)
- Expansion of Cargo Terminal



Source: Master Plan Study on the development of SHIA and new airport

Development Plan for Soekarno-Hatta International Airport

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	16,400	SOE
Public	0	
Government of Indonesia	0	
Foreign Assistance	0	
Total	16,400	

Source: MPA Study Team

3.2 Funding Scheme

This project will be implemented by State- Own-Enterprise.

4. Current Status and Implementation Schedule

4.1 Current Status

Final Report of MP study was submitted March 2012 after approval by DGCA.

4.2 Implementation Schedule

Stage	Target Date
(1) Approval from the GOI	End of 2012
(2) Request for assistance of E/S to GOJ	Beginning of 2013
(3) Commencement of Engineering Services	Middle of 2012
(4) Commencement of Tendering for Construction Works	Beginning of 2014

Source: MPA Study Team

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

Revitalization of Soekarno-Hatta International Airport terminals and existing runway

- Commencement of Tendering for Construction Work.

Next Key Actions to be taken

Key Actions	Target Date
Commencement of tendering for construction work	Second quarter of 2013

Source: MPA Study Team

1. Project Title

6. Water Supply and Sewerage System

6.1 Water supply project to the JABODETABEK Metropolitan Area
(DKI Jakarta – Bekasi – Karawang Water Supply (Jatiluhur))

2. Project Description

2.1 Objective

To supply bulk water to DKI Jakarta, Kabupaten/Kota Bekasi and Kabupaten Karawang

2.2 Necessity of the Project

It is necessary to establish an additional water supply system utilizing surface water from the Citarum River in order to address the increasing water demand requirements of DKI Jakarta, Kabupaten/Kota Bekasi and Kabupaten Karawang.

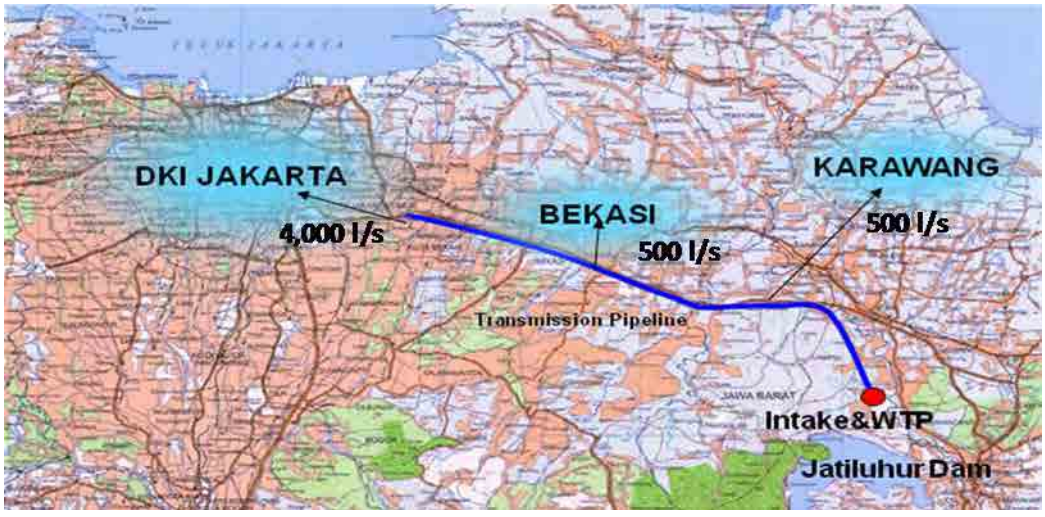
2.3 Outline of the Project

The water treatment plant, which is to be constructed downstream of Jatiluhur Dam, will supply treated bulk water to the receiving points of municipal water supply corporations (PDAMs). This will be coursed through a pipeline installed along the West Tarum Canal or Jakarta-Cikampek Toll Road.

A bulk water supplier (SPC) that would provide treated bulk water to each PDAM will be established during the project implementation phase. It is assumed that the SPC will build and operate the project facility. The SPC will also procure the finances needed for that project. The public sector will bear the cost for land acquisition.

2.4 Project Features (First phase)

Planned water supply discharge:	5,000 l/s(Total)
to Karawang	500 l/s
to Bekasi	500 l/s
to DKI Jakarta	4,000 l/s
Water Treatment Plant:	5,000 l/s
Transmission Pipeline :	Diameter 1,800mm x 58 km long



Source: Study supported by JICA

Location Map of the Project

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	4,400	
Public	0	
Government of Indonesia	0	
Foreign Assistance	0	
Total	4,400	

Source: MPA Study Team

3.2 Funding Scheme

The private sector establishes a SPC and the SPC will build, transfer and operates the some parts of the project facilities. A bulk supply contract will be concluded between the SPC and GCA (Government Contracting Agency) established by the GOI. It is also assumed that a government subsidy and guarantee will be provided to the SPC by the GOI in accordance with the presidential

4. Current Status and Implementation Schedule

4.1 Current Status

A technical feasibility study was conducted by the Ministry of Public Works (PU) under the Indonesia Infrastructure Initiative (INDII) program funded by Aus AID.

A further study on financial and legal aspects is being conducted.

4.2 Implementation Schedule

Stage	Target Date
(1) Commencement of SPC Procurement	2013
(2) Award of SPC Contract	End of the second quarter of 2013
(3) Commencement of Construction (First phase)	First quarter of 2014
(4) Commencement of Operation (First phase)	First quarter of 2017

Source: Interview with BPPSPAM

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Land Acquisition for Pipeline Alignment;
- Agreement between GOI and Local Government regarding;
  a) Implementation Framework
  b) Bulk Water Purchasing Price for Off-Taker (PDAMs)
- Financial Arrangement.

Next Key Actions to be taken

Key Actions	Target Date
Determination of Project Scope, Implementation Framework, Financial Arrangement/ Source, etc.	December 2012
Commencement of Operation (First phase)	2017

Source: MPA Study Team

1. Project Title

7. Solid Waste Management System

7.1 Construction of the West Java Regional Solid Waste Treatment

2. Project Description

2.1 Objective

To provide intermediate treatment and final disposal facilities for solid waste management in West Java Province.

2.2 Necessity of the Project

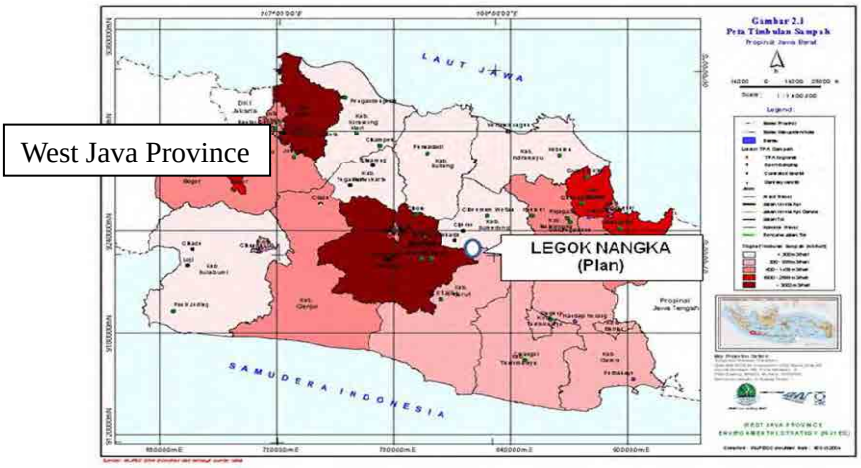
It is inevitable to close the current dumping site according to Solid Waste Management Law No.18/2008. Therefore, it is necessary for a new site for a sanitary landfill as well as a solid waste treatment facility to reduce disposed solid waste in the new landfill site.

2.3 Outline of the Project

Solid waste is transported from each waste generation source in Bandung to a new solid waste treatment and final disposal facility in Legok Nangka.
The project will be implemented by GOI.

2.4 Project Features

Handled waste : 1000 tons/day in Legok Nangka
Facilities and equipment : sanitary landfill facility, leachate treatment facility, sorting facility, composting facility, etc.



Source: West Java Province

Location Map of the Project

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	0	
Public	1,000	
Government of Indonesia	0	
Foreign Assistance	1,000	
Total	1,000	

Source: MPA Study Team

3.2 Funding Scheme

The cost shows the development cost for Legok Nangka only.

The cost for Legok Nangka is only the project cost based on the Final Report of Preparatory Survey for the Indonesia West Java Province Intermediate Waste Treatment.

4. Current Status and Implementation Schedule

4.1 Current Status

A feasibility study is being carried out by the Ministry of Public Works (PU) through the support of JICA. The EIA has not been officially approved in December 2011. The final report of the study was submitted in December 2011.

4.2 Implementation Schedule

Stage	Target Date
(1) Tender Document Preparation and Tender	Second quarter of 2012 to third quarter of 2013
(2) Detailed Design and Construction based on Design Build Contract	Third quarter of 2013 to third quarter of 2015

Source: Interview with West Java Province

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Listing on Blue Book and Finance Request;
- Determination of Project Scope, Implementation Framework, Financial Arrangement, etc.; and
- Approval of EIA.

Next Key Actions to be taken

Key Actions	Target Date
Listing on Blue Book and Financial Request	October 2012
Commencement of Construction	Third quarter 2013
Commencement of Operation	End of 2015

Source: MPA Study Team

1. Project Title

8. Flood Management System

8.1 Reconstruction of East Pump Station at Pluit

2. Project Description

2.1 Objective

To reconstruct the East Pump House at the Pluit Pump Station in order to restore the original discharge capacity. This would protect the inland drainage area from intrusion of seawater and mitigate flood inundation damages in Central Jakarta to ensure that the capital city is able to maintain its normal function.

2.2 Necessity of the Project

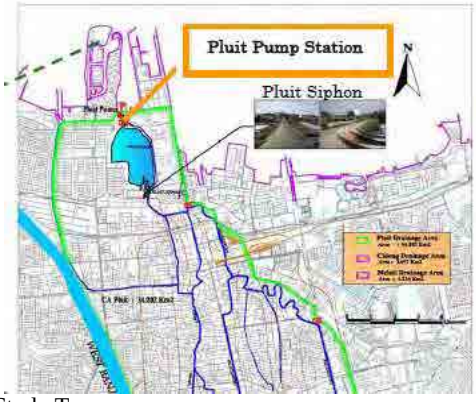
Flood in the western part of Central Jakarta could not be mitigated without its operation due to significant land subsidence in the area since the mean sea level is higher than the water level of the existing drainage systems.

2.3 Outline of the Project

The storm drainage of Central Jakarta has a total catchment area of approximately 42.1 km^2 , and carried out by three pump stations, namely Pluit, Cideng, and Melati. Among the three pump stations, Pluit Pump Station, which is located downstream the basin, is the most essential facility having a total drainage capacity of 47.3 m^3/s. This facility comprises of three pump houses, namely, the East (13.3 m^3/s), Central (16.0 m^3/s), and West (18.0 m^3/s). The East Pump House started operating in 1963, and presently requires urgent rehabilitation since it ceased after 45 years of operations.

2.4 Project Features (First Stage):

(1) Reconstruction of the East Pump House: three-story building with floor area of about 400 m^2.
(2) Refurnishing of pump units: three units of drainage pump (5 m^3/s/unit), three sets of pipeline system on the ground, one set of emergency generator facility (1,500 kVA), three units of trash screen and auxiliaries, and a horizontal conveyer.
(3) Rehabilitation of sea tide dike (about 145 m long, cantilever steel pipe sheet pile and counter weight embankment type) in front of the East Pump House.
(4) Consulting services including technical transfer of operation and maintenance of the pump station.



Source: MPA Study Team

Location Map of the Project

Source: JICA Study Team for the project

Perspective of the Pluit Pump Station

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	0	
Public	200	
Government of Indonesia	0	
Foreign Assistance	200	
Total	200	

Source: MPA Study Team

3.2 Funding Scheme

The project will be implemented under a public fund scheme.

4. Current Status and Implementation Schedule

4.1 Current Status

Detailed design, pre-qualification, and bid are scheduled in the period of July - February 2012 through Japanese grant aid. This project is listed in the Blue Book. The Exchange of Note (E/N) on Grant Aid for construction has been done by the GOI and GOJ on August 18, 2011.

4.2 Implementation Schedule

Stage	Target Date
(1) Commencement of Construction	2012
(2) Commencement of Operation	First quarter of 2014

Source: Interview with the JICA Study Team for the project

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Monitoring of Construction Work; and
- Commencement of Operation.

Next Key Actions to be taken

Key Actions	Target Date
Commencement of Operation	Second quarter of 2014

Source: MPA Study Team

1. Project Title

9. Electric Power / Energy Infrastructure

9.1 Construction of Java-Sumatra Interconnection Transmission Line

2. Project Description

2.1 Objective

To interconnect power systems between South Sumatra and Jakarta Metropolitan area

2.2 Necessity of the Project

(1) The power systems of the islands of Java and Sumatra, the nation's growth engines, are presently not linked. The interconnection is needed to exchange the planned system.

(2) The enhancement of the power system in Java through this project will contribute to a stable and reliable power supply.

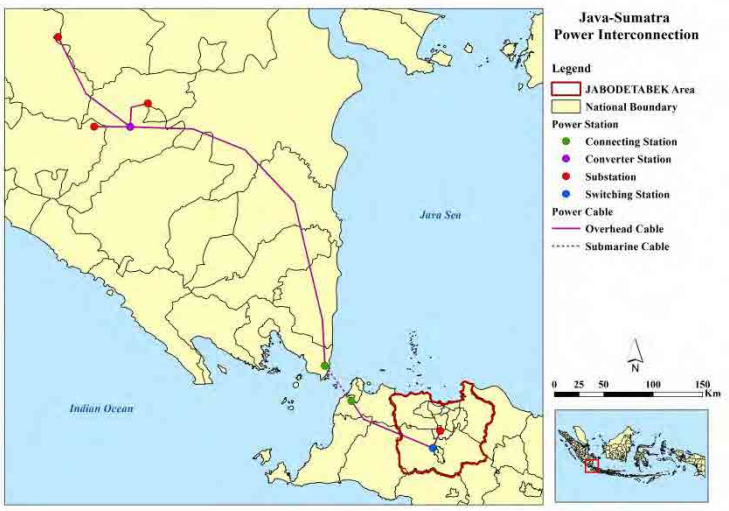
2.3 Outline of the Project

AC/DC 500 kV Transmission Line with total length of around 600 km, including a 40 km submarine cable, will connect the Bangko Tengah converter station in South Sumatra with the X-Bogor converter station across Sunda Strait. The transmission line's transfer capacity is 3,000 MW.

2.4 Project Features

Interconnection through the HVDC system would alleviate the power supply loads of both systems and improve their reliability since connection by HVDC prevents the increase of short circuit capacity.

2.5 Location Map



Source: MPA Study Team

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	2,800	SOE
Public	16,900	
Government of Indonesia	0	
Foreign Assistance	16,900	
Total	19,700	

Source: MPA Study Team

3.2 Funding Scheme

This project will be implemented by State- Own-Enterprise.

4. Current Status and Implementation Schedule

4.1 Current Status

Japanese ODA Loan agreement was signed on April 30 2010:

4.2 Implementation Schedule

Stage	Target Date
(1) Start of Construction	2013
(2) Completion of Construction and Start of Operation	2017

Source: MPA Study Team

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Listing on Blue Book and additional Finance Request;
- Completion of Land Acquisition before starting Construction Work;
- Approval of Sub-loan Agreement for Construction;
- Commencement of Construction Work; and
- Completion of Construction.
  (3 months prior to the COD of related IPP)

Next Key Actions to be taken

Key Actions	Target Date
Listing on Blue Book and additional Finance Request	October 2012
Approval of Sub-loan Agreement for Construction	October 2012
Commencement of Construction Work	June 2013
Completion of Construction (3 months prior to the COD of related IPP)	August 2016

MPA Study Team

1. Project Title

9. Electric Power / Energy Infrastructure

9.2 Construction of Indramayu Coal-fired Power Plant

2. Project Description

2.1 Objective

To generate electric power to meet the increasing power demand in Jakarta Metropolitan area

2.2 Necessity of the Project

To meet the increasing electric demand in Jakarta Metropolitan Area.

2.3 Outline of the Project

One unit of Coal-fired Power Plant with a capacity of 1,000 MW and 500 kV transmission line from Indramayu to Cibatu

2.4 Project Features

(1) Ultra Super-Critical (USC) steam condition technology

USC steam condition technology can achieve higher power generation efficiency, thus reducing Green House Gas emission.

(2) Comparison between conventional and USC types of coal-fired power plant

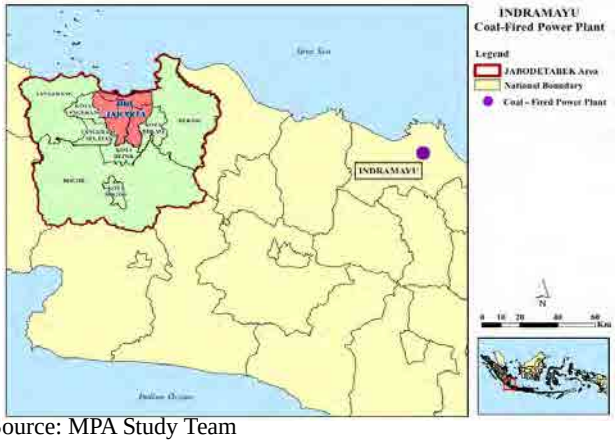
Type	Conventional (Sub-Critical) Pressure Steam	USC Steam Pressure
Temperature(°C)	450 - 566	530 - 620
Pressure(bar)	Less than 160	Around 250
Efficiency (%)	38 - 40	45 - 48
Carbon emission		4% lower than SC

Source: MPA Study Team

(3) Components of Project

1) Coal-fired power plant
2) 500kV Transmission Line : 110km
3) Coal Unloading, storage, ash disposal and other ancillary facilities
4) Consulting Service

2.5 Location Map



Source: MPA Study Team

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	3,000	SOE
Public	17,400	
Government of Indonesia	0	
Foreign Assistance	17,400	
Total	20,400	

Source: MPA Study Team

3.2 Funding Scheme

This project will be implemented by State- Own-Enterprise.

4. Current Status and Implementation Schedule

4.1 Current Status

(1) Preparatory study supported by JICA: Final Report, September 2010

(2) The Exchange of Notes on Japanese ODA loan for ES (Engineering Service) portion has been done by the GOI and GOJ on August 18, 2011

4.2 Implementation Schedule

Stage	Target Date
(1) Selection of Consultant	2012
(2) Start of Construction	2013
(3) Completion of Construction and Start of Operation	2017

Source: MPA Study Team

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Listing on Blue Book and Finance Request (Construction);
- Conclusion of Sub-Loan Agreement and L/A (Engineering Service) between GOI and JICA;
- Commencement of Construction Work; and
- Commencement of Operation.

Next Key Actions to be taken

Key Actions	Target Date
Engineering Service Conclusion of L/A between GOI and JICA and Conclusion of Sub Loan Agreement	October 2012
Construction Listing on Blue Book and Finance Request	October 2012
Approval of EIA for Power Plant	Second half of 2012
Commencement of Construction Work	2013
Commencement of Operation	2017

MPA Study Team

1. Project Title

9. Electric Power / Energy Infrastructure

9.3 Development of Banten Coal-fired Power Plan

2. Project Description

2.1 Objective

To generate electric power to meet the increasing power demand in Jakarta Metropolitan area.

2.2 Necessity of the Project

(1) The capacity of the Java-Bali system, which supplies electric power to Jakarta Metropolitan area, needed to be increased in order to meet higher power demand growth.

(2) The utilization of coal which is abundantly available in Indonesia is desirable for electricity generation.

2.3 Outline of the Project

One unit of Coal-fired Power Plant with capacity of 660 MW under IPP scheme

2.4 Project Features

(1) Sub-Critical or Super-Critical steam condition coal-fired power generation plant.

(2) Generation plant with capacity of 660 MW and tolerance of plus or minus 10% at the transmission end.

(3) Connection to 500 kV transmission line is included.

2.5 Location Map

Candidate plant sites: Lontar, Tanjung Pontang, Teratai, Tanjung Pujut, Banten, West Java

Source: MPA Study Team

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	8,600	IPP
Public	0	
Government of Indonesia	0	
Foreign Assistance	0	
Total	8,600	

Source: MPA Study Team

3.2 Funding Scheme

This project will be implemented by IPP.

4. Current Status and Implementation Schedule

4.1 Current Status

(1) PQ results were announced in February 2011. 5 companies were qualified.
(2) RFP and Model PPA were delivered in April 2011
(3) Bid was closed on September 14, 2011. Only two companies offered.
(4) PLN is under negotiations with the successful bidder, a Malaysian company.

4.2 Implementation Schedule

Stage	Target Date
(1) Bid of Technical/ Commercial open	September/October 2011
(2) Selection of IPP Company	November 2011
(3) Concluding PPA	December 28, 2011
(4) Completion of Construction and Start of Operation	June 2016

Source: MPA Study Team

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

・Commencement of Operation.

Next Key Actions to be taken

Key Actions	Target Date
Commencement of Operation	June 2016

MPA Study Team

1. Project Title

9. Electric Power / Energy Infrastructure

9.4 Development of Gas-fired Power Plant and FSRU (Floating Storage Regasification Unit)

2. Project Description

2.1 Objective

To enhance Gas Supply Chain Business Model for domestic needs in Indonesia by;

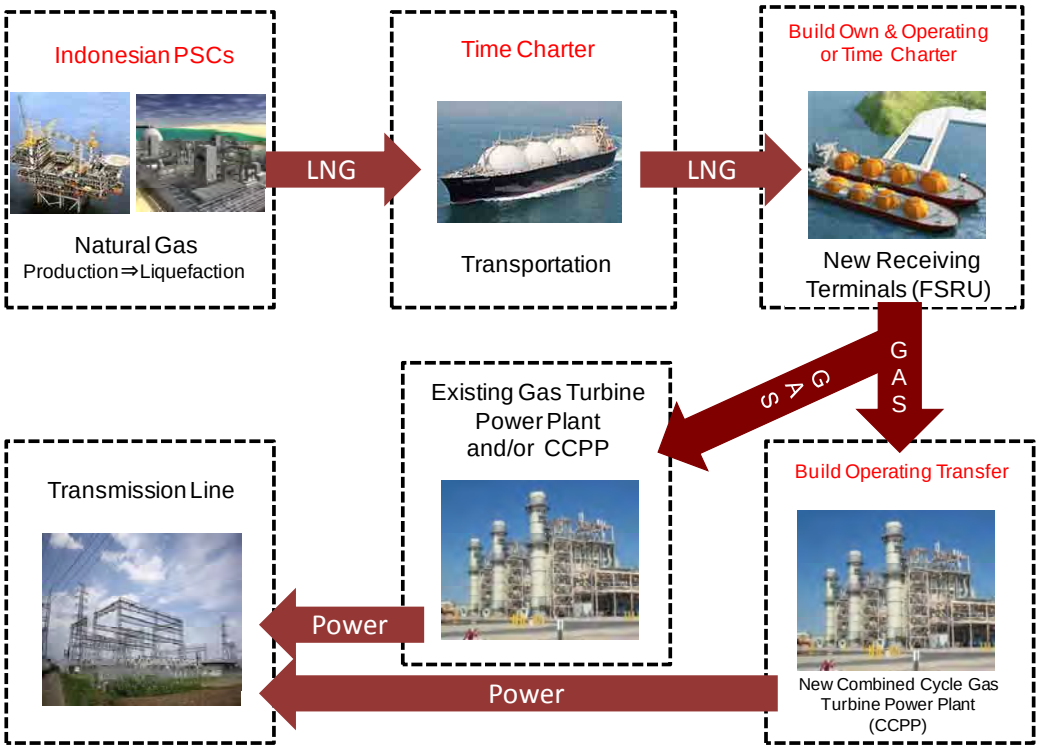
(1) Supplying LNG to complement natural gas supply shortfall.

(2) Generating power by LNG fuel power plant to underpin stable power supply for Jakarta Metropolitan ("JABODETABEK") Area.

2.2 Outline of the Project

The scope of the Project includes a Floating Storage Regasification Unit (FSRU) and a Combined Cycle Power Plant (CCPP) in JABODETABEK area. Regasified LNG will also be supplied for existing gas fired power plants and other domestic industrial users.

2.3 Project Features



Source: Sumitomo Corporation

2.4 Location Map

High electric/industrial demand area in West Java

Map Source: Wood Mackenzie

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	10,700	
Public	0	
Government of Indonesia	0	
Foreign Assistance	0	
Total	10,700	

Source: MPA Study Team

4. Current Status and Implementation Schedule

4.1 Current Status

June 28, 2011, Sumitomo Corporation has concluded with BPMIGAS the “Declaration of Cooperation (DoC)” to jointly conduct feasibility study (“JFS”) to verify commercial framework including local regulatory and technicality of the Project.

5. Challenges and Actions to be Taken

The continuous cooperation by GOI including BPMIGAS, MIGAS and other governmental institutions or national companies are inevitable to realize the Project particularly;

- Framework agreement between related parties (incl. State Owned Enterprises)
- Government support
- Government approval

Next Key Actions to be taken

Key Actions	Target Date
Government Approval processes	Fourth quarter 2012 onwards
Commencement of basic engineering	First quarter 2013 onwards

MPA Study Team

1. Project Title

9. Electric Power / Energy Infrastructure

9.5 Development of Rajamandala Hydroelectric Power Plant

2. Project Description

2.1 Objective

To generate electric power to meet the increasing power demand in Jakarta Metropolitan area

2.2 Necessity of the Project

(1) The capacity of the Java-Bali system, which supplies electric power to Jakarta Metropolitan area, needs to be increased in order to meet higher power demand growth.

(2) The utilization of hydropower, which is a renewable energy resource abundantly available in Indonesia, is desirable for electricity generation.

2.3 Outline of the Project

Hydroelectric Power Station with capacity of 47 MW.

2.4 Project Features

(1) Project Scheme: 30 years IPP-BOOT : Owner/Contractor (PT. Indonesia Power and The Kansai Electric Power Co., Inc.) funded by project finance loan from the international multilateral and bilateral credit agencies

(2) Components of the plant

1) Weir, an intake and a 1km long tunnel.

2) Hydroelectric power station with capacity of 47 MW using Kaplan type turbines.

3) A 150 kV switchyard and a 150 kV, 10 km long transmission line.

4) Only a few numbers of people are expected for relocation.

2.5 Location Map

Location: Bojong Picung District, Cianjur Region, West Java

Source: MPA Study Team

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	1,300	
Public	0	
Government of Indonesia	0	
Foreign Assistance	0	
Total	1,300	

Source: MPA Study Team

3.2 Funding Scheme

The project is listed on Second Fast Track Program (FTP2).

4. Current Status and Implementation Schedule

4.1 Current Status

(1) Direct Appointment for Power Purchase was made on August 16, 2007
(2) Issuance of Request for Proposal from PLN: September 30, 2010
(3) Submission of Proposal: January 3, 2011

4.2 Implementation Schedule

Stage	Target Date
(1) Power Purchase Agreement (PPA) with PLN	Under negotiation (Expected to be concluded by May. 2012)
(2) Start of Construction of Plant	December 2012
(3) Completion of Construction and Start of Operation	September 2015

Source: MPA Study Team

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Business Viability Guarantee Letter from MOF
- Power Purchase Agreement with PLN.

Next Key Actions to be taken

Key Actions	Target Date
Power Purchase Agreement (PPA) with PLN	2012
Commencement of Construction of Plant	December 2012
Commencement of Operational Stage	September 2015

MPA Study Team

1. Project Title

9. Electric Power / Energy Infrastructure

9.6 Development of Central Java Coal-fired Power Plant

2. Project Description

2.1 Objective

To generate electric power to Central Java by using sub-bituminous coal as fuel.

2.2 Necessity of the Project

To meet the increasing electricity demand in the Java-Bali Grid

2.3 Outline of the Project

Construction and operation of two units of Coal-fired Power Plant with capacity of 1,000MW each under Built-Operate-Transfer (BOT) scheme

2.4 Project Features

(1) Ultra Super-Critical (USC) steam condition technology
(2) USC steam condition technology can achieve higher power generation efficiency, thus reducing Green House Gas emission
(3) Project cost: USD3.2 billion (or about IDR 30 trillion)
(4) The sales destination is PLN for period of 25 years
(5) The ownership shares of the Special Purpose Company (SPC) are owned by the Electric Power Development Co., Ltd. with 34%, PT Adaro Energy Tbk with 34%, and ITOCHU Corporation with 32%
(6) Project scheme is Built-Own-Operate-Transfer (BOOT)
(7) Operation and maintenance is carried out by the SPC, which is jointly set up in the future by three investors
(8) Guarantee from IIGF is applied for this project.

2.5 Location Map

Plant site: Batang Regency, Central Java

Source: MPA Study Team

3. Project Cost and Fund Scheme

3.1 Project Cost

The project cost and fund scheme are shown below;

Fund Source	Cost (IDR billion)	Remarks
Private	30,100	
Public	0	
Government of Indonesia	0	
Foreign Assistance	0	
Total	30,100	

Source: MPA Study Team

3.2 Funding Scheme

Power Purchase Agreement (PPA) for 25 years between PLN and SPC was guaranteed by Indonesia Infrastructure Guarantee Fund (IIGF).

4. Current Status and Implementation Schedule

4.1 Current Status

(1) A letter of intent was acquired on June 20, 2011
(2) The Power Purchase Agreement (PPA) was agreed upon in August 2011
(3) PT. Penjamin Infrastructure Indonesia (PII), the government's infrastructure guarantee fund, has agreed to provide financial guarantee to investors to cover the financial risk on the IDR 30 trillion (USD 3.3 billion) power plant, if PLN fails to meet its financial obligation.

4.2 Implementation Schedule

Stage	Target Date
(1) Commencement of Construction	Fourth quarter. 2012 or later
(2) Commercial Operation of Unit 1	October 2016
(3) Commercial Operation of Unit 2	April 2017

Source: MPA Study Team

5. Challenges and Actions to be Taken

The following actions shall be taken for the smooth implementation of the project:

- Oct. 2013/ Finance Close (1 year delay due to land acquisition and environmental assessment process)
- Oct. 2017/ Unit 1 Commercial Operation (48 months after Finance Close)
- Oct. 2018/ Unit 2 Commercial Operation (54 months after Finance Close)

ANNEX V

ENVIRONMENTAL AND SOCIAL CONSIDERATION

ANNEX V. ENVIRONMENTAL AND SOCIAL CONSIDERATION

List for Necessity of AMDAL and Potential of Involuntary Resettlement (1/3)

GOAL and PROGRAMS		PROJECTS	Necessity of AMDAL	Potential of Involuntary Resettlement
A. BETTER URBAN ENVIRONMENT	A.1 Development of MRT-based New Urban Transport System	(1) Jakarta Mass Rapid Transit (MRT): N-S I, N-S II, E-W as FTP 3.1	* ≧25 km	*
		(2) JABODETABEK Railways Capacity Enhancement Project (Phase I) as FTP 3..2 and Further Improvement as Phase II	* ≧25 km	*
		(3) Development of Jakarta Monorail	— ≦25 km	—
		(4) Station Plaza Development and Park & Ride System Enhancement	* ≧5 ha	*
		(5) Introduction of Common Ticketing System (Smart Card)	—	—
	A.2 Development of Road Network in and around Jakarta	(1) Improvement of Road Network in JABODETABEK-Enhancement of Road Network Capacity in JABODETABEK as FTP 4.1	* ≧5 km	*
		(2) Development of Jakarta Outer Outer Ring Road	* ≧5 km	*
		(3) Introduction of Intelligent Transport System (ITS) in JABODETABEK	—	—
	A.3 Promotion of Urban Re-development	(1) Pilot Project of Urban Development/ Re-development	* ≧100 ha	*
	A.4 Improvement of Water Supply and Sewerage Systems	(1) DKI Jakarta – Bekasi – Karawang Water Supply (Jatiluhur) as FTP 6.1	* ≧10 km	*
		(2) Rehabilitation of Water Distribution Facilities in DKI Jakarta, Bekasi and Karawang, with the integration of DKI Jakarta – Bekasi – Karawang Water Supply (Jatiluhur)	* ≧10 km	*
		(3) Development of Sewerage System in DKI Jakarta	* ≧16,000 m^3/day	*
		(4) Development of Water Supply Systems for Large-scale Infrastructure Development	* ≧10 km	*
	A.5 Solid Waste Treatment	(1) Construction of the West Java Regional Solid Waste Treatment as FTP 7.1	* ≧10 ha	*
		(2) Development of New Landfill Site at Tangerang	* ≧10 ha	*
	A.6 Flood Management	(1) Reconstruction of East Pump Station at Pluit as FTP 8.1	—	—
		(2) Development of Urban Drainage System in DKI Jakarta	*	*
		(3) Normalization of the Rivers in JABODETABEK	*	*

Legend *:Required —: Not required

List for Necessity of AMDAL and Potential of Involuntary Resettlement (2/3)

GOAL and PROGRAMS		PROJECTS	Necessity of AMDAL	Potential of Involuntary Resettlement
B. NEW GROWTH SUB-CORRIDOR FOR JABODETABEK MPA	B.1 Development of New Growth Sub-Corridor for JABODETABEK MPA	(1) Development of New Township	* ≧5 ha	*
		(2) Development of New Industrial Estate in the Vicinity of New Airport	*	*
	B.2 Development of New Academic Research Cluster	(1) Development of New Academic Research Cluster	*	―
	B.3 Development of Road/Railway along New Growth Sub-Corridor for JABODETABEK MPA	(1) Construction of Second Jakarta-Cikampek Toll Road	* ≧5 km	*
		(2) Improvement of Road Network in JABODETABEK-Improvement of Road Network within the Industrial Area to the East of Jakarta as FTP 2.2	* ≧25 km	*
		(3) Construction of Access Road to New Cilamaya Seaport as FTP 1.2	* ≧25 km	*
		(4) Construction of Freight Railway to New Cilamaya Seaport	* ≧25 km	*
		(5) Construction of Access Road to the New International Airport	* ≧30 km	*
		(6) Construction of Jakarta-Bandung High Speed Railway via New International Airport	* ≧25 km	*
C. MULTIPLE GATEWAYS	C.1 Development of Cilamaya Port	(1) Development of a New International Port as FTP 1.2	* ≧25 ha	―
		(2) Development of New Car Terminal at Cilamaya Port	* ≧5 ha	―
		(3) Development of Logistics Park (Supporting Facilities for the New Port)	* ≧5 ha	*
	C.2 Improvement of Tanjung Priok Port	(1) Improvement and Expansion of Container Terminal at North Kalibaru as FTP 1.1	* ≧5 ha	―
		(2) Expansion of Car Terminal at Kalibaru	* ≧200 m	―
	C.3 Development of New International Airport	(1) Development of New International Airport	*	*
	C.4 Improvement of Soekarno-Hatta International Airport (SHIA)	(1) Construction of Soekarno-Hatta International Airport as FTP 5.2	* ≧2,000 m^2	―
		(2) Construction of Access Railway to Soekarno-Hatta International Airport as FTP 5.1	* ≧25 km	*

Legend *:Required ―: Not required

List for Necessity of AMDAL and Potential of Involuntary Resettlement (3/3)

GOAL and PROGRAMS		PROJECTS	Necessity of AMDAL	Potential of Involuntary Resettlement
D. LOW-CARBON ENERGY DEVELOPMENT	D.1 Low-Carbon Power Supply Development	(1) Development of Central Java Coal-fired Power Plant as FTP 9.6	* ≧100 MW	*
		(2) Construction of Indramayu Coal-fired Power Plant as FTP 9.2	* ≧100 MW	*
		(3) Development of Banten Coal-fired Power Plant as FTP 9.3	* ≧100 MW	*
		(4) Development of Gas-fired Power Plant and FSRU (Floating Storage Regasification Unit) as FTP 9.4	* ≧100 MW	*
		(5) Development of Rajamandala Hydroelectric Power Plant as FTP 9.5	* <50 MW ≧150 kV	*
		(6) Construction of Java-Sumatra Interconnection Transmission Line as FTP 9.1	* ≧150 kV	*
		(7) Other Renewable and Low-Carbon Emission Power Projects connecting to Java-Bali-Sumatra Power Network	* ≧55 MW	*
		(8) Development of West Java Coal-fired Power Plant with Clean Coal Technology	* ≧100 MW	*
	D.2 Development of Smart Grid	(1) Smart Community (including a pilot project for the Smart Grid) as FTP 2.1	－ ≦10 MW	－
		(2) Improvement of JABODETABEK Power Supply Quality	* ≧150 kV	*

Legend *:Required －: Not required

ANNEX VI

RISKS VIEWED FROM INVESTORS

ANNEX VI. RISKS VIEWED FROM INVESTORS

Sector: Mass Transportation Networks

Project Name: C.4(2) Construction of Access Railway to Soekarno-Hatta International Airport as FTP 5.1

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Funding scheme shall be established at the early stage.	Difficulty in fundraising during construction stage. Government guarantee is required in order to enhance non-recourse finance or limited recourse finance.	Provision of incentives such as subsidy (VGF; Viability Gap Funding) and tax relief shall be required in order to enhance the project viability.
Legal Risk	To enable private sector participate in the project, it is important to illustrate the suitable risk allocation between public and private sector from the early stage. It is desirable to decide upon and open the Draft Model Concession Agreement which specifies these risk assignment.	Business-incompatibility caused by changing laws and regulations. Multiple approvals may be required from the central and local authorities. If they have different policies or rules for approval assessment, problem may arise during construction and implementation stages.	Business-incompatibility caused by changing laws and regulations.
Engineering Risk		Huge loss will be occurred at private sector when there will be time difference in construction completion between public portion and private portion. Well experienced Project Management Consultant (PMC) should control the whole process of project from tender to construction stage.	Risk of non-performance by constructed facilities. Risk of non-operation due to power failure, force majeure, insufficient EPC.
Institution Risk			
Political Risk	Construction route needs to be decided. Land acquisition shall be done by public sector.		

Sector: Road Networks
Project Name: A.2 (1) Improvement of Road Network in JABODETABEK-Enhancement of Road Network Capacity in JABODETABEK as FTP 4.1

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Funding scheme shall be established at the early stage.		
Legal Risk			
Engineering Risk	Lack of comprehensive perspective of congestion-improvement causes the risk which discourages effective utilization of whole road network. Grade separated crossing potentially worsen traffic flow at the intersection underneath the grade separated crossing. Lack of proper care for vulnerable road users faces a growing risk of traffic accident.	Lack of consideration for lane closure which is necessary for construction work may worsen the existing congestion.	An improvement is likely produce a new bottleneck at different location. Routine follow-up is required. Insufficient maintenance may cause structures risky conditions. Proper inspection and proper maintenance are required.
Institution Risk	Promote cooperation between central and local government may reduce the risk of overlapping investment.		Lack of cooperation between police and road administrator cause a risk which discourages effective utilization of road infrastructure.
Political Risk	Priority of potential projects may be varied due to political condition.		

Sector: Road Networks
Project Name: A.2 (2) Development of Jakarta Outer Outer Ring Road

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Delay in the procedure for land acquisition increases the financial risk. The government's responsibility over land acquisition is important. Proper estimation of project cost is critical so as not to cause cost escalation.	Facing difficulty acquiring land has a risk for cost escalation and unforeseen delay.	In case actual traffic volume is lower than estimated volume, it may cause shortage in revenue.
Legal Risk	Land Expropriation Act must be administrated appropriately. EIA must be conducted appropriately.	There is a tendency to ignore EIA and/or environmental standards.	There is a tendency to ignore EIA and/or environmental standards.
Engineering Risk	Consideration for environmental conservation is required.	Consideration for easy-maintenance design feature in order to avoid the risk of maintenance cost escalation.	Improving the of traffic control system is required in order to accommodate the complicated road network. Insufficient maintenance may cause structures risky conditions. Proper inspection and proper maintenance are required.
Institution Risk	The opening timing of adjacent sections is critical for investment effect. Total administration for whole sections is important. Promote cooperation between central and local government may reduce the risk of overlapping investment.	Cooperation with local government is important in order to avoid the risk of project interruption by residents living along the route.	
Political Risk	There is a risk to move ahead on proposal by using over estimated forecast traffic volume. Route and location of entrance/exit may be changed by political condition.		

Sector: Road Networks
Project Name: A.2 (3) Introduction of Intelligent Transport System (ITS) in JABODETABEK

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Delay in conclusion of main administrator of ERP increases the financial risk.		Cost for future system renewal may be on a tight budget Labor cost of operator for traffic control room may be on a tight budget.
Legal Risk	To decree the laws for ERP before implement is crucial.		
Engineering Risk	To build a scalable system is important for future extensity. Introduction of pilot project may reduce the risk of system error.	Set up a common system among road administrators is important. To create a sustainable system, it is desirable that local suppliers' performance meets the technical criteria.	Operation of expressway and street should be integrated into sole system. Introduction of ERP is likely produce a new bottleneck at different location. Routine follow-up is required. To create a sustainable system, it is desirable that local suppliers have potential for proper maintenance technique.
Institution Risk	Coordination among supervisory authorities is crucial. Promote cooperation between central and local government may reduce the risk of overlapping investment.	PR campaign before introduction new system reduces the risk of public confusion. Stuff training for administration of new system before introduction is important.	Integration with other modes is necessary. Lack of cooperation between police and road administrator has a risk which discourages effective utilization of system.
Political Risk	Delay in conclusion of main administrator of ERP may happen.		The use of revenue from ERP may be unclear.

Sector: Road Networks
Project Name: B.3 (1) Construction of Second Jakarta-Cikampek Toll Road

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Delay in the procedure for land acquisition increases the financial risk. The government's responsibility over land acquisition is important. Proper estimation of project cost is critical so as not to cause cost escalation. Minimum traffic volume guarantee from government may be crucial.	Facing difficulty acquiring land has a risk for cost escalation and unforeseen delay. Unexpected circumstances may cause cost escalation.	In case actual traffic volume is lower than estimated volume, it may cause shortage in reimbursement.
Legal Risk	Land Expropriation Act must be administrated appropriately. EIA must be conducted appropriately.	There is a tendency to ignore EIA and/or environmental standards.	There is a tendency to ignore EIA and/or environmental standards.
Engineering Risk	Considerations for introduce of re-development scheme or tunnel structure in order to avoid the risk of project interruption by residents living along the route. Consideration for coordination with Access Road to New International Airport and Access Road to New Cilamaya Seaport may reduce the risk of overlapping investment.	Consideration for easy-maintenance design feature in order to avoid the risk of future maintenance cost escalation.	Improving the traffic control system is required in order to accommodate for complicated road network. Insufficient maintenance may cause structures at risky conditions. Proper inspection and proper maintenance are required.
Institution Risk	Promote cooperation between central and local government may reduce the risk of overlapping investment.	Cooperation with local government is important in order to avoid the risk of project interruption by residents living along the route.	
Political Risk	To understand the importance of double network is necessary. There is a risk to move ahead on proposal by using over estimated forecast traffic volume.		

Sector: Road Networks

Project Name: B.3 (2) Improvement of Road Network in JABODETABEK-Improvement of Road Network within the Industrial Area to the East of Jakarta as FTP 2.2

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Funding scheme shall be established at the early stage. Delay in the procedure for land acquisition increases the financial risk. The government's responsibility over land acquisition is important. Proper estimation of project cost is critical so as not to cause cost escalation.	Facing difficulty acquiring land has a risk for cost escalation and unforeseen delay. Unexpected circumstances may cause cost escalation.	
Legal Risk			
Engineering Risk	Promote cooperation with existing plan may reduce the risk of overlapping investment. Consideration for coordination with Access Road to Second Jakarta-Cikampek Toll Road may reduce the risk of overlapping investment.	Lack consideration for lane closure which is necessary for construction work may worsen the already desperate congestion.	An improvement is likely produce a new bottleneck at different location. Routine follow-up is required.
Institution Risk	Promote cooperation between central and local government may reduce the risk of overlapping investment.	Cooperation with local government is important in order to avoid the risk of project interruption by residents living along the route.	
Political Risk			

Sector: Road Networks
Project Name: B.3 (3) Construction of Access Road to New Cilamaya Seaport as FTP 1.2

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Delay in the procedure for land acquisition increases the financial risk. The government's responsibility over land acquisition is important. Proper estimation of project cost is critical so as not to cause cost escalation. Minimum traffic volume guarantee from government may be crucial.	Facing difficulty acquiring land has a risk for cost escalation and unforeseen delay.	In case actual traffic volume is lower than estimated volume, it may cause shortage in revenue.
Legal Risk	Land Expropriation Act must be administrated appropriately. EIA must be conducted appropriately.	There is a tendency to ignore EIA and/or environmental standards.	There is a tendency to ignore EIA and/or environmental standards.
Engineering Risk	Consideration for environmental conservation is required. Cost escalation, which is caused by adopting viaduct structure, may be crucial. Consideration for coordination with Access Road to New International Airport and Second Jakarta-Cikampek Toll Road may reduce the risk of overlapping investment.	Consideration for easy-maintenance design feature in order to avoid the risk of future maintenance cost escalation.	Insufficient maintenance may cause structures at risky conditions. Proper inspection and proper maintenance are required.
Institution Risk	Promote cooperation between central and local government may reduce the risk of overlapping investment.	Cooperation with local government is important in order to avoid the risk of project interruption by residents living along the route.	
Political Risk	There is a risk to move ahead on proposal by using over estimated forecast traffic volume.		

Sector: Road Networks
Project Name: B.3 (5) Construction of Access Road to the New International Airport

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Delay in the procedure for land acquisition increases the financial risk. The government's responsibility over land acquisition is important. Proper estimation of project cost is critical so as not to cause cost escalation. Minimum traffic volume guarantee from government may be crucial.	Facing difficulty acquiring land has a risk for cost escalation and unforeseen delay.	In case actual traffic volume is lower than estimated volume, it may cause shortage in revenue.
Legal Risk	Land Expropriation Act must be administrated appropriately. EIA must be conducted appropriately.	There is a tendency to ignore EIA and/or environmental standards.	There is a tendency to ignore EIA and/or environmental standards.
Engineering Risk	Consideration for environmental conservation is required. Consideration for coordination with Access Road to New Cilamaya Seaport and Second Jakarta-Cikampek Toll Road may reduce the risk of overlapping investment.	Consideration for easy-maintenance design feature in order to avoid the risk of future maintenance cost escalation.	Insufficient maintenance may cause structures at risky conditions. Proper inspection and proper maintenance are required.
Institution Risk	Promote cooperation between central and local government may reduce the risk of overlapping investment.	Cooperation with local government is important in order to avoid the risk of project interruption by residents living along the route.	
Political Risk	New airport project may be cancelled. There is a risk to move ahead on proposal by using over estimated forecast traffic volume.		

Sector: Ports
Project Name: C.1(1) Development of a New International Port as FTP 1.2

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Land acquisition, dredging, development of land, access way / bridge, and other basic facilities should be carried out within public works. Especially, developing the access way under PPP scheme may lose the profitability due to the delay of construction of the port and may cause increase of the construction cost.	The state guarantee of work completion for public works portion enables private sectors to secure the finance from the banks. More than one access route should be prepared in order to keep the progress of construction in a time of any accident and disaster.	More than one access route should be prepared in order to avoid business suspension even in a time of any accident and disaster.
Legal Risk	Legal framework enabling land acquisition at low cost of proposed site is necessary. Government shall strictly restrict to trade the land around a proposed site in order to protect the possibility of the project as well as national benefits.		
Engineering Risk		The synchronizing and interface between public works and private works should be managed and accommodated by professional team consisting of well experienced experts designated by the financiers and/or private contractors. More than one access route should be prepared in order to keep the progress of construction in a time of any accident and disaster.	
Institution Risk	It shall be specified at an early stage; 1. which State Owned Enterprise (SOE) will be in charge of the project, and 2. what kind of authority will be reserved by such SOE.	Cooperation among the central government, local government and relevant road administrator is necessary. Assistance by the local public authority is also required in order to obtain a good understanding of interested residents.	Cooperation among the central government, local government and relevant road administrator is necessary. Assistance by the local public authority is also required in order to obtain a good understanding of interested residents.
Political Risk	Unless the excessive expansion plan of the existing port is controlled, the demand of new port development may decline. The scale and timeline of expansion plane shall be clear at an early stage.		

Sector: Ports
Project Name: C.1 (2) Development of New Car Terminal at Cilamaya Port

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Land acquisition, dredging, development of land, access way / bridge, and other basic facilities should be carried out within public works. Especially access road / bridge should be completed in prior to the commencement of the port operation for the purpose of promoting the private investment.	The state guarantee of work completion for public works portion enables private sectors to secure the finance from the banks. More than one access route should be prepared in order to keep the progress of construction in a time of any accident and disaster.	More than one access route should be prepared in order to avoid business suspension even in a time of any accident and disaster.
Legal Risk	Legal framework enabling land acquisition at low cost of proposed site is necessary.		
Engineering Risk	The terminal shall have the quay with the enough height to enable sleepless and safety cargo handling regardless of ebb and flow.	The synchronizing and interface between public works and private works should be managed and accommodated by professional team consisting of well experienced experts designated by the financiers and/or private contractors. More than one access route should be prepared in order to keep the progress of construction in a time of any accident and disaster.	
Institution Risk	It shall be specified at an early stage; 1. which State Owned Enterprise (SOE) will be in charge of the project, and 2. what kind of authority will be reserved by such SOE.	Cooperation among the central government, local government and relevant road administrator is necessary. Assistance by the local public authority is also required in order to obtain a good understanding of interested residents.	Cooperation among the central government, local government and relevant road administrator is necessary. Assistance by the local public authority is also required in order to obtain a good understanding of interested residents.
Political Risk	Unless the excessive expansion plan of the existing port is controlled, the demand of new port development may decline. The scale and timeline of expansion plane shall be clear at an early stage.		

Sector: Ports
Project Name: C.1 (3) Development of Logistics Park (Supporting Facilities for the New Port)

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	The land for Logistics Parks should be acquired at low cost under the risk on government and the land should be farmed out or leased out to the operators at low fee in order to protect the business feasibility.		The restriction to traffic amount of access road will give the incentive using the Logistics Parks as well as hold down the traffic congestion.
Legal Risk	Legal framework enabling land acquisition at low cost of proposed site is necessary.		
Engineering Risk		The synchronizing and interface between public works and private works should be managed and accommodated by professional team consisting of well experienced experts designated by the financiers and/or private contractors. More than one access route should be prepared in order to keep the progress of construction in a time of any accident and disaster.	
Institution Risk		Cooperation among the central government, local government and relevant road administrator is necessary. Assistance by the local public authority is also required in order to obtain a good understanding of interested residents.	Cooperation among the central government, local government and relevant road administrator is necessary. Assistance by the local public authority is also required in order to obtain a good understanding of interested residents.
Political Risk			

Sector: Airports
Project Name: C.3 (1) Development of New International Airport

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	In case of PPP project; - Land acquisition, development of land and other basic facilities should be carried out within public works. - Finance facilities shall be established for each category which is classified by the profitability of each facility. Demarcation between new airport and the existing airport is necessary to secure profitability.	The state guarantee of work completion enables private sectors to secure the finance from the banks. The relief measure of foreign exchange risk shall save the cost in procurement of Rupees by the foreign private sectors and it also achieve the project cost saving. Such measure should be applied especially to the cost of construction work mostly consists of local currency.	The decision making process and formula of landing charge and airport fee tariff shall be clarified. Such tariff shall be controlled by the private sector.
Legal Risk	Legal framework enabling land acquisition at low cost of proposed site is necessary.		
Engineering Risk	Following ancillary facilities will encourage use of the airport. Those facilities shall be considered and reflected in the master plan of new airport. - East and west highways connecting to Jakarta and Bandung - Basic infrastructure such as roads, electricity and water for industrial parks.	The synchronizing and interface between public works and private works should be managed and accommodated by professional team (Project Management Consultant) consisting of well experienced experts.	Implementing new Japanese energy-conservation technologies reducing the life cycle cost along with minimization of the daily running cost.
Institution Risk	Establishment of high-level committee consisting of stakeholders is necessary for the discussion regarding demarcation between new airport and the existing airport. Incorporation of aviation policy, such like dedicating the national flag carrier to the new airport, is necessary for differentiation with other airport. From tender through construction stage, the procurement process shall be controlled by the professional team (Project Management Consultant) consisting of well experienced experts.	From tender through construction stage, the procurement process shall be controlled by the professional team (Project Management Consultant) consisting of well experienced experts.	
Political Risk			

Sector: Industrial Areas (Urban Development/Industrial Estate)
Project Name: A.3 (1) Pilot Project of Urban Development/ Re-development

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Funding scheme should be established with GOI's support.	Government guarantee is required in order to enhance non-recourse finance or limited recourse finance	Provision of incentives such as subsidy and tax relief in order to enhance the implementation of technology and know-how of foreign companies (especially Japanese companies)
Legal Risk	Stagnant land acquisition leads delay of starting construction and increase of the cost at private sector. Land acquisition shall be taken care of by private sector. In order to promote the intensive use of the land, deregulation for floor area ratio and height of the building in the redevelopment area is required.	As an earthquake insurance rate is set uniformly. An earthquake insurance rate shall be set independently based on the seismic capacity of each structure.	Extension of land right such as construction right shall be decided based on the intention of the land right holder only. Extension of land right shall be allowed to the land owner (Currently, extension of land right such as construction right can be issued only once, hence the project owner who has received such right needs to collect its invested capital in the shorter term.)
Engineering Risk		Risk of EPC cost overrun Risk related with accidents Risk of flood. (Counter-measure is required. Provision of incentives such as subsidy and tax relief based on the capacity of impoundment in redevelopment area.)	
Institution Risk	It is required to prepare master plan for redevelopment including selection of the redevelopment area and redevelopment policy as well as to establish the regulation based on such master plan.	Local contractors will construct the systems. Project implementation organization needs to judge the credibility of the contractors.	Sidewalk connecting the redevelopment area to the public transportations such as trains and buses shall be developed by public fund before start the operation.
Political Risk	Inter-Ministerial Coordination Risk		

Sector: Industrial Areas (Urban Development/Industrial Estate)

Project Name: B.1 (1) Development of New Township (1/2)

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Funding scheme should be established with GOI's support.	Government guarantee is required in order to enhance non-recourse finance or limited recourse finance	Provision of incentives such as subsidy and tax relief in order to enhance the implementation of technology and know-how of foreign companies (especially Japanese companies)
Legal Risk	In order to promote the intensive use of the land, deregulation for floor area ratio and height of the building in the redevelopment area is required. Stagnant land acquisition leads delay of starting construction and increase of the cost at private sector. Land acquisition shall be taken care of by private sector. <East Jakarta Development> Risk that adequate land acquisition cannot be done. Above certain width of land such as hundreds hectare is necessary. Due to insufficient infrastructure or exhaust gas, wastewater, there is a risk of pollution. Stipulating of environmental regulation is necessary. (ex. Tianjin Eco-city in China, Cities in Japan) In Indonesia, portfolio of high, middle, low income residence is regulated. Project for low income residence could be low profit business. <Maja Development> Though efficient railway operation is required, actually national companies are of oligopoly in the market. Risk that know-how of private sector doesn't contribute.	As an earthquake insurance rate is set uniformly. An earthquake insurance rate shall be set independently based on the seismic capacity of each structure.	Extension of land right such as construction right shall be decided based on the intention of the land right holder only. Extension of land right shall be allowed to the land owner (Currently, extension of land right such as construction right can be issued only once, hence the project owner who has received such right needs to collect its invested capital in the shorter term.)
Engineering Risk	Risk of construction delay in basic infrastructure (such as electricity, water, road) lead developing area be "isolated island in the ground.	Risk of EPC cost overrun Risk related with accidents Risk of flood. (Counter-measure is required. Provision of incentives such as subsidy and tax relief based on the capacity of impoundment in redevelopment area.) <Maja Development> When the schedule of construction of double track and electrification of railway are delayed, there is a risk that resident invitation cannot done who plan to got to work toward Jakarta.	<Maja Development> In the case operation of railway to Jakarta is not done efficiently, there is a risk that resident invitation cannot done who plan to got to work toward Jakarta.

Sector: Industrial Areas (Urban Development/Industrial Estate)
Project Name: B.1 (1) Development of New Township (2/2)

	Planning Stage	Construction Stage	Operation Stage
Institution Risk	It is required to prepare master plan for redevelopment including selection of the redevelopment area and redevelopment policy as well as to establish the regulation based on such master plan. <East Jakarta Development> If leader company at Indonesia side doesn't exist, construction delay will occur due to lack of decision making. <Maja Development> There are so many stake holders involved in Maja development including central and local government. Agreement delay directly leads to delay of development schedule. Settlement of committee or public corporation is necessary.	Local contractors will construct the systems. Project implementation organization needs to judge the credibility of the contractors.	Sidewalk connecting the redevelopment area to the public transportations such as trains and buses shall be developed by public fund before start the operation. <Maja Development> There are so many private developers involved in Maja. There is risk that in correspondence in standard of infrastructure or inefficiency are occurred.
Political Risk	Inter-Ministerial Coordination Risk <East Jakarta Development> There is a risk the schedule of New Jakarta airport construction delay due to the relationship with Kertajati new airport.		

Sector: Industrial Areas (Urban Development/Industrial Estate)
Project Name: B.2 (1) Development of New Academic Research Cluster (1/2)

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Risk of being unable to collect enough funds for establishing the SPC or the parent organization for borrowing loans. Business risk for R&D is highly uncertain, in terms of content. It is difficult for lenders to make a comprehensive assessment of risks and revenues beforehand. Hence, agreement of revenue subsidies, like "Service purchase fee", for long term operation should be made between the government and the SPC. Soft loan from a foreign country may be a more realistic option than high-interest project financing.	Risk of not being able to construct, to the prescribed specification levels, within available budget. Cost management of local vendors/suppliers is needed. Risk of suspending construction caused by unexpected price changes and inflation. To reduce risk from economic fluctuations, the construction should be carried out in two phases, instead of one long stretch. The second phase funding will depend upon / reflect the business environment at that time.	Risk of insufficient revenue to cover maintenance and operation costs should be compensated through revenue subsidies, like "Service purchase fee". Fluctuations in currency exchange rate increase cost of imported goods like reagents, and inflation increases the cost of human resources. The increased costs may lead to risk of insufficient budget for research operations. Risk that parliament may cut subsidies if results of technology transfer to industry are lesser than expected. Risk of not being able to continue operations due to sudden changes in the economy. Risk that NARC may not attract enough interest due to international competition, and may be derailed midway.
Legal Risk	If necessary legislation is delayed or if required incentives like special zones etc are not secured, the project will not be able to attract business enterprises. Legislation required related to intellectual property (IP) rights. There is a need to promote IP protection and mobilization of technology transfer to industry. For smooth technology transfer to industries by applying for patents as the results of research, it is necessary to provide a law of "Technology Licensing Organization (TLO) " and system of "Microbial depositary" for patent application related to biological resources.	Risk that initial design approvals may be revoked in case of sudden changes in legislation.	Risk of lack of supportive legislation for operation and maintenance. Measures to reduce the cost burden of operations, example, patent maintenance costs, need to be secured through legislation. Changes in the tax regime may make operations and maintenance difficult, for example, tax incentives may be reduced or removed unexpectedly.

Sector: Industrial Areas (Urban Development/Industrial Estate)
Project Name: B.2 (1) Development of New Academic Research Cluster (2/2)

	Planning Stage	Construction Stage	Operation Stage
Engineering Risk		Risk of construction workers strike* Risk of soaring construction wages* Risk of construction materials cost-increase* Penalty for delay in completion* (* Risks for contractor) Risk of local contractor being unable to construct facilities to the prescribed specification levels.	Equipment failure, untreated wastewater spills caused by incorrect operation Equipment failure, power failure caused by incorrect operation during the experiment Shortage of power supply, regional power outage due to lightning Accidents, spills of harmful microorganisms, such as a virus Spill outside of the seed-recombinant Opposition campaign against recombinant DNA experiments by environmental protection organizations Opposition campaign against animal testing by animal welfare organizations, etc. Breach of researching by reducing technical capability due to outflow of talented researchers. Damage due to unidentified active earthquake fault
Institution Risk	Failure in providing state-owned land free of charge. If PPP process is organized directly by government, there may be a risk of lacking ability to handle processes of PPP tendering and agreement.	Risk of budget and schedule problems due to additional orders or changes in specification by business counterparts or stakeholders.	If the initial maintenance and operating costs especially in early stage are too high to bear for local business partners, there is a risk of them abandoning project. If amount or quality of research activities by BPPT, IPB and ITB, are not enough or not available within expected time-frames, they will not achieve the aim of technology transfer to industries.
Political Risk	Risk without any political support Inter-ministerial coordination risk Risk if consensus can't be unified between leader and his organization. To incubate ventures and to attract research institutions, additional incentives are needed since social benefits from research are difficult to quantify. For example, being designated as SEZs.	The effect political change by the year 2014 presidential election, such as business license revocation Discontinuance of revenue subsidies like "Service purchase fee" Business-incompatibility caused by changing laws and regulations Withdrawal / Cessation of land-lease Multiple approvals may be needed from the central government and the local authorities. If they have different policies or rules for assessment, problems may arise during construction and implementation phases. Hence, an integrated outlook is desirable.	The effect political change by the year 2014 presidential election, such as business license revocation Discontinuance of revenue subsidies like "Service purchase fee" Business-incompatibility caused by changing laws and regulations Withdrawal / Cessation of land-lease Withdrawal of resident companies due to changes of tax incentives Nationalization of business. Withdrawal of foreign companies due to political unrest To establish TLO business, long term help like subsidies and tax holiday are needed, as seen in the Japanese TLO examples. Along with operation fees, there should be continuity in government spending on subsidies and grants. Provision of grants should not be discontinued, in order to ensure smooth running of business.

Sector: Water Supply and Sewage System
Project Name: A.4 (2) Rehabilitation of Water Distribution Facilities in DKI Jakarta, Bekasi and Karawang, with the integration of DKI Jakarta – Bekasi – Karawang Water Supply (Jatiluhur)

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Unclear status of fund raising	Difficulty in fundraising during construction. Local banks tend not to take risks during construction, so it will be difficult to raise fund with Rupiah portion.	
Legal Risk	There is a case that project implementation organization and PDAM get environmental approval. It sometimes takes long time to get the approval. Support smooth processing for the approval by the government is required. Stagnant land acquisition leads delay of starting construction. Large-scale land acquisition is needed for the project.		Risk of compensation for the damage, in case problems of water quality happens
Engineering Risk		Risk of EPC cost overrun Risk related with accidents Risk due to environmental pollution	Risk of change in quality and quantity of law water before treatment Risk of performance by constructed facilities Risk of shutdown due to power failure, force majeure, insufficient EPC Risk of penalty due to the shutdown
Institution Risk	Risk of coordination among the concerned government agencies. It will take long time to coordinate opinions, because a variety of organizations are to be involved.	Risk of EPC contractors. Local contractors will construct the systems. Project implementation organization needs to judge the credibility of the contractors	Risk of security failure for facilities and pipe lines by terrorism Risk of default by local autonomy
Political Risk	Facilities such as pump, pipes, reservoir, do not contribute fee collection. It will take time to conclude the negotiation for deciding target IRR, executing body, tender conditions, etc.		Risk of impossibility of get approval for operation Risk of impossibility of retreat

Sector: Water Supply and Sewage System
Project Name: A.4 (3) Development of Sewerage System in DKI Jakarta

	Planning Stage	Construction Stage	Operation Stage
Financial Risk		Difficulty in fundraising during construction. Local banks tend not to take risks during construction, so it will be difficult to raise fund with Rupiah portion.	BOT operator will get all revenue on Rupiah basis. The contract period is about 30 years, so the operator will have to be in the risk of currency exchange for a long time. The risk should be hedged in the contract of selling water. There is a possibility to largely increase in O&M cost due to inflation. The risk should be also changed in the contract of selling water. Financing period is short for long project period, so the operator needs to get re-finance. The interest rate of the finance will change.
Legal Risk	There is a case that project implementation organizations get environmental approval. It sometimes takes long time to get the approval. Support smooth processing for the approval by the government is required.		Risk of compensation for the damage, in case problems of water quality happens
Engineering Risk		Risk of EPC cost overrun Risk related with accidents Risk due to environmental pollution	Risk of change in quality and quantity of law water before treatment Risk of performance by constructed facilities Risk of shutdown due to power failure, force majeure, insufficient EPC Risk of penalty due to the shutdown
Institution Risk	Risk of coordination among the concerned government agencies. It will take long time to coordinate opinions, because a variety of organizations are to be involved.	Risk of EPC contractors. Local contractors will construct the systems. Project implementation organization needs to judge the credibility of the contractors	Risk of default by local autonomy
Political Risk	It will take time to conclude the negotiation for deciding target IRR, executing body, tender conditions, etc.		Risk of impossibility of get approval for operation Risk of impossibility of retreat

Sector: Water Supply and Sewage System
Project Name: A.4 (4) Development of Water Supply Systems for Large-scale Infrastructure Development

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Price of water in DKI Jakarta has not changed since 2007. The larger the scale of the project with BOT, the more expensive the price of selling water is and implementation of the project will be difficult.	Difficulty in fundraising during construction. Local banks tend not to take risks during construction, so it will be difficult to raise fund with Rupiah portion.	BOT operator will get all revenue on Rupiah basis. The contract period is about 30 years, so the operator will have to be in the risk of currency exchange for a long time. The risk should be hedged in the contract of selling water. There is a possibility to largely increase in O&M cost due to inflation. The risk should be also changed in the contract of selling water. Financing period is short for long project period, so the operator needs to get re-finance. The interest rate of the finance will change.
Legal Risk	There is a case that project implementation organization and PDAM get environmental approval. It sometimes takes long time to get the approval. Support smooth processing for the approval by the government is required. Stagnant land acquisition leads delay of starting construction. Large-scale land acquisition is needed for the project.		Risk of compensation for the damage, in case problems of water quality happens
Engineering Risk		Risk of EPC cost overrun Risk related with accidents Risk due to environmental pollution	Risk of change in quality and quantity of law water Risk of performance by constructed facilities Risk of shutdown due to power failure, force majeure, insufficient EPC Risk of penalty due to the shutdown
Institution Risk	Risk of coordination among the concerned government agencies. It will take long time to coordinate opinions, because a variety of organizations are to be involved.	Risk of EPC contractors. Local contractors will construct the systems. Project implementation organization needs to judge the credibility of the contractors	Risk of security failure for facilities and pipe lines by terrorism Risk of default by local autonomy
Political Risk	Contract for sale water as bulk water is prospected. The price of water has not changed in Jakarta, so it will take time to conclude the negotiation for deciding target IRR, executing body, tender conditions, etc.		Risk of impossibility of get approval for operation Risk of impossibility of retreat

Sector: Electric Power Infrastructure
Project Name: D.1 (2) Construction of Indramayu Coal-fired Power Plant as FTP 9.2

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Conclusion of Sub-Loan agreement and L/A (engineering service) between GOI and JICA is crucial.	Based on the experience of other projects, there is a risk that payment will delay from the client to EPC contractor.	
Legal Risk			
Engineering Risk		It is necessary to make the contract into one package of Boiler, Turbine, and Generator, considering the necessity of high reliability and short delivery time.	Considering the scale of the project, high reliability and exact operation manner is necessary.
Institution Risk	Considering the present serious shortage of the power in Java-Bali grid, process of project is to be hastened with follow-up among related institutions in Indonesian government.		
Political Risk			

Sector: Electric Power Infrastructure
Project Name: D.1 (6) Construction of Java-Sumatra Interconnection Transmission Line as FTP 9.1

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Approval of Sub-loan agreement for construction is crucial.	Based on the experience of other projects, there is a risk that payment will delay from the client to EPC contractor.	
Legal Risk	Stagnant land acquisition leads delay of starting construction.		
Engineering Risk		Main equipment of converter (thyristor valve etc) shall be manufactured in the factory satisfying the required quality control ability, considering its capability to mass power transmission to Java.	Considering the scale of the project, high reliability and exact operation manner is necessary.
Institution Risk			
Political Risk			

Sector: Electric Power Infrastructure
Project Name: D.1 (7) Other Renewable and Low-Carbon Emission Power Projects connecting to Java-Bali-Sumatra Power Network

	Planning Stage	Construction Stage	Operation Stage
Financial Risk	Listing on Blue Book and Finance Request should be important. No loan has been committed to Patuha units 2/3 and Dieng units 2/3 due to the potential risks in the primary development stage.	There is also no commitment of loan for the construction stage of Patuha units 2/3 and Dieng units 2/3.	The employer, PT Geodipa, seems financially incapable to keep operation.
Legal Risk	Huge time and effort shall be required to obtain the authorization from ministry of forest. Furthermore, the same authorizations from local governments either require long time and effort.	The government warrants the PLN's contract execution after the commencement of operation of Patuha units 2/3 and Dieng units 2/3, but the execution in the term of construction is not covered.	
Engineering Risk	Delay of geothermal resource study would cause the delay of project development accordingly.		
Institution Risk			
Political Risk			