

# 3. Preliminary Design and Cost Estimate of Case Study Facilities

## 3.1. Preliminary Design of Port Facilities

### A. Present Conditions of the planned area

**539.** Subsequently after the JICA study was completed in 2003, IPC2 during 2004 to 2007 constructed a cargo berth of 102m in length, 30 m in width and 16m in depth, supported by steel pipe pile foundation on the same alignment of the berth face line as planned originally for the container berth by the JICA Study 2003. IPC2 plans to expand the berth length of 200m to 300m in total and to start the construction works from May, 2009. Large excavation works of stone quarry are being executed from the hills and slope of the mountain located around the new port hinterland area.

**540.** The port area along the sand beach area is used for anchorage of a barge 6000 to 8000 DWT to load stone quarry. The access road around the new port area is not rehabilitated yet by the reinforced concrete pavement.

**541.** The development of the new port at Bojonegara for the international container handling terminal as the case study for which facilities are planned and designed based on the design criteria as below requires the following construction works.

#### B. Design Criteria

**542.** The design criteria of marine and civil works conform to the following design standards and reference:

- Indonesian Standard PBI (Peraturan Beton Indonesia 90-91) 80, Indonesian Concrete Design;
- Standard National Indonesia 1991-63 Design Standards of Concrete Structure;
- Standards Design Criteria for Ports in Indonesia, 1984;
- > Technical Standards and Commentaries for Port and Harbor Facilities in Japan, 2002;
- > Indonesia Highway Capacity Manual in 1997 Ministry of Highways and Public Works.

#### (i) Design container ships

**543.** The dimensions of the ships used for the design of new port facilities are summarized in the table below taken form the JICA Study 2003.

#### Table 3.1-1 Objective Ship Size of the Project Ports for 2025

Project Port	Type of Vessel	DWT	LOA (m)	Draught (m)
New Bojonegara Port	Container ship International	50,000 GT	270	12.7







# (ii) Natural Conditions for Preliminary Design of Project Facilities

## a) Tide, Current Wave Conditions

	Bojonegara Port
Tide (cm) <sup>1</sup>	
High Water Level (HWL)	+103.0
Mean Sea Level (MSL)	+58.00
Design Low Tide Level (DLT)	0.0
Current (m/sec) <sup>2</sup>	
Maximum velocity	0.50
Wave at Berth,	
Significant Wave Height $H_{1/3}(m)$	0.50
Significant Wave Period T <sub>1/3</sub>	Less than 2 sec
Wave at Breakwater	
Significant Wave Height $H_{1/3}(m)$	2.0 to 2.5
Significant Wave Period T <sub>1/3</sub>	Around 4 sec

### b) Design Wind

544. Design Wind is applied as same condition as described in Table 6.3-1 in Chapter II.

### c) Soil Conditions at Bojonegara Area

**545.** According to the geotechnical investigation in the new Bojonegara port area, the following parameters are used for the preliminary design for the new Bojonegara port facilities.

	Deep Area			Shallow Area
10.0 m	Sandy clay		0 m	Silty clay N= 1-3
-10.0 III	N = around 10  or more			
	Sand clay		-5 m	Silty Clay, $N = 12$ on average
-15.0 m	N = around 10-28		-5 111	$c = 30$ kPa, $\phi = 25^{\circ}$ , $\gamma' = 0.9$ tf/m <sup>3</sup>
	$c=30 \text{ kPa}, \phi=25^{\circ}, \gamma'=0.9 \text{ tf/m}^3$			
	Bedrock and Clay			Groupl and Padrock
-20.0 m	(Dense to very dense)		10 m	N = around 20 and more than 50
	N = more than 50	-10 m		N = around 50 and more than 50 $a = 0.120a d = 25^{\circ} u^{2} = 1.0 tf/m^{3}$
	$c = 0$ kPa, $\phi = 35^{\circ}$ , $\gamma' = 1.0$ tf/m <sup>3</sup>			$c = 0$ KPa, $\phi = 55^\circ$ , $\gamma = 1.0$ tl/m

# (iii) Design Conditions of Berthing Structure

# a) Crown height

**546.** The crown height of the berth is normally determined by the following formula:

H = HWL + (1.0 to 2.0 m);(large vessel with a water depth of 4.5 m or more and tidal range smaller than 3.0m)

H = HWL + (0.5 to 1.5 m);

(small vessel with a water depth less than 4.5 m and tidal range smaller than 3.0m)







**547.** The crown height affects greatly the construction cost of the port. As a preliminary design of the container wharf structure at Bojonegara new port, the crown height is fixed at 3.5m above MLLW considering the ship size and required efficiency of cargo handling operation.

HWL + 2.0 m +  $H_{1/3}$  = DL+ 3.5 m

#### b) Surcharge Loads on the Wharf; 2.5 t/m2

**548.** On the apron of the berths of the port, the following surcharge is considered as a dead load by assuming temporary stack of containers;

- > Normal condition:  $2.5 \text{ tf/m}^2$
- Seismic Condition:  $1.0 \text{ tf/m^2}$ . (50% of the normal condition)

#### c) Seismic Coefficient

**549.** The seismic coefficient for the proposed port facility and access road structure are computed by applying the following factors:

- The West Jawa Province is located in the zone 3 of the regional seismic coefficient under stiff soil, C = 0.05
- Stiffness Factor of structures; K = 1.0
- $\blacktriangleright \quad \text{Importance Factor;} \qquad \qquad \text{I} = 1.5$
- $\blacktriangleright K_{h} = K \ x \ C \ x \ I = 1.0 \ x \ 0.05 \ x \ 1.5$
- $\geq$  = 0.075 (for the Bojonegara and Tg. Priok port facility)
- $\succ$  K<sub>v</sub> = not considered = 0
- **550.** It is therefore recommended to adopt 0.1 for K<sub>h</sub> for the Bojonegara port facilities.

#### d) Wheel Load as live loads by gantry crane

#### Live Loads

**551.** Quay wall structures of container berth are designed to sustain the following container cranes with the provisions of their foundation:

- ▶ Rail Gauge : 30 m
- Overall Weight : approximately 750 tf/unit;
- Nominal rated capacity: 41 tf under spreader.

**552.** In the design of the apron, only trailer trucks and standard trucks with full loaded containers are considered as handling equipment and the following wheel loads are considered:

- Standard Truck (H22 44) : 8.0 tf/wheel
- Tractor Trailer (40'): 5.8 tf/wheel







Table 5.1-2 Loading Conditions of the C	ontainer what at bojonegara new rort
Uniform Distributed Load	$2.50 \text{ t/m}^2$ (without QGC)
Uniform Distributed Load	1.35 t/m <sup>2</sup> (with QGC)
The worst possible combination of live Load	Loads of equipment is shown in Table 10-H-15
generated by cargo handling equipment and	of the JICA Study 2003 (Impact factor shall be
transporting equipment	considered)
Gantry Crane Load	50.0 trated load x 30 span x 36 to 38 m outreach

#### e) Tractive Force and Berthing Force

#### Mooring

**553.** Tractive force acting on mooring bitts is set at 100 tf per unit for the vessels from 10,000 to 50,000 DWT which are spaced at 35 m.

#### Fender System

**554.** For design of the fender system to absorb the shock of ship berthing energy, berthing speed of vessels to be adopted is as follows:

- ➤ 10,000 ~ 20,000 DWT 0.15 m/sec.
- ➢ 20,000 ~ 50,000 DWT 0.10 m/sec

#### (iv) Design of Yard and Pavement

**555.** Based on the operation planning inside the container terminal of the new Bojonegara port and selection of the pavement type to be adopted, the following wheel loads are the critical condition for each type and area of the pavements, on which the design will be conducted:

**556.** Special provision of pre-stressed concrete block slab pavement is adopted for the track of rubber transfer cranes (RTG), whose wheel loads exceed well enough 40 tf/wheel.

**557.** The pavement of the parking lots on the reclaimed land for container terminal and logistic area will be by interlocking concrete blocks.

							0
	A	Container Ar	Container Terminal Area Stocl		Yard	Passage Area	
Particulars	Service Road	Berth / Apron	Road way	RTG passage way	Stock yard	Passage way	Yard Area
Critical Wheel Load Type	Standard Truck (H20-44)	Standard Truck (H20-44)	Forklift Truck (25 tf)	RTG (40ft)	Reach stacker (4.5 tf)	Standard Truck (H20-44)	Forklift Truck (25 tf)
Critical Wheel Load (ton)	8.0	8.0	12.8	40	8.1	8.0	12.8
Pavement Type	Concrete	Concrete	Concrete	PC slab	Inter-lock block	Concrete	Concrete

 Table 3.1-3 Critical Wheel Load for Pavement Design

PC slab: pre-stressed concrete block slab







# 3.2. Major Facilities Design

## A. Breakwater: 1,500 m

**558.** The breakwater is required to obtain sufficient calmness for container handling under the wave height over 50 cm during the rough weather season. According to the study of calmness of the basin and channel by the JICA study, the required length of the breakwater is estimated at 1,500 m.

**559.** The breakwater is planned to form a entrance channel from the north direction and to extend in parallel to the future container terminal development. The breakwater will be extended in line with the expansion of the container terminal by phased development.

**560.** The typical cross-section is shown in Figure 3.2-1. The total volume of materials for the breakwater is calculated  $615,000 \text{ m}^3$  (including void volume). It is expected to take about 3-year's construction period for the breakwater.



#### Figure 3.2-1 Typical Cross Section of Bojonegara Breakwater (Rubble Mound Sloping Type)

# B. Channel and Basin

**561.** Based on the revised alignment of the channel and location of the breakwater, the required volume is estimated at  $5,400,000 \text{ m}^3$ .

**562.** According to the Bojonegara Port Project Office of IPC2 in Cilegon, 400,000  $\text{m}^3$  of seabed soil has been dredged in front of the existing quay facility (102 m long) in 2004 - 2005. And further dredging volume (2,000,000  $\text{m}^3$ ) is planned in the water area in front of the quay extension work (200 m long extension to the existing quay) which has been contracted already in March 2009.

**563.** Hence, total dredging volume of 2,400,000  $\text{m}^3$  is deducted from the above estimate (5,400,000  $\text{m}^3$ ), and the design volume of dredging is consequently calculated as 3,000,000  $\text{m}^3$ .







**564.** Basin in front of the planned container berth will be designed to dredge 540 m in diameter circular and depth up to -14m and turning basin in front of the multi-purpose berth will be designed to dredge 300 m dia circular and depth up to 10m.

**565.** The dredging works in front of the new jetty construction by IPC2 were carried out by using grab dredgers for removal of weather rock and alluvium material. The efficiency of dredging works by grab dredger was almost same monthly output as estimated for the JICA Study 2003. Therefore the dredging works are planned to be carried out by using grab dredgers.

## C. Container Terminal

### a) Quay Wall

Design depth DL-14 m, length 600 m by Caisson; L: 20 m x W: 13.5 m x D: 15.5 m structure.

**566.** Considering the soil conditions and gentle slope of seabed topography, two alternatives types of berth foundation i.e. Caisson type and Steel Pipe Sheet Pile (SPSP) type are compared. Based on experiences in construction works of the berth designed by steel pile support, the SSP type requires a lot of time for pile driving and also driving anchor pile through the main steel pile to obtain the required bearing strength.

**567.** The process of pile driving begun with the removal of existing surface soil up to depth of -10 to -12 m. The main steel piles (dia 900 mm) were driven up to depth of -21.7m, then anchor piles from the tip of the driven steel piles were driven up to -35m through the hard rock layer.

**568.** Based on experience with pile support berth structure by IPC2, the caisson type foundation as proposed in the JICA Study 2003 is adopted for the case study. Reference is made to Figure 3.2-2 for typical cross-section of the quay wall.

**569.** A month is assumed to be required for each step of caisson fabrication and installation.

# b) Quay Crane Foundation for Container Berth

**570.** The rear container crane rail foundation piles are installed at 30 m span for the crane wheel gauge from the sea side foundation piles separately from caisson foundation for crane installation.

# c) On land Excavation

 $\triangleright$  2,500,000 m<sup>3</sup> area from Tanjung Awuran, and access road area of 60 m wide.

# d) Revetment (West end / East End) for the reclamation of the yard area

► L=300 m.

**571.** The revetment wall is designed by Gravity Type (Concrete Block wall is placed on the stone mound from the shore to depth of-8 m).

**572.** Since the planned revetment is not used for berthing purpose by large vessels and considering the soil conditions of the revetment foundation on the sea bed, type of structure of the revetment is designed to be concrete blocks. Typical cross sections of the revetment are presented in Figure 3.2-3.

#### e) Reclamation

> 575,000  $\text{m}^3$  up to the formation level DL+3.5 m.







#### f) Yard Pavement

208,000 m<sup>2</sup> assuming 15 lanes x 23.5 m x (16 Bays + 17 Bays)

### g) Passage Pavement

 $> 152,000 \text{ m}^2$ 

**573.** The surface of the reclaimed area for container storage yard will be paved with interlock concrete block on the cemented treated sand fill. The runway of rubber tired gantry cranes and container trucks in the container stock yard area are paved with pre stress concrete blocks. The port road area is paved with concrete.

#### h) Utility Facilities

**574.** Power-supply, water-supply, communication, storm drainage and so on are considered as the utility facilities of the container terminal

#### D. Buildings

**575.** The following buildings and their dimensions are planned to be functioned the container terminal normally.

- $\blacktriangleright \quad \text{Office Building:} \qquad 3,500 \text{ m}^2$
- Maintenance and Repair Shop; 2,800 m<sup>2</sup>, out of which for Equipment: plan to have 2,300 m<sup>2</sup> and; for container boxes having 500 m<sup>2</sup>
- $\blacktriangleright$  Terminal Gate 2,700 m<sup>2</sup>
- $\blacktriangleright \quad \text{Fuel Station} \qquad 420 \text{ m}^2$
- $\blacktriangleright$  Miscellaneous 440 m<sup>2</sup>
- E. Port Related Area
- **576.** Port Related Area west of the container terminals are designed as follows:
  - Revetment: Design depth DL-10m, length 180 m constructed by Gravity Type (Concrete Block) for retaining wall
  - Reclamation (from the existing sea bed to +3.0 m) estimated volume will be 151,200 m<sup>3</sup> Average elevation of the planned yard = +1.5 m
  - ➤ Wave-absorbing Work; 40,000 m<sup>3</sup> Rubble-stone Work is planned in front of the revetment walls of the Logistics area and container berth as wave absorbed facilities;
  - > Yard Pavement 75,600  $\text{m}^2$  Area is 180 m x 420 m
  - Container Freight Station; Floor area: 6,400 m<sup>2</sup>
  - Utility Facilities









Figure 3.2-2 Typical Cross Section of Quay Wall (Bojonegara, Caisson Type, -14 m)









(Design Depth: -10 m) Figure 3.2-3 Typical Cross Sections of Revetment at Bojonegara (Concrete Block Type)

# 3.3. Preliminary Design of Access Road

**577.** At present the existing road is a provincial road. The provincial government of Banten proposed to the central government that the existing arterial road be upgraded to a national road. The access road will be planned by using the existing Provincial Road to the maximum extend possible,





therefore construction activities will include widening, paving and short-cutting in order that large container vehicles can move smoothly.

**578.** A new alignment of the access road should be studied by widening the existing access road and by minimizing the round-about way of the residential and factories areas.

**579.** The access road will be developed by improving the existing arterial road as follows:

- > A 2-lane upgraded arterial road would be adequate for the local and port traffic until 2016.
- > After 2016, widening to 4 lanes would be required.

**580.** The design criteria of civil works and access road should conform to the following design standards and reference:

- Indonesian Standard PBI (Peraturan Beton Indonesia 90-91) 80, Indonesian Concrete Design;
- Standard National Indonesia 1991-63 Design Standards of Concrete Structure;
- > Indonesia Highway Capacity Manual in 1997 Ministry of Highways and Public Works.

**581.** The typical cross-section for the planned access road as a new road is shown in Figure 3.3-1. It is planned to provide the 2-lane access road for the short-term development plan. In order to facilitate future widening a 50m ROW is required. Such widening would utilize the median. The outside shoulder would be wide enough to accommodate immobilized vehicles without blocking the traffic lanes.

**582.** The pavement will be designed for 10-ton axle loads as recommended by the Heavy Loaded Road Improvement Program (HLRIP). The pavement structure is assumed to be similar to that used for Jakarta Inter Urban Toll way as follows:

- Asphalt Cement wearing course: 50 mm
- ➢ Asphalt Cement binder course: 100 mm
- ➢ Asphalt treated base: 350 mm
- ➢ Granular sub-base: 400 mm
- Select material for top of sub grade.

**583.** Grade-separated structures will be ultimately required where the new access road intersects the Jakarta-Merak Toll way and all river and road crossing. However the optimum number of grade-separations should be considered, especially at the road crossing in the early stages of the development when traffic is not heavy, which could minimize the initial investment cost. The typical overpass structures will be constructed with PC-I Girder Bridge. Alternative steel design should be considered for major river crossings.







Figure 3.3-1 Typical Cross Section of Access Road to Bojonegara New Port

# 3.4. Cost Estimate of Port Facilities

# A. Cost Hearings and Collection of Information

**584.** The development project of Bojonegara New Port was studied in the previous JICA Study2003 in 2002 - 2003, and the cost estimate for the construction of the port and procurement has been carried out already.

**585.** The basic prices for cost estimate (unit prices of Construction Labor, Material and Equipment) have experienced big changes since the previous JICA Study 2003, and a 100-m quay wall construction was carried out at the project site of Bojonegara Port in 2004 - 2005.

**586.** In order to revise the cost estimate of the port construction, information collection and hearings were carried out by visiting the project offices of IPC2 in Cilegon and the contractor company of the quay wall at the Bojonegara site. The project offices visited by the Study Team were as follows.

- > IPC2, Bojonegara Port Project Office, Cilegon, Banten Province
- > PT Pembangunan Perumahan (PT PP), Marketing Division, Head Office, Jakarta

**587.** The information collected through those hearings was used to verify the estimated prices and the condition of the construction works based on the actual experience at the Bojonegara site.

# B. Unit Prices of Cost Estimate

**588.** Unit prices of each element of construction works such as labor, construction material and construction equipment are determined on the basis of the information collected from the major local construction companies in Jakarta obtained in the field study (March 2009).

**589.** The basic wages of construction laborers and unit prices of construction materials are common with the prices of West Java Area which are already presented in Table 6.4-1 and Table 6.4-2 in Chapter II







**590.** Each unit price was split into foreign currency and local currency portions, both indicated in Rupiah, estimated in the following classifications;

- > The foreign currency component consists of:
  - Imported construction materials
  - Foreign components of depreciation and operation/maintenance cost for construction equipment and plant
  - Foreign component of domestic materials
  - Salaries and costs of foreign personnel
- > The local currency component consists of:
  - Local construction materials
  - Local components of depreciation and operation /maintenance cost for construction equipment and plant
  - Salaries and costs of local personnel
  - Import duty on imported materials
  - Indonesian taxes

**591.** The basic prices are as of April 2009 and the foreign exchange rate is given as follows considering the current trend in the market as of March and April 2009. Reference is made to Figure 6.4-1 in Chapter II for the fluctuation of the exchange rate between the Indonesia Rupiah and US Dollar

#### 1 USD = 11,000 Rupiah = 100 Yen

#### C. Basic Cost of Construction Works

(i) Combined Cost for Major Works

**592.** The breakdown of unit costs of the construction works are prepared by accumulating costs of labor, materials, equipment and also the indirect costs such as mobilization, general temporary works, overheads profit and so on.

**593.** While the cost of the works such as building works, fabrication of cargo handling equipment, supply of utilities and demolition works are hindcasted on the basis of the empirical prices collected from the major contractors which have experience in the fields.

**594.** Price of imported products such as cargo handling equipment, fender systems, bollard and navigation aids are to be estimated based on the CIF Jakarta price and adjusted considering import tax and some mobilization fee to the construction site.

**595.** The combined costs for major construction works are estimated from the costs of labor, required materials, required construction equipment, and the site expense of labor and equipment. Table 3.4-1 presents the combined cost of major work items for the development of Bojonegara New Port, Banten Province.





Work Item	Description	Unit	Unit Price
Breakwater	Rubble-mound type; DL-12 m	m	199.0 million Rp
Quay Wall	Caisson type; design depth DL-14 m	m	312.8 million Rp
Revetment	Gravity type; design depth DL-8 ~ -10 m	m <sup>2</sup>	139.3 million Rp
Dredging (Soft soil)	SPT-N< 15; Grab dredging	m <sup>3</sup>	56,000 Rp (5.09 USD)
Dredging (Medium)	15 < N < 40; Grab dredging	m <sup>3</sup>	100,200 Rp (9.11 USD)
Dredging (Hard Rock)	N > 40	m <sup>3</sup>	500,000 Rp (45.45 USD)
Buildings	Container Terminal	m <sup>2</sup>	200 ~ 500 USD
Port Access Road	At-grade Road with compensation	m	13.5 million Rp
Land Acquisition		m <sup>2</sup>	250,000 Rp

<b>TIL 241</b>	<b>a</b> 1. 1	0 10	<b>N</b> <i>T</i> <b>•</b>	<b>C ( ( ( ( ( ( ( ( ( (</b>	XX7 1 /	<b>D</b> ·
1able 3.4-1	Combined	Cost for	Major	Construction	WORKS (	Bojonegara)

**596.** Particular local conditions were taken into consideration for the cost estimate of the work items reported in the following sub-sections.

# (ii) Dredging at Bojonegara

**597.** A seismic survey for sub-seabed stratigraphy of the Bojonegara port development site was carried out in the JICA Study 2003. And based on the results of the survey and offshore boring surveys at the development site, the sub-seabed materials were classified into the two categories in accordance with working performance assuming the method of Grab Dredging. Reference is made to Table 3.4-2 and Table 3.4-1(Top).

 Table 3.4-2 Component of Dredging Materials conducted by JICA Study 2003

Classification of Sub-seabed Material	Alluvium	Weathered Rock
Ratio of Dredging Volume by Material	82 %	18 %
Production per day	6.750 m <sup>3</sup> /day	1,290 m <sup>3</sup> /day



**Figure 3.4-1** Component of Dredging Materials at Bojonegara Site

**598.** According to the hearing at the Project Office of IPC2, a 400,000m<sup>3</sup> dredging work of the seabed was actually carried out at the Bojonegara site accompanying the quay wall construction in 2004 - 2005, where the grab dredger encountered a layer of hard rock which was necessitated blasting. The firmness, volume of the seabed materials, and the productivity of dredging was advised as follows by the engineers from IPC2 and the contractor (PT PP). Reference is made to Table 3.4-1(Middle) and Table 3.4-3.







Classification of Material	Alluvium	Medium Soil (Weathered Rock)	Hard Rock
Firmness	SPT-N < 15	15 < N < 40	N > 40
Ratio of Volume by Material	88 %	around 9 %	2.5 ~ 3 %
Production per day	6,000~7,000 m <sup>3</sup> /day	around 2,000 m <sup>3</sup> /day	200 m <sup>3</sup> /day with blasting

|--|

**599.** Based on the actual dredging records and the experience at the Bojonegara site, the component ratio of the seabed materials is given in Table 3.4-1(Bottom). The unit prices of the dredging are estimated in accordance with the dredging productivity of each component of the seabed material assuming grab dredging with blasting as presented in Table 3.4-4Table 3.4-4. Total work period of 30 months (2.5 years) is required for the dredging work of 3 million m<sup>3</sup>.

Tuble 511 11 Toductivity and Daration of Dreaging (vorks (Dojonegara)				
Classification of Material	Alluvium	Medium Soil (Weathered Rock)	Hard Rock	
Firmness	SPT-N < 15	15 < N < 40	N > 40	
Ratio of Volume by Material	85%	10 %	5 %	
Production per month (28 days)	6,750 m <sup>3</sup> /month	98,000 m <sup>3</sup> /month	5,600 m <sup>3</sup> /month with blasting	
Design Volume	$2,550,000 \text{ m}^3$	300,000 m <sup>3</sup>	150,000 m <sup>3</sup>	
Duration of Dredging Work	13.5 months	3.1 months	13.4 months by deployment 2 teams	
Total Work Period	<b>30 months</b> for Total 3,000,000 m <sup>3</sup>			

 Table 3.4-4 Productivity and Duration of Dredging Works (Bojonegara)

# (iii) Container Handling Equipment

**600.** The prices of the container handling equipment for the Bojonegara New Port are given as follows based on the survey of the recent market prices.

Table 3.4-5 Unit Prices of Conta	iner H	andling Equip	ment
		Unit Price (USD)	

	Unit Price (USD)
per unit	8.0 million
per unit	1.9 million
per unit	0.4 million
per set	0.2 million
	per unit per unit per unit per set

# (iv) Siltation and Maintenance Dredging

# a) Seabed condition at the Bojonegara site

**601.** The distribution of the sediment materials at the seabed surface is understood from the soil investigation surveys and geological profile of the Bojonegara site in the JICA Study 2003. Reference is made to Pp. B-50 - B-55, Appendix B: Natural Conditions Survey, Supporting Report of Engineering Study, December 2003.

**602.** According to the study results, the seabed surface is covered by silt or clay where the points are located in the water area sheltered by the two islands (Pulau Kali) in front of the port development





site. On the other hand, the seabed consists of sand, gravel or coral where the points are located out of the sheltered area and exposed to the wave action.

**603.** Siltation will be sure to take place in the calm water area (channel and harbor basin; around 100 ha) sheltered by the breakwater of Bojonegara new port. However, the rate of siltation has not been studied

#### b) Siltation study in Tanjung Priok

**604.** The Supporting Report of the JICA Study 2003 provides the information on the seabed changes in the harbor basins (Kolam Pelabuhan I, II and III) of Tg. Priok. Reference is made to Pp. B-37 - B-39, Supporting Report of Engineering Study, December 2003.

**605.** According to the study results, the yearly changes of the seabed in the sheltered harbor basins are given as  $0.12 \sim 0.18$  m. The rate of siltation in the channel and basin of Bojonegara New Port (100 ha) is assumed as 0.2 m/year based on the record at Tg. Priok port. Hence, the annual volume of the siltation is calculated; 0.2 m/year x 100 ha = 200,000 m<sup>3</sup>/year.

#### c) Cost of Maintenance Dredging

**606.** The record of maintenance dredging and the cost are summarized as follows according to the JICA Study 2003. The cost of maintenance dredging in the following table is based on the contract between IPC2 and PT RUKINDO.

Year	Volume of Maintenance Dredging (m <sup>3</sup> )	Cost of Dredging (1,000 Rp)	Unit Rate of Dredging (Rp/m <sup>3</sup> )	Remarks
1996	458,314	1,933,565.3	4,219	
1997	367,938	1,802,623.6	4,899	Economic Crisis
1998	147,418	1,302,602.0	8,836	
1999	95,157	1,875,154.0	19,706	
2000	646,057	5,627,728.0	8,704	Average 1998 - 2001
2001	538,955	6,315,369.0	11,718	<b>12,241</b> Rp/m <sup>3</sup>

 Table 3.4-6 Cost of Maintenance Dredging at Tg. Priok Port

Source: Pp. B-35, Appendix B: Natural Conditions Survey, Supporting Report of Engineering Study, December 2003

**607.** Assuming that maintenance dredging at Bojonegara new port is carried out by PT RUKINDO, same as with Tg. Priok port; the unit rate of dredging is given as  $12,500 \text{ Rp/m}^3$  for Bojonegara.

**608.** Hence, the cost of maintenance dredging at Bojonegara New Port can be estimated as follows; 12,500 Rp/m<sup>3</sup> x 200,000 m<sup>3</sup>/year = 2.5 billion Rp/year.

**609.** This value is equivalent to 1 % of the cost for capital dredging  $(3,000,000 \text{ m}^3)$  of the channel and basin at Bojonegara new port.

# (v) Port Access Road

**610.** Cost estimate for construction of the Port Access Road (Cilegon ~ Bojonegara) was carried out referring to the estimate by the Ministry of PU (Pekerjaan Umum) in the report; Pekerjaan Penyusunan Studi Kelayakan dan Desain Tender Investasi Jalan Tol; Ruas Cilegon - Bojonegara, Januari 2006.







**611.** In the PU report, the dimensions of the port access road construction had been planned as follows:

۶	Length of construction division:	15.69 km
$\triangleright$	Right of Way (RoW):	60 m
$\triangleright$	Total Land requirement:	110 ha (1,101,363 m <sup>3</sup> )
$\triangleright$	Construction Cost of Road:	457 billion Rupiah
$\triangleright$	Cost of land acquisition and compensation:	139 billion Rupiah

**612.** Port Access Road (design length: 14.5 km) from Cilegon to Bojonegara is planned as the improvement of the existing Provincial Road, and cost estimate for the Port Access Road (Cilegon  $\sim$  Bojonegara) was carried out taking the following conditions into consideration.

- National Road At-grade L=14,500 m RoW = 38 m, 2 Lanes
- Compensation and rehabilitation of 5 river bridges (705 m<sup>2</sup>) for reinforcement
- > Underpass and Box-culvert, 20 Nos are to be installed
- Utility Facilities (road lighting,

**613.** Land requirement for the construction of At-grade National Road was estimated as 342,494 m<sup>2</sup>. Reference is made to Pp. A-20 ~ 23 of Supporting Report of Engineering Study, JICA Study Report (December 2003).

**614.** The unit price for land acquisition and compensation is calculated as 126,207 Rupiah/m<sup>2</sup> (estimate as of 2005). However it was advised that the actual prices applied to the land compensation in the Bojonegara region were 200 ~ 250,000 Rupiah/m<sup>2</sup>. Hence, the unit price of 250,000 Rp/m2 was adopted to estimate the project cost.

# (vi) Project Cost

**615.** Project cost for the development of Bojonegara new port and construction of Port access road is estimated in Tables 3.4-7 and Table 3.4-8.

**616.** Total construction cost for the Bojonegara new port development is estimated at around 3,314.5 billion Rupiah (301 million USD) and can be broken down as follows.

- Construction of Container Terminals (CT1 and CT2; 2 berth x 300 m)
- 1,796.5 billion Rupiah (163.3 million USD)
- Container Handling Equipment (6 x QGC, 20 x RTG and miscellaneous)
- > 1,106.6 billion Rupiah (100.6 million USD)
- Port Access Road (Cilegon ~ Bojonegara; 14.5 km)
- > 283.9 billion Rupiah (25.8 million USD)
- > Administration Cost and Engineering Fee
- > 127.5 billion Rupiah (11.6 million USD)







Description	Unit	Quantity	Local (1,000	Portion Rupiah)	Foreign (1,000)	Portion Rupiah)	Remarks
			Unit Price	Amount	Unit Price	Amount	
1. General				52,251,550		85,992,815	otal 5 % of the Direct Construction Cost.
(1) Mobilization / Demobilization	l.s.	1		20,900,620		34,397,126 2	1.0 % of DC
(2) Temporary Work Yard	l.s.	1		15,675,465		25,797,844 1	.5 % of DC
(3) Benchmark and Preparation Works	l.s.	1		10,450,310		17,198,563 1	0 % of DC
(4) Testing Laboratory	l.s.	1		4,180,124		6,879,425 0	14 % of DC
(5) Submittals	l.s.	1		1,045,031		1,719,856 (	LI % of DC.
2. Breakwater	В	1,500	111,681	167,521,986	87,282	130,923,725	Design depth in average: -12 m; 615,500 m <sup>3</sup>
3. Channel and Basin				38,571,394		209,467,694	Muer deducting the contract volume (2.4 million
Dredging						H	n) of drodging executed by IPC2
Alluvium Component	m3	2,550,000	7.5	19,212,300	48.5	123,763,325 8	is %. Grab Dredging; 5.1 USD/m <sup>3</sup>
Weathered Rock Component	m <sup>3</sup>	300,000	14.5	4,359,093	85.7	25,704,369 1	0 %: Grab Dredging; 9.2 USD/m <sup>3</sup>
Hard Rock Component	m3	150,000	100	15,000,000	400	60,000,000	i 🐜 Grab Dredging after Blasting
4. Container Terminals (CT1 and CT2)				589,204,621		324,031,790	
(1) Quay Wall Construction (-14 m)	н	600	171,588	102,953,009	141,196	84,717,844	latston: L: 20 m x W: 13.5 m x D: 15.5 m
(2) Onland Excavation	m3	2,500,000	59	148,320,152	32	79,440,776	injung Awuran, and road 60 m
(3) Revetment (West and East ends)	m	300	41,806	12,541,841	41,745	12,523,587 0	inwity Type (Concrete Block; Shoreline ~-8 m)
(4) Reclamation $(+3.5 \text{ m})$	m3	575,000	242	139,149,214	48	27,674,038	
(5) Stacking Yard Pavement	$m^2$	152,000	540	82,080,000	360	54,720,000 1	5 lanes x 23.5 m x (16 Bays + 17 Bays)
(6) Passage Pavement	$m^2$	178,000	360	64,080,000	240	42,720,000	
(7) Utility Facilities	l.s.	1		40,080,406		22,235,547	0 % of above construction cost of terminal
5. Container Handling Equipment and Com	puter S	ystem		113,300,000		993,300,000	
(1) Quay Gantry Crane	unit	9	8,800,000	52,800,000	79,200,000	475,200,000 8	: 0 million USD/unit
(2) Rubber-tired Gantry Crane	unit	20	2,090,000	41,800,000	18,810,000	376,200,000 1	9 million USD/unit
(3) Side Lifter	unit	8	440,000	3,520,000	3,960,000	31,680,000 0	0.4 million USD/unit; empty container handling
(4) Tractor and Yard Chassis	set	33	220,000	7,260,000	1,980,000	65,340,000 0	1.2 million USD/unit
(5) Terminal Management Sysytem	1.s.	1	4,400,000	4,400,000	39,600,000	39,600,000 4	t million USD/set
(6) PCs and Office Fittings	1.s.	1	3,520,000	3,520,000	5,280,000	5,280,000 0	1.8 million USD/set









			Local	Portion	Foreig	1 Portion	
Description	Unit	Quantity	(1,000	Rupiah)	(1,000	Rupiah)	Remarks
			Unit Price	Amount	Unit Price	Amount	
6. Terminal Buildings				31,020,000		7,755,000	
(1) Office Building	$m^2$	3,500	4,400	15,400,000	1,100	3,850,000	500 USD/m <sup>2</sup>
(2) Maintenance and Repair Shop	$m^2$	2,800	3,080	8,624,000	770	2,156,000	Equipment: $2,300 \text{ m}^2$ ; container: $500 \text{ m}^2$
(3) Terminal Gate	$m^2$	2,700	1,760	4,752,000	440	1,188,000	200 USD/m <sup>2</sup>
(4) Fuel Station	$m^2$	420	3,960	1,663,200	966	415,800	450 USD/m <sup>2</sup>
(5) Miscellaneous	$m^2$	440	1,320	580,800	330	145,200	Garage for motor biles, workers' huts, etc.
7. Logistics Area				105,412,991		54,378,082	
(1) Revetment (-10 m)	н	180	69,677	12,541,841	69,575	12,523,587	Gravity Type (Concrete Block)
(2) Reclamation (+3.5 m)	в"	151,200	242	36,590,193	48	7,277,069	Average elevation = $+1.5$ m
(3) Wave-absorbing Work	в,	40,000	119	4,761,958	195	7,809,965	Rubble-stone Work;
(4) Yard Pavement	$m^2$	75,600	360	27,216,000	240	18,144,000	A: 180 m x 420 m
(5) Container Freight Station	$m^2$	6,400	2,300	14,720,000	575	3,680,000	250 USD/m <sup>2</sup>
(6) Utility Facilities	1.s.	1		9,582,999		4,943,462	10 % of above construction cost
Direct Construction Cost (DC) of Port	l.s.	1		1,045,030,993		1,719,856,292	Total $(2 \sim 7)$
8. Port Access Road				64,165,500		132,217,313	14.5 km from Cilegon to Bojonegara
(1) General	l.s.	1		3,055,500		6,296,063	Mobilization, temporary works, site clearance
(2) National Road At-grade	ш	14,500	2,700	39,150,000	6,300	91,350,000	RoW = 38 m, 2 Lanes
(3) Bridges	$m^2$	705	10,000	7,050,000	15,000	10,575,000	5 River bridges; JICA Study (2003)
(4) Underpass and Box-culvert	Nos	20	600,000	12,000,000	900,000	18,000,000	
(5)Utility Facilities	1.s.	1		2,910,000		5,996,250	5 % of above Construction Cost
Land Acquisition and Compensation	$m^2$	350,000	250	87,500,000			14.5 km from Cilegon to Bojonegara
Total Project Cost (TC)				1,248,948,042		1,938,066,419	Total (1 ~ 8)
9. Project Related Expenses (PE)				49,957,922		77,522,657	
(1) Administration Cost	1.s.	1		12,489,480		19,380,664	1 % of TC
(2) Engineering Fee	1.s.	-		37,468,441		58,141,993	3 % of TC
10. Grand Total Cost (TC +PE)				1,298,905,964		2,015,589,076	3,314,495,040
VAT (10 %)				129,890,596		201,558,908	331,449,504

# Table 3.4-8 Project Cost Estimate of Bonjonegara Port Development(2015; 2/2)







# 4. Investment and Implementation Plan

#### 4.1. Investment Plan for Port Development

**617.** In order to apply PPP scheme to the investment on case study facilities, public sector will basically invest in infrastructure and private sector will invest in superstructure for the container terminal.

**618.** Investment by public sector is planned as follows:

- Construction of Breakwater (1,500 m length)
- Entrance Channel and Harbor Basin
- Design Depth DL-14 m for entrance channel and basin in front of the Container Terminals
- Design Depth DL-10 m around Multi-purpose Terminals area
- Construction of Container Terminals
- > 300 m length Quay Wall; Design depth DL-14 m x 2 berths
- Reclamation of Container Yards; Width: 300 m x Land depth: 600 m x 2 berths
- > Utility Facilities; Electric power supply, water supply, communication, drainage, etc.
- Quay Gantry Cranes
- ➤ 6 units of Panamax crane for 2 berths of container terminal
- Port Related Area
- Reclamation; Width 180 m x Land depth 420 m
- Wave-absorbing Work
- Construction of Access Road
- ➤ 14.5 km from Cilegon to Bojonegara
- **619.** Investment by private sector is planned as follows:
  - Development of Container Terminals
    - Yard pavement of 2 container terminals (Width: 300 m x Land depth: 600 m x 2 berths)
    - Construction of Terminal Buildings
  - Container Handling Equipment
    - Rubber-tired Gantry Cranes (RTGs) and miscellaneous equipment
  - Terminal Operating System
    - Computer System
    - Container Terminal Operating Software

**620.** Summary table of the investment for Bojonegara Port Development as a base case is presented in Table 4.1-1 dividing the investment into Public Portion and Private Portion. Specifically, 2/3 of the cost shall be borne by the Public Sector while 1/3 of the cost shall be borne by the Private Investor.







Description	Unit	Quantity	Public Investment (1,000 Rupiah)	Private Investment (1,000 Rupiah)	Remarks
1. General			94,275,614	43,968,750	<b>5 %</b> of the Direct Construction Cost.
2. Breakwater	m	1,500	298,445,712		Design depth in average: -12 m
3. Channel and Basin	m <sup>3</sup>	3,000,000	248,039,088		Dredging
4. Container Terminals (CT1 and CT	2)		669,636,412	243,600,000	
(1) Quay Wall Construction (-14 m)	m	600	187,670,852		Caisson Structure
(2) Onland Excavation	m <sup>3</sup>	2,500,000	227,760,928		Tanjung Awuran
(3) Revetment (West and East ends)	m	300	25,065,427		Gravity Type (Concrete Block)
(4) Reclamation (+3.5 m)	m <sup>3</sup>	575,000	166,823,251		
(5) Stacking Yard Pavement	m <sup>2</sup>	152,000		136,800,000	
(6) Passage Pavement	m <sup>2</sup>	178,000		106,800,000	
(7) Utility Facilities	1.s.	1	62,315,953		10 % of construction cost of terminal
5. Container Handling Equipment / C	omput	er System	528,000,000	578,600,000	
(1) Quay Gantry Crane	unit	6	528,000,000		8.0 million USD/unit
(2) Rubber-tired Gantry Crane	unit	20		418,000,000	1.9 million USD/unit
(3) Side Lifter (empty container)	unit	8		35,200,000	0.4 million USD/unit
(4) Tractor and Yard Chassis	set	33		72,600,000	0.2 million USD/unit
(5) Terminal Management Sysytem	1.s.	1		44,000,000	4 million USD/set
(6) PCs and Office Fittings	l.s.	1		8,800,000	0.8 million USD/set
6. Terminal Buildings				38,775,000	
7. Logistics Area			141,391,074	18,400,000	
(1) Revetment (-10 m)	m	180	25,065,427		Gravity Type (Concrete Block)
(2) Reclamation (+3.5 m)	m <sup>3</sup>	151,200	43,867,262		Average elevation = $+1.5$ m
(3) Wave-absorbing Work	m <sup>3</sup>	40,000	12,571,923		Rubble-stone Work;
(4) Yard Pavement	m <sup>2</sup>	75,600	45,360,000		A: 180 m x 420 m
(5) Container Freight Station	m <sup>2</sup>	6,400		18,400,000	250 USD/m <sup>2</sup>
(6) Utility Facilities	l.s.	1	14,526,461		10 % of above construction cost
Direct Construction Cost (DC) of I	l.s.	1	1,885,512,285	879,375,000	Total (2 ~ 7)
8. Port Access Road			196,382,813		14.5 km from Cilegon to Bojonegara
Land Acquisition and Compensati	m <sup>2</sup>	350,000	87,500,000		
Total Project Cost (TC)			2,263,670,711	923,343,750	Total (1 ~ 8)
9. Project Related Expenses (PE)			127,480,578		
(1) Administration Cost	l.s.	1	31,870,145		1 % of TC
(2) Engineering Fee	l.s.	1	95,610,434		3 % of TC
10. Grand Total Cost (TC +PE)			2,391,151,290	923,343,750	3,314,495,040
VAT (10 %)			239,115,129	92,334,375	
Share between Public and Private Inv	vestmer	nts	72%	28%	

Grand Total = around **301 million USD (316 million USD including VAT)** 







## 4.2. Investment Plan for Access Road

**621.** According to the Ministry of Public Works<sup>1</sup>, the construction of the port access road for the development of Bojonegara new port is planned to be realized by the concept of Toll Road, for which governmental approval has already been obtained by the Ministry Decree in August 2005. The route of the toll road is planned along the different alignment of the existing provincial road, and is different from the plan by the JICA Study 2003 that aimed at widening and improving the existing road.

**622.** Two years earlier, Bina Marga had announced the public tender for the construction of the toll road on the condition that all the necessary procedures such as detailed design and cost estimate of the construction works, obtaining EIA approval for the construction, land acquisition and compensation should be carried out by the private investor. The concession period was set at over 30 years. Although there were expressions of interest from the private investors, no applicant came forward.

**623.** As for the plan to realize the port access road to Bojonegara new port by the Toll Road scheme it was difficult to attract private investors due to the insufficient volume of road traffic and the construction length of the road. It was also clarified in the study of Bina Marga that a good financial return could not be expected by the Toll Road plan connecting between Cilegon and Bojonegara; estimated FIRR on the project:  $12.16 \%^2$ .

**624.** Therefore, it is preferable that the port access road should be realized as the project borne by the Government (Ministry of Public Works), where the road construction should be planned integrally with the port development project, and the construction works of port construction and port development should be executed separately by each executive agency.

**625.** For the development of an international port, the responsibility to plan and realize the port access national road or toll road belongs to the government authority of road construction, i.e., Bina Marga. The corridor shall be prepared by the central government in cooperation with the local government. Land acquisition and compensation will be carried out by the provincial government of Banten, and the assistance and support by the central government will be necessary.

#### 4.3. Preliminary Implementation Schedule

# Preliminary implementation schedule of the Bojonegara Port development and the disbursement schedule are presented in Table 4.3-1 and

**626.** Table 4.3-2. The main points of the implementation are as follows.

#### A. Public and Private Partnership

**627.** Investment scheme of the Bojonegara new port development by Public-Private Partnership (PPP) as a base case is conceived as follows; development and construction of the infrastructure of the port shall be borne by the public sector side, while the super-structure of the port and port operation shall be borne by the private sector side.

**628.** Another possible PPP schemes for the project are; (a) breakwater, channels and basins to be used commonly by vessels using all terminals in the port are provided by the public sector and terminal facilities and equipment are provided by the private sector on BOT system, and (b) all the facilities including breakwater, channels and basins and terminals are provided by the private sector under so called master concession.

<sup>&</sup>lt;sup>2</sup> Source: Pekerjaan Penyusunan Studi Kelayakan dan Pra Desain Tender Investasi Jalan Tol, Ruas Cilegon - Bojonegara, Laporan Final, Januari 2006; Departemen Pekerjaan Umum, Directorat Jenderral Bina Marga





<sup>&</sup>lt;sup>1</sup> Departemen **P**ekerjaan Umum, Directorat Jenderral **Bina Marga**, Directorat Bina Program



**629.** These three cases of PPP scheme will be analyzed in the following chapter.

#### B. Financial Arrangement

**630.** A one year period will be required for the process of financial arrangement which consists of Feasibility Study and subsequent Loan Agreement.

#### C. Engineering Study and Selection of Contractors

**631.** The engineering study (surveys and detailed design of port facilities) and the preceding selection of consultants will require at least  $1.5 \sim 2$  years.

**632.** Selection of contractors (port construction and equipment) and selection of the private investor (development of container terminal, operation and management of the port) as well will follow the engineering study.

# D. Construction of Port Infrastructure

**633.** Subsequent to the process of financial process, engineering study and selection of contractors, the construction of port infrastructure is assumed to be implemented from the beginning of the 5th year (the 3 month of the 4th year is assumed for the mobilization and preparation works).

**634.** Requirement for construction period is estimated 3 years for the breakwater (1,500 m) and 2.5 years for the dredging of channel and harbor  $(3,000,000 \text{ m}^3)$  up to completion.

### E. Development by the Private Investor

**635.** Development of the super-structure of the container terminal could be started in the beginning of the 6th year following the construction of quay wall and the reclamation of the land area for the terminal.







Description	Unit	Quantity	Public Investment (1,000 Rupiah)	Private Investment (1,000 Rupiah)	2009	2010	2011	2012	2013	2014	2015	2016
). Administrative Procedures												
(1) Public Sector	Feasit	oility Study										
	Loan	Agreement										
	Procu	rement of Cor	nsultants									
	Surve	y and Detaile	d Design for Por	t Construction								
	Select	ion of Contra	ctor (Port Const	ruction)								
	Const	ruction of Por	t and Procurem	ent								
	Select	ion of Termir	al Operator									
(2) Private Sector	Detail	ed Design of	Terminal Facilit	ies								
	Select	ion of Contra	ctor (Terminal)									
	Devel	opment of Co	ntainer Termina	I								
	Procu	rement of Car	go Equipment									
I. General (Indirect Cost)			94,275,614					28,282,6 <mark>84</mark>	14,1 <mark>4</mark> 1,342	14,1 <mark>4</mark> 1,342	37,7 <mark>1</mark> 0,246	
				43,968,750						21,984,375	21,984,375	
. Breakwater	E	1,500	298,445,712						119,378,285	89,533,713	89,533,713	
5. Channel and Basin												
Dredging	m3	3,000,000	248,039,088						62,00 <mark>9,772</mark>	86,813,681	99,215,635	
. Container Terminals (CT1 and CT2)												
(1) Quay Wall Construction (-14 m)	в	600	187,670,852						37,53 <mark>4,170</mark>	75,068,341	75,068,341	
(2) Onland Excavation	е	2,500,000	227,760,928						91,104,371	68,328,278	68,328,278	
(3) Revetment (West and East ends)	в	300	25,065,427						8,271 <mark>,591</mark>	8,522,2 <mark>45</mark>	<mark>8,27</mark> 1,591	
(4) Reclamation (+3.5 m)	е́п	575,000	166,823,251						41,705,813	83,411,626	41,705,813	
(5) Stacking Yard Pavement	m <sup>2</sup>	152,000		136,800,000						68,400,000	68,400,000	
(6) Passage Pavement	m <sup>2</sup>	178,000		106,800,000						53,400,000	53,400,000	
(7) Utility Facilities	I.s.	1	62,315,953							31 <mark>,157,977</mark>	31 <mark>,157,977</mark>	
-		-				-		-				

 Table 4.3-1 Bonjonegara Port Construction Schedule and Disbursement(toward 2015; 1/2)







Description     Umit     Q       5. Container Handling Equipment / Computer System     (1) Quay Gantry Crane     unit       (2) Rubber-tired Gantry Crane     unit       (3) Side Lifter     unit	Quantity	Investment									
5. Container Handling Equipment / Computer System         (1) Quay Gantry Crane       unit         (2) Rubber-tired Gantry Crane       unit         (3) Side Lifter       unit		(1,000 Rupiah)	Investment (1,000 Rupiah)	2009	2010	2011	2012	2013	2014	2015	2016
(1) Quay Gantry Crane     unit       (2) Rubber-tired Gantry Crane     unit       (3) Side Lifter     unit	tem										
(2) Rubber-tired Gantry Crane unit (3) Side Lifter unit	9	528,000,000						105,600,0 <mark>00</mark>	211,200,000	211,200,000	
(3) Side Lifter	20		418,000,000						229,900,000	188,100,000	
	8		35,200,000						22,000,000	13,200,000	
(4) Tractor and Yard Chassis set	33		72,600,000						44,000,000	28,600,000	
(5) Terminal Management Sysytem 1.s.	1		44,000,000						44,000,000		
(6) PCs and Office Fittings 1.s.	1		8,800,000						8,800,000		
6. Terminal Buildings			38,775,000						38,775,000		
7. Logistics Area											
(1) Revetment (-10 m) m	180	25,065,427							10,026,1 <mark>71</mark>	15,039,256	
(2) Reclamation $(+3.5 \text{ m})$ m <sup>3</sup>	151,200	43,867,262								43,867,262	
(3) Wave-absorbing Work m <sup>3</sup>	40,000	12,571,923								12,571,923	
(4) Yard Pavement $m^2$	75,600	45,360,000								45 <mark>,360,000</mark>	
(5) Container Freight Station m <sup>2</sup>	6,400		18,400,000							18,400,000	
(6) Utility Facilities 1.s.	1	14,526,461								14 <mark>,526,461</mark>	
Direct Construction Cost (DC) of Port 1.s.	1	1,885,512,285	879,375,000								
10. Port Access Road		196,382,813						117,829,688	<mark>78,55</mark> 3,125		
Land Acquisition and Compensation m <sup>2</sup>	350,000	87,500,000					87,500,000				
11. Project Related Expenses (PE)											
(1) Administration Cost 1.s.	1	31,870,145				7,967,536	4,780,522	6,374,029	6,374,029	6,374,029	
(2) Engineering Fee 1.s.	1	95,610,434				23,902,608	14,341,565	19,122,087	19,122,087	19,122,087	
12. Grand Total Cost (TC +PE)		2,391,151,290	923,343,750								
VAT (10 %)		239,115,129	92,334,375								

# Table 4.3-2 Bonjonegara Port Construction Schedule and Disbursement(toward 2015; 2/2)







# 5. Possible PPP schemes and Financial Analysis

5.1. Premises on the Project

#### A. Initial Investment Costs

#### **636.** Initial investment costs are estimated in Table 5.1-1.

Table 5.1-1 Initial Investment Costs (I		valc)	
ltem	Approx. C	l'ty	Total Cost '000 US\$
 Construction Cost for Bojonegara Port			263,921
1. General Cost	1	l.s.	12,568
2. Breakwater	1,500	m	27,131
3. Channel and Basin	3,000,000	m3	22,549
4. Container Terminal			83,021
5. Container Handling Equipment and Computer System			100,600
6. Terminal Building	1	I.s.	3,525
7. Port Related Area			14,526
8. Port Access Road	15	km	-
9. Land Aqusition / Compensation	25	ha	-
11. Price Escalation			5,278
Total Construction Cost			269,199
13. Tender & Selecting Operator Assistance and Supervisio			7,918
Total Construction Cost & Consulting Services			277,117
 14. Interest During Construction (IDC)			348
BJN Total Direct Project Cost-1			277,465
10. Physical Contingency			27,747
 BJN Total Direct Project Cost	1.15645		305,212
15. Local Cost (Adiministration Cost + VAT)			30,785
BJN Total Project Cost			335,997

# Table 5.1-1 Initial Investment Costs (Public + Private)

Notes. 1US\$=100Yen, 1US\$=11,000Rp

#### **637.** Equipment to be installed is shown in Table 5.1-2.

<b>Table 5.1-2 E</b>	quipment to	be Installed
TOC Equipment Item	Required nos. of Unit	Remarks
Quay cranes	<b>3</b> +3	
RTG 1-20	20	
Yard Tractor 1-33	33	
Yard Chassis 1-33	33	20/40/45 correspond
Top Handler	2	4 high
Side Handler 1-9	9	5 high for empty cont.
Tank Lorry	1	for fueling
Bus for Worker	1	shuttle service
M/R Service car	1	with A.&W.M.
Forklift 10t	1	for M/R
Forklift 3t-5t	2	for M/R
Forklift for CFS	6	
Yard Vehicle	15	Operation management
Computer System	1	For Operation







#### Β. Management and Operation Costs

638. Manning schedule of the port authority and terminal operator are shown in Table 5.1-3 and in Table 5.1-4.

Table 5.1-3 Manning schedule of PA						
PA Staff		2016	2017			
PA Staff						
General Manager		1	1			
Deputy General Ma	nager	1	1			
Secretary		2	2			
Manager		2	2			
Assist. Manager		4	4			
Stuff		8	8			
Total		18	18			

FA Stall		2010	2017
PA Staff			
General Manager		1	1
Deputy General Mar	nager	1	1
Secretary		2	2
Manager		2	2
Assist. Manager		4	4
Stuff		8	8
Total		18	18

lable 5.	1-4 Manning	schedule of TOC	
Office		Labour Cost	
Concessionair (Office)	nos.	Concessionair (Worker)	nos.
CEO (general manager)	1	Ship,Yard Operation	
CFO (assis. GM, cheif)	1	Forman	16
Corporate Secretary	1	G.C.Operator	29
Operation Stuff		RTG & Heavy	54
Manager	2	Lift Equip. Operator	
Stuff	13	Tractor Driver	42
Maintenance & Repair		Longshore Worker	100
Manager	1	Marine Clerk	45
Assist. Manager	2	Lift Equip. Operator	
Administrative Dep.		Boss	4
Manager	1	R Stacker driver	42
Stuff	6	Electrician	7
Labor Management		CFS Operation	
Manager	1	Boss	1
stuff	7	Driver & Worker	40
Total	36	Clerk	13
		Total	393

#### TT 1 7 1 J.-le ef TOC

639. Management and operation costs of the port authority and terminal operator are shown in Table 5.1-5.

Т	able	5.1-5	0	peration	Cost

	PA	TOC			
Personnel Cost		Manager class:			
		135,000,000 Rp/person/year			
	37,500,000	Stuff class:			
	Rp/person/year	47,250,000 Rp/person/year			
		Skilled Labor:			
		67,500,000 Rp/person/year			







		Unskilled labor:		
		33,750,000 Rp/person/year		
Administration and Other Cost	-	100% of Personnel cost		
Maintenance Cost	Infrastructure: 1% of the total project cost			
	Equipment: 3% of the equipment cost			
	Electric, fuel & utilities: 2% of the equipment cost			
	Maintenance dredging: 200,000m <sup>3</sup> , 1.14US\$/m <sup>3</sup>			
Depreciation	Civil structure: 40 year			
	Equipment: 20 year			

# C. Tariff and Duties

**640.** Tariff and duties are set as in Table 5.1-6 and in Table 5.1-7 taking the current level into consideration.

Tuble ett v Tuffif bet by the Government			
Port Tar	iff	International (US\$)	
PA	Light Due	0.027/GRT-arrival	
	Harbor Due	0.092/GRT-arrival	
	Anchorage service	0.092/GRT- call	

#### Table 5.1-6 Tariff set by the Government

Table 3.1-7 Samples of Terminal Charges				
Container Handling Charge: TOC	International			
	20ft	40ft		
Stevedoring charge, QGC	L: US\$ 66.0/box	L: US\$ 99.0/box		
	E: US\$ 49.5/box	E: US\$ 74.25/box		
Opening/closing ship hatch	US\$ 30.77/hatch-cover			
Wharfage for vessel	US\$ 0.122/GRT-day			
Lift on/off charge	L: Rp 187,500/box	L: Rp 281,300/box		
	E: Rp 93,700/box	E: Rp 140,600/box		
Container storage charge	L: Rp 27,200/box	L: Rp 54,400/box		
	E: Rp 13,600/box	E: Rp 27,200/box		
	R: Rp 62,900/box	R: Rp 125,800/box		
Reefer service	Rp 200,000/8-hour	Rp 300,000/8-hour		
Mooring/unmooring service	US\$ 33.8/ movement			

#### Table 5.1-7 Samples of Terminal Charges

Mooring/unmooring service US\$ 33.8/ moveme Notes, L: Laden container, E: Empty container, R: Reefer container.

#### D. Estimated Scale of Business

**641.** Maximum capacity of the terminal (2 berths) is presumed as 900,000 TEU/year (see Table 5.1-8), considering the scale of the terminal and estimated vessel type (see Table 5.1-9) and productivity of the terminal is shown in Table 5.1-10.

	Table 3.1-8 Demand of Container						
	TELI	Box			Reefer		
Year	ILU	20ft	40ft	Over 40ft	20ft	40ft	
2016	850,000	195,754	287,449	32,531	3,629	5,329	
2017	900,000	193,965	310,345	35,122	3,596	5,753	
2045	900,000	46,506	376,701	42,632	862	6,983	

Table	5.1-8	Demand	of	Container
-------	-------	--------	----	-----------

Note: TEU/ Box rate increasing 0.02 per year, as of year 2016 set its 1.62







	Ship size (GRT)				
International vessel	1600TEU	4000TEU	6000TEU		
	(20,000)	(46,000)	(72,000)		
Year 2016 – 2045	416 call/year	312 call/year	104 call/year		

#### Table 5.1-9 Vessel Type and Calling Number

#### Table 5.1-10 Bojonegara port Productivity

Productivity	No-working hours	No.Crane	Productivity( Box/hour)
Average Ship Size(6,000TEU)	2	4	30
Average Ship Size(4,000TEU)	2	3	30
Average Ship Size(1,600TEU)	1	2	30

# 5.2. Possible PPP Schemes for Development and Operation of Bojonegara Container Terminal

**642.** The most popular form of PPP for the development and operation of container terminal is that basic infrastructure of the port including breakwater, channel and terminal infrastructure is provided by the port authority while superstructure of the terminal is provided by the terminal operator.

**643.** The rationale behind this scheme is that the fundamental infrastructure such as breakwater and channel are used all the vessels calling various terminals in the port and difficult to specify the benefit of specific terminal and breakwater functions not only for safe navigation of vessels but also for protecting the properties of the hinterland of the port, and the design of the superstructure of the terminal will vary with the operation policy and method applied by each operator.

**644.** In some case of small scale port or the port where break water is not required such as river port, all the facilities and equipment are provided by the private sector and management and operation of the port is entrusted to the private sector under the so called master concession scheme.

**645.** In case of master concession, it often leads to monopolistic operation of the port by the concessionaire and it is technically difficult to oversee such an monopolistic behavior and hence it is not a desirable scheme.

**646.** In the case of master concession, public sector holds more than 51% share of the company for development and management of the port forming the joint venture company with potential concessionaire to practically control the management of the company.

**647.** Partial concession scheme is often seen in the case of container terminal development, and it includes BOT and joint development by the public sector and private sector.

**648.** Considering the characteristics mentioned above, following three cases are evaluated for the selection of PPP scheme in the green field port development of Bojonegara.

# (i) Case-1: (partial concession/ joint development)

- Port authority provides the fundamental infrastructure (breakwater, channels and basins, quay wall and reclamation of the terminal with gantry cranes and access road)
- Terminal operator (concessionaire) provides the superstructure of the terminal and other equipment for the operation of the container terminal including RTGs
- PPP scheme applied is the concession to develop, manage and operate the container terminal which the port authority concede the concessionaire the rights to develop the







superstructure and commercial operation of the terminal.

Concession fee consists of fixed fee for the recovery of necessary repayment amount for the investment on the terminal by the port authority, land and water rent and variable fee in terms of revenue share.

(Duration of the concession period should be decided based on the financial assessment under relevant concession conditions such as initial investment, reinvestment for renewal of equipment and facilities, maintenance obligation and concession fee etc. A 25~30 year period or more is common. Therefore, duration of the concession period in this case study is set at 30 years.)

# (ii) Case-2: (partial concession /BOT)

- Port authority provides only fundamental infrastructure (breakwater, channel and basin, access road etc.)
- Concessionaire provides all the terminal facilities and equipment for the operation of the container terminal.
- PPP scheme applied is the BOT for the development, management and operation of the container terminal
- Concession fee consists of land and water rent and variable fee in terms of revenue share

### (iii) Case-3: (master concession)

- Port authority give the authorization to develop, manage and operate the container port including breakwater, channel and basins and access road to the concessionaire
- > Concessionaire invests on whole project under the scheme of master concession
- > Concession fee consists of land and water rent and variable fee in terms of revenue share

# 5.3. Financial Conditions of the Port Authority and the Concessionaire

**649.** For the purpose of financial analysis, financial conditions of the port authority and the concessionaire are set as shown in Table 5.3-1.

Discount rates of all cases are set as follows;

Port Authority: 1.44% (calculated from the interest rate of an international financial organization (0.1%) and market interest rates (15.0%) of Indonesia for local cost portion (shared 9% of total loan). However, the discount rate of case-3 is 0.0% because there is no initial investment.)

Terminal Operator: 10.5% (calculated from market interest rates (15.0%) of Indonesia and debt-equity ratio (70:30))

(One of the criteria for evaluating the financial viability of a project is that the FIRR which is one of the financial indicators should exceed the discount rate.)







#### Table 5.3-1 Financial Conditions of Port Authority and Terminal Operator

Case-1	Port Authority	Terminal Operator (Concessionaire)
1. Cost Allocation	Invest on infrastructure (breakwater, channel & basins, quay wall & Gantry Crane, land reclamation)	Superstructure and equipment
2. Financial Resource	International financial organization and bank (local portion)	bank (70%) and own equity (30%=\$32mill)
3. Tax	non taxable	20% income tax
4. Maintenance	infrastructure & maintenance dredging	superstructure & other equipment
5. Depreciation	Infrastructure and Gantry Cranes	Superstructure and equipment
6. Concession fees	Fixed fee for terminal facilities equivalent t +land & water rent +variable fee	o repayment of loan + lease fee for GCs in terms of 5% revenue share
7. Renewal cost for equipment	GCs by bank loan	other equipment by bank loan
Case-2	Port Authority	Terminal Operator (Concessionaire)
1. Cost Allocation	Investment on breakwater and channels	Investment on other infrastructure, superstructure and equipment
2. Financial Resource	International financing organization and bank loan (local portion)	bank (70%) and own equity (30%=\$81mill)
3. Tax	non taxable	20% income tax
4. Maintenance	breakwater, channel	other infrastructure & superstructure
5. Depreciation	breakwater, channel	other infrastructure & superstructure
6. Concession fees	variable fee of 5% revenue	share+land & water rent
7. Renewal cost for equipment	not applicable	equipment by bank loan
Case-3	Port Authority	Terminal Operator (Concessionaire)
1. Cost Allocation	non initial investment	investment on all facilities and
2. Financial Resource	not applicable	bank (70%) and own equity (30%=\$101mill)
3. Tax	non taxable	20% income tax
4. Maintenance	not applicable	maintenance of all the facilities and equipment
5. Depreciation	not applicable	Depreciation of all the facilities and equipment
6. Concession fees	Land and water rent + variab	le fee of 5 <sup>%</sup> revenue share
7. Renewal cost for equipment	not applicable	equipment by bank loan

#### 5.4. Evaluation of PPP Scheme

# A. Table of Financial Indicators and Financial Statements for the concession evaluation

**650.** In case-2 and case-3, in addition to the table of the financial indicators, the financial statements are attached to show that the cash flow of the terminal operating company will remain in red for a long time.

### B. Result of Evaluation

**651.** Bojonegara Port Development Project was once tendered under the master concession scheme and resulted with no bidder. As is shown in the financial analysis for case-3, it is the green field port requiring huge amount of initial investment including fundamental infrastructure including breakwater (total investment about \$330 mil.).







**652.** In the case study, it is assumed that debt/equity ratio of the concessionaire is 70/30 and hence for the case of master concession, concessionaire will require paid up share capital of more than \$100 million which is such a huge amount to make concessionaire to hesitate to participate (see Table 5.4-5~Table 5.4-7).

**653.** In the case-1 where the key infrastructure is provided by the port authority financed by international financing body with fairly favorable condition, estimated financial statements both for the port authority and the concessionaire show reasonably sound throughout the concession term and it is said that this is the reasonable partnership between public and private (see Table 5.4-1).

**654.** In the case-2 where fundamental infrastructure is provided by the port authority and terminal is provided by the concessionaire on BOT system, financial indicators show that financial conditions both for the port authority and the concessionaire seem to be sound (see Table 5.4-2).

**655.** Cash flow statement shows, however, rather severe condition for initial 6 years for the concessionaire recording more than \$10 million/year shortage. This is caused by rather huge amount of initial investment to be financed by unfavorable bank loan and the assumption of the limited handling capacity of 900,000TEUs/year compared with rather fully equipped terminal (see Table 5.4-4).

**656.** It is, however, considered to overcome the situation by other possible countermeasures such as giving tax holidays for the initial stage of operation or decreasing the concession fee by the port authority.

**657.** Considering the results of case studies, it can be said that for the green field port which requires huge amount of initial investment for fundamental infrastructure like breakwater and channel, master concession is not suitable for PPP scheme, and either BOT for only terminal or joint development scheme is desirable.





Table 5.4-1 Result of Financial Analysis (Case-1): Bojonegara Port

Year of No.4-6 Q. Crane added	2016			DUTPUTS		
Year of No.7 Q. Crane added	3000					
Concession Fee	1st Prd	2nd Prd	3rd Prd			1000\$
Fixed	4,628	4,628	4,628		RTG Lease for 15 years	0
Variable	3,065	3,173	3,119		GT Crane lease for 25 years	2,380

			Financial Indic	ators			2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	PROFITABILITY (Net Operating In	ncome/ Net Fixed Assets)																					
		Rate of Return on Net Fixed Asse	ts (Criterion: over %	1	8.00%		0.00%	0.00%	0.00%	0.00%	30.92%	34.50%	35.39%	36.35%	37.08%	38.06%	39.27%	40.59%	37.33%	38.97%	40.22%	42.18%	44.01%
	OPERATIONAL EFFICIENCY																						
		Operating Ratio (Criterion: uno	der 0.7-0.75)				0.07	0.07	0.07	0.07	0.42	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.43	0.43	0.43	0.43	0.44
		Working Ratio (Criterion: unde	r 0.5- 0.6)				0.07	0.07	0.07	0.07	0.37	0.35	0.35	0.35	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
-	LOAN REPAYMENT CAPACITY																						
		Debt Service Coverage Ratio	(Criterion: over 1.0	))			0.00	0.00	0.00	0.00	2.16	2.42	2.60	2.81	3.06	3.33	3.67	4.13	78.74	16.72	17.63	18.66	19.71
-							01	01	01	00/	0.0%	100%	100%	1005	100%	100%	100%	1005	1005	100%	100%	100%	1000
-			concessionn to	e rate (fixed,	<u>'</u>		0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
-			concession fe	s rate (variabl	e)		0%	0%	0%	0%	0%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
-																							
ŀ			total concession	foo/rovonuo			5%	5%	5%	5%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
-		MAXIMUM CONCESSION FEE PATE	NDV/Profit/Povo		91 5 98		570	570	576	570	17.8	17.0	17.0	17/0	17/0	17.0	17.0	17.0	17.0	17.0	17/0	17.8	17.0
00		MAXIMUM CONCESSION FEE NATE	Einengiel Indig	atore	01.00%	2028	2029	2030	2031	2032	2033	2034	2035	2038	2037	2038	2030	2040	2041	2042	2043	2044	2045
<u> </u>	PROFITABILITY (Net Operating In	come / Net Fixed Assets)				2020	2020	2000	2001	2002	2000	2004	2000	2000	2007	2000	2000	2040	2041	2042	2040	2044	2040
		Bate of Beturn on Net Fixed	Assets (Criterion:	over %)	8 00%	46 43%	49 18%	32.18%	30.85%	32.24%	33 75%	35.41%	36.51%	38 46%	40.63%	43%	40.72%	43%	45.66%	48 76%	51 79%	55.81%	67.09%
					0.00%	10.10.1	10.10.0	02.10.0	00.001	CLL IN	00.70%	00.11.1	00.017	00.107	10.00.0	10.0	10.72.0	10.0	10.00%	10.7 0.1		00.01.1	07.00.0
	OPERATIONAL EFFICIENCY																						
		Operating Ratio (Criterion: uno	der 0.7-0.75)			0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.34
		Working Ratio (Criterion: unde	r 0.5- 0.6)			0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.33
	LOAN REPAYMENT CAPACITY																						
		Debt Service Coverage Ratio	(Criterion: over 1.0	))		19.50	20.74	23.13	3.93	3.45	3.66	4.30	4.57	4.73	5.08	5.52	5.99	4.95	12.13	18.93	20.12	19.99	22.71
	FINANCIAL INTERNAL RATE OF F	RETURN			28.6%																		
-																							
			concessionn fo	e rate (fixed)		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
			concession fe	e rate (variabl	e)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
			testal concerns t	6 /		1.74	4.7%	174	1.74	1.74	1.74	174	174	174	1.70	1.70	1.70	1.74	1.74	4.74	1.74	4 74	1.04
			total concession	tee/revenue	01 508	1/%	1/%	1/%	1/%	17%	1/%	1/%	1/%	1/%	1/%	1/%	1/%	17%	1/%	1/%	1/%	1/%	13%
		MAXIMUM CONCESSION FEE RATE	INPV(Profit/Reve	nue)	81.53%	(#1.000)																	
		Retaine	o carnings lota		/04,08/	(\$1,000)																	

			Financial Indica	tors			2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	PROFITABILITY (Net Operating In	<u>come/ Net Fixed Assets)</u>																					
		Rate of Return on Net Fixed	Assets (Criterion: o	ver%)	1.59%		0.00%	0.00%	0.00%	0.00%	4.10%	4.86%	4.99%	5.13%	5.28%	4.79%	5.60%	5.78%	5.97%	6.17%	5.63%	6.63%	6.88%
	OPERATIONAL EFFICIENCY																						
		Operating Ratio (Criterion: uno	der 0.7-0.75)				0.00	0.00	0.00	0.00	0.46	0.38	0.38	0.38	0.38	0.46	0.38	0.38	0.38	0.38	0.46	0.38	0.38
		Working Ratio (Criterion: unde	r 0.5- 0.6)				0.00	0.00	0.00	0.00	0.11	0.03	0.03	0.03	0.03	0.11	0.03	0.03	0.03	0.03	0.11	0.03	0.03
	LOAN REPAYMENT CAPACITY																						
		Debt Service Coverage Ratio	(Criterion: over 1.0)	)			0.00	0.00	0.00	0.00	4.29	4.84	4.99	5.15	5.32	1.53	1.68	1.70	1.71	1.73	1.62	1.77	1.79
DA			Financial Indica	tors		2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
FA .	PROFITABILITY (Net Operating I	<u>come/ Net Fixed Assets)</u>																					
		Rate of Return on Net Fixed	Assets (Criterion: o	ver%)	1.59%	7.15%	7.45%	6.85%	8.14%	8.54%	8.98%	9.46%	8.80%	10.60%	11.29%	12.06%	12.96%	6.85%	8.14%	8.54%	8.98%	9.46%	0.00%
	OPERATIONAL EFFICIENCY																						
		Operating Ratio (Criterion: uno	der 0.7-0.75)			0.38	0.38	0.46	0.38	0.38	0.38	0.38	0.46	0.38	0.38	0.38	0.38	0.46	0.38	0.38	0.38	0.38	0.00
		Working Ratio (Criterion: unde	r 0.5- 0.6)			0.03	0.03	0.11	0.03	0.03	0.03	0.03	0.11	0.03	0.03	0.03	0.03	0.11	0.03	0.03	0.03	0.03	0.00
	LOAN REPAYMENT CAPACITY																						
		Debt Service Coverage Ratio	(Criterion: over 1.0)	)		1.81	1.84	1.72	1.88	1.91	1.93	1.96	1.84	2.01	2.04	2.07	2.10	2.16	1.27	1.27	1.27	1.27	0.00
		Retaine	d Earnings Total		268,705	(\$1,000)																	
	FINANCIAL INT	ERNAL RATE OF RETRUN			5.5%																		



 Table 5.4-2
 Result of Financial Analysis (Case-2): Bojonegara Port

	Year of No.4-6 Q. Crane added	2016	1																				
	Year of No.7 Q. Crane added	3000																					
	Concession Fee	1st Prd	2nd Prd	3rd Prd								1000\$	1										
	Fixed	0	0	0				RTG L	ase for 1	5 years		0											
	Variable	3,204	3,311	3,257				GT Crane	lease for	25 years		0											
			Financial Indica	tors			2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	PROFITABILITY (Net Operating In	ncome/ Net Fixed Assets)	(O.:		0.00*		0.00%	0.00%	0.00*	0.00%	14.40%	15.00%	10.07%	10.00%	17.058	17.40%	10.000	10.55%	10.00%	10.00%	10.00	00.055	00.011
		Rate of Return on Net Fixed Asset	ts (Griterion: over %)		8.00%		0.00%	0.00%	0.00%	0.00%	14.42%	10.88%	10.27%	10.09%	17.05%	17.49%	18.00%	18.00%	18.03%	18.08%	19.28%	20.05%	20.81%
	OPERATIONAL EFFICIENCY																						
		Operating Ratio (Criterion: und	ler 0.7- 0.75)				0.07	0.07	0.07	0.07	0.36	0.34	0.34	0.35	0.35	0.35	0.35	0.35	0.37	0.37	0.37	0.37	0.37
		Working Ratio (Criterion: under	r 0.5- 0.6)				0.07	0.07	0.07	0.07	0.23	0.22	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
	LOAN REPAYMENT CARACITY																						
	LOAN NEI ATMENT OAT AOTT	Debt Service Coverage Ratio (	Criterion: over 1.0	))			0.00	0.00	0.00	0.00	1.35	1.45	1.49	1.53	1.57	1.61	1.65	1.70	1.76	1.70	1.76	1.83	1.90
			concessionn fe	e rate (fixed	0		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
			concession fee	<u>rate (variab</u>	le)		0%	0%	0%	0%	0%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
			total concession	fee/revenue			5%	5%	5%	5%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
		MAXIMUM CONCESSION FEE RATE	NPV(Profit/Reve	nue)	82.91%																		
.oc			Financial Indica	tors		2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
	PROFITABILITY (Net Operating In	Poto of Potum on Not Fixed A	Critorian:	Nor %)	8 00%	21 7 2%	22.74%	10 17%	10.17%	20.06%	21.04%	22.1.2%	22.07%	24.29%	25.94%	274	27 / 2%	21%	21.51%	22.61%	22 728	25.09%	20.61%
		Nate of Neturn on Net Tixed A	SSELS (Onterion, c		0.00%	21.75/0	22.14%	13.17/0	13.17/0	20.00%	21.04/0	22.12/0	23.07/	24.00%	20.04/0	211	27.40/0	21/0	21.01/0	22.01/0	20.70%	20.00/0	20.01/0
	OPERATIONAL EFFICIENCY																						
		Operating Ratio (Criterion: und	ler 0.7- 0.75)			0.37	0.37	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.37	0.37	0.37	0.37	0.37	0.27
		Working Ratio (Criterion: under	r 0.5- 0.6)			0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
	LOAN REPAYMENT CAPACITY																						
		Debt Service Coverage Ratio (	Criterion: over 1.0	))		1.97	2.06	2.17	1.64	1.63	1.72	1.89	2.01	2.12	2.28	2.46	2.67	2.62	2.41	3.64	3.85	4.04	4.30
	FINANCIAL INTERNAL RATE OF F	RETURN			15.0%		-							-		-							
					n)	08	01	04	01	08	0%	08	01	0%	08	01	08		0%	08	08	0*	0*
			concession fee	rate (variab	le)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
			total concession	fee/revenue		6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
		MAXIMUM CONCESSION FEE RATE	NPV(Profit/Reve	nue)	82.91%	(** ****																	
		Retainet	u carnings iotai		000,211	(41,000)																	
			Financial Indica	tors			2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	PROFITABILITY (Net Operating In	ncome/ Net Fixed Assets)																					
		Rate of Return on Net Fixed A	Assets (Criterion: o	over %)	1.59%		0.00%	0.00%	0.00%	0.00%	6.52%	8.87%	9.05%	9.24%	9.44%	7.50%	9.88%	10.11%	10.36%	10.62%	8.45%	11.19%	11.50%
	OPERATIONAL EFFICIENCY																						
		Operating Ratio (Criterion: und	ler 0.7- 0.75)				0.00	0.00	0.00	0.00	0.42	0.24	0.24	0.24	0.24	0.41	0.24	0.24	0.24	0.24	0.41	0.24	0.24
		Working Ratio (Criterion: under	r 0.5- 0.6)				0.00	0.00	0.00	0.00	0.22	0.05	0.05	0.05	0.05	0.22	0.05	0.05	0.05	0.05	0.22	0.05	0.05
	LOAN REPAYMENT CARACITY			-		-																	
	LUAN REPATMENT CAPACITY	Debt Service Coverage Batio (	Criterion: over 1.0	1			0.00	0.00	0.00	0.00	5.41	6.95	7 16	7.39	7.63	1.99	2 4 5	2 4 7	2.50	2.52	2.09	2.58	2.61
			Financial Indica	tors		2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
PA	PROFITABILITY (Net Operating In	ncome/ Net Fixed Assets)																					
		Rate of Return on Net Fixed A	Assets (Criterion: o	over %)	1.59%	11.83%	12.18%	9.73%	13.00%	13.45%	13.93%	14.45%	11.61%	15.62%	16.27%	16.99%	17.77%	14.40%	19.56%	20.60%	21.76%	23.05%	0.00%
	OPERATIONAL EFFICIENCY																						
	OFERATIONAL EFFICIENCY	Operating Ratio (Criterion: und	ler 0.7- 0.75)			0.24	0.24	0.42	0.24	0.24	0.24	0.24	0.42	0.24	0.24	0.24	0.24	0.42	0.24	0.24	0.24	0.24	0.00
		Working Ratio (Criterion: under	0.5-0.6)			0.05	0.05	0.22	0.05	0.05	0.05	0.05	0.22	0.05	0.05	0.05	0.05	0.22	0.05	0.05	0.05	0.05	0.00
	LOAN REPAYMENT CAPACITY	Daht Camina Courses Datis (	Criterien, eus 16	1		2.64	0.67	0.00	0.74	0.77	2.01	0.05	0.07	2.02	2.07	2.00	2.00	2.00	2.40	2 40	2 4 2	2.40	0.00
		Retainer	d Earnings Total		147.744	(\$1.000)	2.0/	2.22	2.74	2.11	2.81	2.85	2.37	2.93	2.97	3.02	3.06	2.80	3.42	3.42	3.43	3.43	0.00
	FINANCIAL INT	ERNAL RATE OF RETRUN			8.6%																		







 Table 5.4-3
 TOC's Income Statement (Case-2): Bojonegara Port

Income Statement of the BJN Project (\$'000s)	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Harbor & Light Dues		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pilotage		0	0	0 0	C	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anchorage Fee for Vessel		0	0	0 0	0	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775
Anchorage Fee for Cargo		0	0	0		2 690	2 690	2 690	2 690	2 690	2 690	2 690	2 690	2 690	2 690	2 690	2 690	2 690	2 690	2 690	2 690	2 690	2 690	2 690	2 690	690	2 690	2 690	2 690	2 690	2 690	2 690	2 690	2 690	2 690
Wharlage for Vessels Wharfage for Cargo		0	0	0 0	0	0 0	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	0	0000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Procedure fee																																			
Towage fee		0	0	0 0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moorage service Charge for mooring/unmooring		0	0			56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	0 56	56	56	56
Charge for opening/closing hatch		0	0	0 0	C	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256
Charge for handling container		0	0	0 0	0	45,041	47,487	47,287	47,093	46,903	46,718	46,537	46,360	46,187	46,018	45,852	45,690	45,532	45,377	45,225	45,225	45,225	45,225	45,225	45,225 45	,225	45,225	45,225	45,225	45,225	45,225	45,225	45,225	45,225	45,225
Charge for storage of Container		0	0	0 0	0	883	935	935	935	935	935	935	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936
Charge for PTI (Pre Trip Inspection) of Reefer Container		0	0		0	0 4	4	4	4	4	4	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Charge for lift-on/lift -off (R/D) at container yard		0	0	0 Ö	0	11,380	11,998	11,948	11,900	11,852	11,806	11,760	11,716	11,673	11,630	11,589	11,548	11,508	11,469	11,431	11,431	11,431	11,431	11,431	11,431 1	,431	11,431	11,431	11,431	11,431	11,431	11,431	11,431	11,431	11,431
Charge for handling cargoes																																			
Concession Fixed Fee (To PA)																										-									
Concession Variable Fee (To PA)																																			
TOTAL REVENUE		0	0	0 0	0	64,074	67,190	66,941	66,698	66,461	66,229	66,003	65,781	65,565	65,353	65,147	64,944	64,746	64,552	64,363	64,363	64,363	64,363	64,363	64,363 64	,363	64,363	64,363	64,363	64,363	64,363	64,363	64,363	64,363	64,363
EVDENCE																																			
DIRECT EXPENSE																																			
Labour Cost (Concessionaire)		0	0	0 0	0	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171
Maintenance of equipment (for PA asset)		0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maintenance of equipment (Concessionaire including shore cranes) Final & Utilities (for PA)		0	0	0 0	0	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019 4	.019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019
Fuel & Utilities (for Concessionaire)		0	0	0 0	0	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546
Maintenance of infrastructures (PA: major repairs)		0	0	0 0	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maintenance of infrastructures (Concessionaire: minor repairs)		0	0	0 0	0	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588
Total Direct Expense		0	0			9.324	9.324	9.324	9 324	9.324	9.324	9.324	9.324	9.324	9.324	9.324	9.324	9.324	9.324	9.324	9.324	9.324	9.324	9.324	9.324 9	324	9.324	9.324	9.324	9.324	9.324	9.324	9.324	9.324	9.324
INDIRECT EXPENSE		-				0,021	01021		0102 -		0,02.	0,02.	0,02.	0102 1	0,021		0,01		0,01			0,02 1	0102.	0,021			0102 1		0102	0,021		0102 1	0,021		
Depreciation (equipment) (for PA Asset)		0	0	0 0	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation (equipment) (Concessionaire)		0	0	0 0	0	5,206	5,206	5,206	5,206	5,316	5,316	5,316	5,316	6,265	6,265	6,265	6,265	6,265	6,265	6,265	6,507	6,507	6,507	6,507	6,507 6	,507	6,507	6,507	6,507	6,507	6,507	6,507	6,507	6,507	6,507
Depreciation (Buildings of TO) Depreciation (PA Infrastructure)		0	0	0 0		190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	0	0	0	0	- 0
Depreciation (TO Facilities)		0	0	0 0	0	2,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634	,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634	2,634
Depreciation (PA Local Portion)		0	0	0 0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation (Consulting service)		0	0	0 0	0	0 001	0	0	0	0	0	0	0	0	0	0	074	074	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bad Debt (0.5% of Revenue)		0	0		0	320	336	335	333	332	331	330	329	328	327	326	325	324	323	322	322	322	322	322	322	322	322	322	322	322	322	322	303	322	322
Concession Fixed Fee (to PA)		0	0	0 0	C	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concession Variable Fee (to PA)		0	0	0 0	0	3,204	3,360	3,347	3,335	3,323	3,311	3,300	3,289	3,278	3,268	3,257	3,247	3,237	3,228	3,218	3,218	3,218	3,218	3,218	3,218	,218	3,218	3,218	3,218	3,218	3,218	3,218	3,218	3,218	3,218
Land & Water Rental Fee (to PA)		0	0	0 0	0	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498
Crane Lease Fee (to PA)		0	0	0 0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Ö	0	0	0	0	0	0	0	0	0
Concession Fee for RTG (to PA)		0	0	0 0	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concession Fee for Crane (to PA)		0	0	0 0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GENERAL & ADMNISTRATIVE		0	0	0		13,013	13,231	13,214	13,197	13,290	13,274	13,258	13,243	14,176	14,162	14,147	14,133	14,119	14,105	14,092	14,334	14,334	14,334	14,334	14,334 14	,334	14,334	14,334	14,334	14,334	14,144	14,144	14,144	14,144	14,144
Administrative Personnel (Concessionaire)		0	0	0 0	0	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367
Others (Personnel Cost x 40%)		0	0	0 0	C	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147
PA Bojonegara Port Office Administration		0	0	0 0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
I otal General & Administrative		0	0	0		514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514
TOTAL EXPENSE		0	0	0	C	22,851	23,069	23,052	23,035	23,128	23,112	23,096	23,081	24,014	23,999	23,985	23,971	23,957	23,943	23,930	24,172	24,172	24,172	24,172	24,172 24	,172	24,172	24,172	24,172	24,172	23,982	23,982	23,982	23,982	23,982
OPERATING INCOME		0	0	0	0	41,223	44,121	43,889	43,663	43,333	43,117	42,906	42,701	41,551	41,354	41,162	40,973	40,789	40,609	40,432	40,190	40,190	40,190	40,190	40,190 40	,190	40,190	40,190	40,190	40,190	40,381	40,381	40,381	40,381	40,381
OTHER INCOME/(EXPENSE)		-		I																															$\rightarrow$
Repayment of Interest on Initial Loans (PA)		0	0	0 0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repayment of Interest on Long-Term Loans (PA Local Portion)	0	0	0	0 0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repayment of Interest on Long-Term Loans (TO Local Loan)	163	521	2,393	12,409	24,811	26,752	25,733	24,714	23,695	22,675	21,656	20,637	19,618	18,599	17,580	16,561	15,542	14,522	13,503	12,484	11,465	10,446	9,427	8,408	7,389 6	,370	5,350	4,331	3,312	2,293	1,274	255	0	0	0
Repayment of Interest on Short-Term Loans (PA) Repayment of Interest on Long-Term Loans (Concessionaire)		0	0	0		0	267	240	213	187	229	238	200	162	1,109	972	962	840	786	657	528	4,728	5.162	4.514	3.865	.315	2.960	2.403	1.846	1,296	1,730	7,361	6.517	5,771	5.094
Repayment of Interest on Short-Term Loans (Concessionaire)						Ľ	207		_10	.07			_00		.,	-/2	- 01	_ 10	. 50					.,			-1000	-,	.,_ /0	.,	.,. 50	.,	-1- 77		
TOTAL OTHER	163	521	2,393	12,409	24,811	26,752	26,000	24,954	23,908	22,862	21,885	20,875	19,818	18,761	18,688	17,533	16,504	15,362	14,290	13,142	11,994	15,174	14,589	12,922	11,254	,685	8,310	6,734	5,158	3,589	3,004	7,616	6,517	5,771	5,094
EARNINGS before TAXES	-162	.524	.2 202	-12 400	-24 811	14 474	18 124	18 035	10 755	20.470	21 222	22.024	22,802	22 780	22 666	23,629	24 470	25 427	26 340	27 201	28 107	25.016	25 601	27 260	28.036 2/	506	31,880	33 466	35.032	36.602	37 377	32 765	33.864	34 610	35 287
	- 103	-321	-2,393	-12,409	-29,011	19,971	10,121	10,833	10,755	20,470	21,232	22,031	22,002	22,109	22,000	23,020	29,970	23,927	20,319	21,20	20,107	23,010	23,001	200,200	20,000 31	,000	51,000	33,430	33,032	30,002	31,311	32,100	33,004	54,010	33,207
INCOME TAX (from Concessionaire only)	0	0	0	0 0	0	2,894	3,624	3,787	3,951	4,094	4,246	4,406	4,576	4,558	4,533	4,726	4,894	5,085	5,264	5,458	5,639	5,003	5,120	5,454	5,787 6	,101	6,376	6,691	7,006	7,320	7,475	6,553	6,773	6,922	7,057
			0.000					18.445	15.02	10.0	10.0	17.0	10.0	10.05	10.100	10.05	10.5		01.0	01.07	00.55	00.047	00.101		00.140	105	05 50 1	00.74	00.00	00.04	00.00	00.0	07.04	07.07	
NET INCOME alter tax	-163	-521	-2,393	-12,409	-24,811	11,577	14,497	15,148	15,804	16,376	16,986	17,625	18,306	18,231	18,132	18,903	19,576	20,341	21,055	21,833	22,558	20,013	20,481	21,815	23,149 24	,405	25,504	26,765	28,026	29,281	29,902	26,212	27,091	27,688	28,229
Retained Earnings	-163	-684	-3.077	-15 487	-40 208	-28 721	-14 224	924	16 728	33 105	50.090	67 715	86.021	104 252	122 385	141 288	160.863	181 205	202 260	224 093	246 650	266 663	287 144	308 959	332 108 356	513	382 017	408 782	436.808	466 089	405 001	522 203	540 204	576 982	605 211



#### Table 5.4-4 TOC's Cash Flow Statement and Balance Sheet (Case-2): Bojonegara Port

Statement of Cash Flows (\$'000s) of Bojonegara	2011	2013	2013	3 201	4 201	5 2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Cash Beginning	0	-214	-5.631	1 -17 73	-39.84	5 -74.36	-64.461	-51 894	-38.675	-24 801	-10 244	4 856	20 555	36 935	54 190	70.408	87 396	105 192	123 753	142 963	162 950	183,969	198 369	212 299	227 563	245 099	263 890	283 715	304 801	327 213	350 881	374 041	396 500	425 629	455 354
					-							.,		00,000														2001.10							
Cash Inflow	2 243	5.29	38.210	0 124 79	3 120.89	8 51 79	52 151	51 920	51.69	52 127	51 664	51 047	50 841	60.012	50 443	51 450	50 062	50 533	49 698	49.521	90 683	58 893	49 521	49 521	49 521	51 375	49 521	49 521	49 521	58 893	109.328	49 521	49 521	50 176	49 521
						0.11.0		0.1020	0.100			0.10.11									00,000					0.10.0									
CASH FLOWS FROM OPERATING ACTIVITIES	0	(	) (	0	0	49 25	52 151	51 920	51.69	51 473	51 257	51 047	50 841	50 640	50 443	50 251	50.062	49.878	49 698	49 521	49 521	49 521	49 521	49 521	49 521	49 521	49 521	49 521	49 521	49 521	49 521	49 521	49.521	49 521	49.521
Operating Income	0			0	0	0 41.22	44 121	43,880	43.661	43 333	43 117	42 906	42 701	41 551	41 354	41 162	40.973	40 789	40,609	40.432	40 100	40 190	40 190	40 190	40 190	40 190	40 190	40 190	40 190	40 190	40 381	40 381	40 381	40 381	40 381
Depreciation (equipment) (for PA Asset)	0			0	0	0 0	0 0	40,000	40,000	) 40,000	) -10,111	42,000	42,701		41,004	41,102	40,070	40,700	40,000	-10,-102	40,100	40,100	40,100	40,100	40,100	40,100	40,100	40,100	40,100	40,100	40,001	40,001	40,001	40,001	40,001
Depreciation (equipment) (Concessionaire)	0			0	0	0 520	5 206	5 206	5 206	5 316	5 316	5.316	5 316	6 265	6 265	6 265	6 265	6 265	6 265	6 265	6 507	6.507	6 507	6.507	6 507	6 507	6.507	6.507	6 507	6 507	6 507	6.507	6 507	6.507	6.507
Depreciation (Buildings of PA)	0			0	0	0 190	190	190	190	) 190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	0,000	0	0	C	0
Depreciation (PA Infrastructure)	0			0	0	0 (	) 0	0	(	) (	) (	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C C	0
Depreciation Expense (TO Eacilities)	0			0	0	0 2.63	2 634	2 634	2.63	1 2 636	2 634	2 634	2 634	2 634	2 634	2 634	2 634	2 634	2 634	2 634	2 634	2 634	2 6 3 4	2 634	2 634	2 634	2 634	2 634	2 634	2 634	2 634	2 634	2 634	2.63/	2 634
Depreciation (PA Local Portion)	0			0	0	0 0	0	0						0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0		0	C	0
Depreciation (Consulting Service)	0			0	0	0 0	0	0				0	ő	0	0	0	0	0	0	0	0	0	0	0	0	0	ő	0	0	0	0	0	0	<u> </u>	0
[Total No cash Items included in Net Income (Depreciation)]	0			0	0	0 8.03	8.030	8 030	8.030	8 14(	8 140	8 140	8 140	9.089	9.089	9.089	9.089	9.089	9.089	9.089	9.331	9.331	9.331	9.331	9.331	9.331	9.331	9.331	9.331	9.331	9 141	9 141	9 141	9 141	9 141
CASH FLOWS FROM FINANCING ACTIVITIES	2 243	5.29	38.210	0 124 79	3 120.89	8 2.54	1 0	0 0		654	407	0	0	9.372	0	1 199	0	655	0,000	0	41 162	9.372	0,000	0	0	1 854	0	0	0	9.372	59 807	0	0	655	0
Initial Long-Term Loans (PA)	0		) (	0	0	0 (	0	0		) (	) (	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	00,000	0	0	C	0
Long-Term Logns (PA Reinvestment)	0			0	0	0 0	0	0					0	ő	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	- C	0
Long-Term Loans (PA Local Portion)	0			0	0	0 0		0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Initial Long-Term Loan (TO)	2 081	5.29	38 210	0 124 79	3 120.89	8 (	0	0				0	ő	0	0	0	0	0	0	0	0	0	0	0	0	0	ő	0	0	0	0	0	0	<u> </u>	0 0
Long -Term Loan (Concessionaire)	0		) (	0	0	0 2.54	1 0	0		654	407	0	0	9.372	0	1 199	0	655	0	0	41 162	9.372	0	0	0	1 854	0	0	0	9.372	59 807	. 0	0	655	0
Capitalized Interest (Long-term: Government)	0			0	0	0									-	.,	-						-	-		.100.1			-				-		-
Capitalized Interest (Long-term: TO facilities)	163			0	0	0 (	0	0	(	) (	) (	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-		-	-	-				<u> </u>				-	-			-		-		_	-	-	-				-				-	-	
Cash Outflow	2 457	10 70	50 309	9 146.90	8 155.41	5 41.893	39.584	38 701	37.819	37 571	36 564	35,348	34 461	42 757	34 225	34 461	32 267	31 971	30.488	29.534	69 664	44 494	35 591	34 257	31,986	32 584	29.696	28 4 36	27 109	35 226	86 168	27 062	20.393	20.451	19.320
												0010.0			0.1100									0.1201			201000			001000					1
CASH FLOWS FROM INVESTING ACTIVITIES	2 243	5.29	38.210	124 79	3 120.89	8 2.54	0	0	(	654	407	0	0	9.372	0	1 199	0	655	0	0	41 162	9.372	0	0	0	1 854	0	0	0	9 372	59 807	. 0	0	655	0
Construction in Progress (PA)	0	(		0	0	0 (	0 0	0	(		) (	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C	0
Capitalized Interest (Long-term: Government)	0			0	0	0 (	) 0	0			) (	0	0	0	0	0	0	0	0	0	Ő	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Construction in Progress (TO)	2 081	5.29	38.210	0 124 79	3 120.89	8 (	) 0	0			) (	0	0	0	0	0	0	0	0	0	Ő	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capitalized Interest (Long-term: TO)	163													-	-		-	-			-		-	-					-				-	-	-
Assets Acquired (PA)	0	(	) (	0	0	0 (	0	0	(	) (	) (	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C	0
Assets Acgired Local Portion (PA)	0			0	0	0 0	) 0	0				0	0	0	0	0	0	0	0	0	Ő	0	0	0	0	0	0	0	0	0	0	0	0	C C	0
Assets Acquired (Concessionaire: Equity and Equipment)	0	(		0	0	0 2.54	0	0		) 654	407	0	Ö	9.372	0	1 199	0	655	0	0	41 162	9.372	0	0	Ö	1 854	ő	0	0	9.372	59 807	0	0	655	0
CASH FLOWS FROM FINANCING ACTIVITIES	214	5.41	7 12 099	9 22.11	5 34.51	7 39.35	39.584	38 701	37.819	36.916	36 157	35,348	34 461	33,385	34 225	33 262	32 267	31 317	30 488	29.534	28 502	35 122	35 591	34 257	31,986	30 731	29.696	28 436	27 109	25 854	26,361	27.062	20.393	19 796	19.320
Renavment of Initial Loan Principal (PA)	0		) (	0	0	0 (	0 0	0	(	) (	) (	0	0	0	0	0	0	0	00,100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C	0
Renavment of Interest on Initial Loans (PA)	0			0	0	0 (	0	0			) (	0	0	0	0	0	0	0	0	0	Ő	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renavment of shirt-Term Loan Principal (PA Reinvestment)	0			0	0	0 0	0 0	0			) (	0	0	0	0	0	0	0	0	0	Ő	0	0	0	0	0	0	0	0	0	0	0	0	C	Ö
Repayment of Interest on Short-Term Loans (PA Reinvest)	0	(		0	0	0 0	0 0	0 Ö		) (	0 0	Ő	Ő	Ő	0	Ő	Ő	0	ů	0	Ő	0	0	0	0	0	0	0	0	0	Ő	0	0	0	i o
Repayment of Lon-Term Loan Principal (PA Local Portion)	0	(	) (	0	0	0 (	0 0	0		) (	) (	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repayment of Interest on Long-Term Loans (PA Local Portion)	0	(	) (	0	0	0 (	0 0	0		) (	) (	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repayment on Long-Term Loans (TO Local Loan)	51	4.896	9,706	6 9.70	6 9.70	6 9.70	9,706	9,706	9,706	9,706	9,706	9,706	9,706	9,706	9,706	9,706	9,706	9,706	9,706	9,706	9,706	9,706	9,706	9,706	9,706	9,706	9,706	9.706	9.706	9,706	9,706	4.853	0	0	0
Repayment of Interest on Long-Term Loans (TO Local Loan)	163	52	2 39	3 12.40	9 24.81	1 26.75	25 733	24 714	23.695	22 675	21.656	20.637	19.618	18,599	17 580	16 561	15.542	14 522	13 503	12 484	11 465	10 446	9 4 2 7	8 408	7 389	6.370	5 350	4 331	3 312	2 293	1 274	255	0	C	0
Renavment of Lon-Term Loan (Concessionaire Equip)	0		) ()	0	0	0 0	254	254	254	1 256	320	360	360	360	1 297	1 297	1 163	1 163	1 229	1 229	1 163	5 239	6 176	6 176	5 239	5 239	5 304	5 304	5 239	5 239	6 176	8 040	7 103	7 102	7 169
Renavment of Interest on Long-Term Loans (Conc. Equip)	0			0	0	0 0	267	240	213	3 187	229	238	200	162	1 109	972	962	840	786	657	528	4 728	5 162	4 514	3,865	3 315	2,960	2 403	1 846	1,296	1 730	7.361	6.517	5 771	5 094
Repayment of short-Term Loan (PA)						1		1				1													.1000	/10.00			10.0				,	1	
Repayment of short-Term Loan (Concessionaire)	1		1	1		1	1	1		1	1																								
Repayment of Interest on Short-Term Loans (Concessionaire)	0	(	) (	0	0	0 (	0 0	0		) (	) (	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Income Tax (Concessionaire only)	0			0	0	0 2.89	3.624	3.787	3.95	4.094	4.246	4,406	4,576	4.558	4.533	4,726	4.894	5.085	5.264	5.458	5.639	5.003	5.120	5,454	5.787	6.101	6.376	6.691	7.006	7.320	7.475	6.553	6,773	6.922	7.057
			1	1	1					1,00	1,22.0	1		1,000			.100	11000	7,201		. 1000	. 10.00				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	010.10	0100 1	1000	10.00					
Cash Inflow - Cash Outflow	-214	-5,411	-12,099	9 -22,11	5 -34,51	7 9,90	1 12,567	13,219	13,875	5 14,557	15,100	15,699	16,380	17,254	16,218	16,988	17,796	18,561	19,210	19,987	21,019	14,399	13,930	15,264	17,536	18,791	19,825	21,086	22,412	23,668	23,160	22,459	29,129	29,725	30,202
Cash Ending	-214	-5.63	-17.730	-39.84	5 -74.36	2 -64.46	-51.894	-38.675	-24.80	-10.244	4.856	20.555	36,935	54,190	70,408	87.396	105,192	123,753	142.963	162.950	183.969	198.369	212.299	227.563	245.099	263.890	283,715	304.801	327.213	350.881	374.041	396,500	425.629	455.354	485,556
Later in the second sec			-			-				-					1,100			11.00	1000	. 1000			1000	1000	.,				10.10						

#### Balance Sheet (\$'000s)

Balance Sheet (\$'000s)	2011	2012	2013	201	4 2015	5 2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
CURRENT ASSETS	-214	-5,631	-17,730	-39,84	5 -74,362	2 -64,461	-51,894	-38,675	-24,801	-10,244	4,856	20,555	36,935	54,190	70,408	87,396	105,192	123,753	142,963	162,950	183,969	198,369	212,299	227,563	245,099	263,890	283,715	304,801	327,213	350,881	374,041	396,500	425,629	455,354	485,556
Cash and Cash Equivalent Investments	-214	-5,631	-17,730	-39,84	5 -74,362	2 -64,461	-51,894	-38,675	-24,801	-10,244	4,856	20,555	36,935	54,190	70,408	87,396	105,192	123,753	142,963	162,950	183,969	198,369	212,299	227,563	245,099	263,890	283,715	304,801	327,213	350,881	374,041	396,500	425,629	455,354	485,556
PROPERTY, PLANT AND EQUIPMENT	2,081	7,371	45,581	170,37	3 291,271	1 285,782	277,752	269,721	261,691	254,205	246,472	238,332	230,191	230,474	221,385	213,495	204,406	195,971	186,882	177,793	209,624	209,665	200,334	191,003	181,672	174,195	164,863	155,532	146,201	146,242	196,909	187,768	178,627	170,141	161,000
Construction in Progress (PA)	0	0	0		0 0	0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fixed Assets (PA)	0	0	0		0 0	0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Accumulated Depreciation (PA)	0	0	0		0 0	) (	) ()	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Fixed Assets (PA)	0	0	0		0 0	) (	) ()	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fixed Assets (PA Local Portion)	0	0	0	)	0 0	0 0	0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Accumulated Depreciation (PA Local Portion)	0	0	0		0 0	0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Fixed Assets (PA Local Portion)	0	0	0	)	0 0		0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Final Acasta (Companying)	0.004	7.074	45 504	470.03	004.07/	202.04/	000.040	202.042	000.040	204 467	204.074	204.074	204.074	204.246	204.240	205 445	205 445	202.000	200 000	200,000	047.004	250 022	250 022	250 022	256 622	250 407	250 407	250 407	250 407	267.050	407.000	407.000	407.000	400.000	400.000
Fixed Assets (Concessionaire)	2,061	7,3/1	45,501	170,37	3 291,27	293,012	293,012	293,612	293,012	294,467	294,674	294,674	234,074	304,240	304,240	305,445	305,445	306,099	306,099	306,099	407.007	440,000	330,033	300,033	474.004	300,407	330,407	330,407	330,407	307,039	427,000	427,000	427,000	420,320	420,320
Accomulated Depreciation (Concessionaire)	0.004	7 074	45 504	470.03	0 004 074	0,030	077.760	24,091	32,121	40,202	40,402	36,342	09,002	000 474	02,001	91,950	101,039	110,120	400,000	126,300	137,637	140,900	150,299	105,030	174,901	104,292	193,623	202,954	212,203	221,010	230,757	239,090	470.007	236,179	267,320
Net Fixed Assets (Concessionaire)	2,061	7,371	45,501	170,37	3 291,27	205,704	2/1,/52	209,721	201,091	234,203	240,472	230,332	230,191	230,474	221,305	213,495	204,400	195,971	100,002	177,795	209,624	209,005	200,334	191,005	101,072	174,195	104,003	155,532	140,201	140,242	196,909	10/,/00	1/0,02/	170,141	161,000
	4.007	4.740	07.054	400.50	040.000	004.004	005.050	004.040	000.000	040.004	054 000	050.007	007 407	2014 004	004 700	200.004	200 500	240 705	220.045	240 742	202 504	400.004	440.000	440 500	400 774	400.004	440 570	400.000	470 444	407 400	E70.0E0	504.000	004.050	COF 405	CAC FEC
TOTAL ASSETS	1,007	1,740	27,001	130,32	210,905	221,321	220,000	231,046	230,090	243,901	201,320	230,007	207,127	204,004	291,795	300,691	309,390	319,725	329,043	340,743	393,394	400,034	412,033	410,300	420,771	430,004	440,370	400,333	473,414	497,123	570,950	304,200	004,230	023,493	040,000
CURRENT LIABILITIES	0	0	0		0 0	0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Short-Term Borrowings (PA)	0	0	0		0 0	) (	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Short-Term Borrowings (Concessionaire)	0	0	0		0 0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
					-			_																-				_		-	-			-	
LONG-TERM LIABILITIES	2,030	2,424	30,928	146,01	5 257,207	7 250,042	240,082	230,122	220,162	210,856	201,238	191,172	181,106	180,411	169,408	159,604	148,734	138,520	127,585	116,651	146,943	141,371	125,489	109,607	94,662	81,571	66,561	51,551	36,606	31,034	74,959	62,065	54,962	48,513	41,345
Long-Term Borrowings (PA from JBIC)	0	0	0	1	0 0	) (	0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long-Term Borrowings (PA from Private)	0	0	0	1	0 0	) (	0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long-Term Borrowings (PA from Private Local Portion)	0	0	0	1	0 0	) (	0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long-Term Borrowings (Concessionaire)	2.030	2.424	30,928	146.01	5 257.207	7 250.042	240.082	230,122	220,162	210.856	201.238	191.172	181.106	180.411	169.408	159.604	148,734	138.520	127.585	116.651	146.943	141.371	125,489	109.607	94.662	81.571	66.561	51,551	36,606	31.034	74.959	62.065	54,962	48,513	41.345
CAPITAL	-163	-684	-3.077	-15.48	7 -40.298	3 -28.721	-14.224	924	16.728	33,105	50.090	67.715	86.021	104.252	122.385	141.288	160.863	181.205	202.260	224.093	246.650	266.663	287.144	308.959	332,108	356.513	382.017	408,782	436.808	466.089	495.991	522.203	549.294	576,982	605.211
Retained Earnings	-163	-684	-3.077	-15.48	7 -40.298	3 -28.721	-14.224	924	16,728	33,105	50.090	67.715	86.021	104.252	122.385	141.288	160,863	181.205	202.260	224.093	246.650	266.663	287,144	308,959	332,108	356.513	382.017	408,782	436.808	466.089	495,991	522,203	549,294	576,982	605.211
											,					.,		,		.,	. 1000											. ,			
TOTAL LIABILITIES AND CAPITAL	1.867	1,740	27.851	130.52	8 216.909	221.321	225.858	231.046	236.890	243.961	251.328	258.887	267.127	284.664	291,793	300,891	309,598	319,725	329,845	340,743	393,594	408.034	412.633	418,566	426,771	438.084	448.578	460.333	473,414	497,123	570.950	584.268	604.256	625,495	646.556





 Table 5.4-5
 Result of Financial Analysis (Case-3): Bojonegara Port

	Year of No 4-6 Q. Crane added	2018	1																				
	Year of No.7 Q. Crane added	3000			0012013																		
	Concession Fee	1st Prd	2nd Prd	3rd Prd	1							1000\$											
	Fixed	0	0	0				RTG Le	ase for 15	vears		0											
	Variable	3,383	3,491	3,437				GT Crane	lease for	25 years		0											
			Financial Indica	tors			2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	PROFITABILITY (Net Operating In	ncome/ Net Fixed Assets)	(O.:		0.00*		0.00*	0.00%	0.00%	0.00*	10.55%	14178	14510	14.00%	15.00	15.10%	10.05%	10 508	10.178	10.748	10.70%	17.04%	10.00%
		Rate of Return on Net Fixed Asse	is (oncention, over a)		0.00%		0.00%	0.00%	0.00%	0.00%	12.00%	14.1770	14.01%	14.00%	10.20%	10.10%	10.05%	10.03%	10.17%	10.74%	10.70%	17.34%	10.02%
	OPERATIONAL EFFICIENCY																						
		Operating Ratio (Criterion: und	ler 0.7- 0.75)				0.07	0.07	0.07	0.07	0.37	0.34	0.34	0.34	0.35	0.36	0.35	0.35	0.36	0.36	0.38	0.37	0.37
		Working Ratio (Criterion: under	r 0.5- 0.6)				0.07	0.07	0.07	0.07	0.23	0.21	0.21	0.21	0.21	0.23	0.21	0.21	0.21	0.21	0.23	0.21	0.21
	LOAN REPAYMENT CAPACITY																						
		Debt Service Coverage Ratio	(Criterion: over 1.0	)			0.00	0.00	0.00	0.00	1.22	1.33	1.37	1.41	1.44	1.45	1.52	1.57	1.62	1.58	1.60	1.70	1.77
			concessionn fe	e rate (fixed	<u>)</u> 		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
			concession ree	rate (variab	10/		076	0%	0.0	0%	0%	576	570	570	576	576	576	576	576	576	576	J76	576
			total concession	fee/revenue			5%	5%	5%	5%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
		MAXIMUM CONCESSION FEE RATE	NPV(Profit/Rever	nue)	83.79%	0000	0000	0000	0001	0000	0000	0004	0005	0000	0007	0000	0000	0040	0041	0040	0040	0044	0045
00	PROFITABILITY (Net Operating In	come/ Net Fixed Assets)	rinancial Indica	tors		2028	2029	2030	2031	2032	2033	2034	2035	2030	2037	2038	2039	2040	2041	2042	2043	2044	2043
		Rate of Return on Net Fixed A	Assets (Criterion: c	over%)	8.00%	19.41%	20.28%	17.12%	17.73%	18.55%	19.45%	20.44%	20.72%	22.55%	23.89%	25%	25.61%	19%	20.86%	21.98%	23.15%	24.54%	28.18%
	OPERATIONAL EFFICIENCY	Operating Batic (Criterian) upd	0.7-0.75)			0.27	0.27	0.20	0.27	0.27	0.27	0.27	0.20	0.27	0.27	0.27	0.27	0.20	0.27	0.27	0.27	0.27	0.20
		Working Batio (Criterion: under	r 0.5 - 0.6)			0.37	0.37	0.39	0.37	0.37	0.37	0.37	0.39	0.37	0.37	0.37	0.37	0.39	0.37	0.37	0.37	0.37	0.29
			0.0 0.0/			0.21	0.21	0.20	0.21	0.21	0.21	0.21	0.20	0.21	0.21	0.21	0.21	0.20	0.21	0.21	0.21	0.21	0.20
	LOAN REPAYMENT CAPACITY																						
	EINANCIAL INTERNAL BATE OF	Debt Service Coverage Ratio	(Criterion: over 1.0		12.48	1.84	1.92	1.97	1.59	1.58	1.67	1.83	1.91	2.06	2.21	2.39	2.60	2.51	2.50	3.92	4.15	4.35	4.53
	FINANCIAL INTERNAL RATE OF I				10.47																		
			concessionn fe	e rate (fixed	i)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
			concession fee	rate (variab	le)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
			total concession	foo/rovopuo		6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	65	6%	6%	6%	6%
		MAXIMUM CONCESSION FEE RATE	NPV(Profit/Rever	nue)	83.79%	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0/0	0.0	0/0	0.0	0.0	0.0	0,0	0.0
		Retaine	d Earnings Total		601,015	(\$1,000)																	
	PROFILABILITY (Net Operating In	Not Fixed Accete)	Financial Indica	tors			2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
		Rate of Return on Net Fixed A	Assets (Criterion: c	over %)	1.59%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	OPERATIONAL EFFICIENCY	On the Datia (O it ai	0.7.0.75				0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00
		Working Batio (Criterion: under	r 0.5-0.6)				0.00	0.00	0.00	0.00	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06
	LOAN REPAYMENT CAPACITY																						
		Debt Service Coverage Ratio (	Criterion: over 1.0	)		2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PA	PROFITABILITY (Net Operating In	come/ Net Fixed Assets)	rmancial Indica	cors		2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
		Rate of Return on Net Fixed A	Assets (Criterion: c	over %)	1.59%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	OPERATIONAL EFFICIENCY	One setting Batting (Onits at a	(ar 0.7 - 0.75)			0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Working Ratio (Criterion: under	r 0.5- 0.6)			0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.00
		g rado (oncononi ando	0.0,			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0,00	0.00
	LOAN REPAYMENT CAPACITY																						
		Debt Service Coverage Ratio	Criterion: over 1.0		111 000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	FINANCIAL INT	FRNAL RATE OF RETRUN	u Larnings 10tai		111,330	(\$1,000)																	





 Table 5.4-6
 TOC's Income Statement (Case-3): Bojonegara Port

Income Statement of the BJN Project (\$'000s)	2011	2012	2013	2014	4 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044 20
REVENUE																																_		
Harbor & Light Dues		0	0		0 0	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589	3,589 3,5
Pilotage		0	0	(	0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anchorage Fee for Vessel		0	0	(	0 0	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775 2,7
Anchorage Fee for Cargo																																		
Whartage for Vessels		0	0	(	0 0	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680	3,680 3,6
Whartage for Cargo		0	0		0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Procedure ree							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Towage ree		0	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	
Charao for mooring/unmooring		0	0			60	56	66	66	66	66	0 66	66	56	66	56	66	56	56	56	0 EC	56	56	56	56	56	0 EC	66	56	56	56	56	66	66
Charge for mooning/closing batch			0			250	256	250	256	256	256	256	250	256	256	256	266	256	256	256	256	256	256	266	256	256	256	266	256	256	256	256	266	266 2
Charge for bandling container		0	0			45 041	47 487	47 287	47 093	46 903	46 718	46 537	46 360	46 187	46.018	45 852	45 690	45 532	45 377	45 225	45 225	45 225	45 225	45 225	45 225	45 225	45 225	45 225	45 225	45 225	45 225	45 225	45 225	45 225 45 2
Charge for storage of Container		0	0		0 0	883	035	035	935	40,000	935	035	936	936	936	936	40,000	936	936	936	036	936	936	936	936	936	936	936	936	936	936	936	936	036 0
Charge for CES		0	0		0 0	0000	0	000	0	000	000	000	0	0	000	0	000	0	0	000	0	0	000	0	0	0	0	0	0	0	0	000	0	0
Charge for PTI (Pre Trip Inspection) of Reefer Container		0	0	(	0 0	4	4	4	4	4	4	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Charge for lift-on/lift -off (R/D) at container vard		0	0	(	0 0	11.380	11.998	11.948	11.900	11.852	11.806	11.760	11.716	11.673	11.630	11.589	11.548	11.508	11,469	11.431	11.431	11.431	11.431	11.431	11.431	11.431	11.431	11.431	11.431	11.431	11.431	11.431	11.431	11.431 11.4
Charge for handling cargoes												1.11																						
Charge for general cargo storage																																		
Concession Fixed Fee (To PA)																																-		
Concession Variable Fee (To PA)																																		
TOTAL REVENUE		0	0		0 0	67,663	70,779	70,530	70,287	70,050	69,818	69,592	69,370	69,154	68,942	68,736	68,533	68,335	68,141	67,952	67,952	67,952	67,952	67,952	67,952	67,952	67,952	67,952	67,952	67,952	67,952	67,952	67,952	67,952 67,9
EXPENSE																																		
DIRECT EXPENSE																																		
Labour Cost (Concessionaire)		0	0	) (	0 0	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171	2,171 2,1
Maintenance of equipment (for PA asset)		0	0	(	0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maintenance of equipment (Concessionaire including shore cranes)		0	0		0 0	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019	4,019 4,0
Fuel & Utilities (for PA)		0	0		0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fuel & Utilities (for Concessionaire)		0	0	(	0 0	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546	2,546 2,5
Maintenance of infrastructures (PA: major repairs)		0	0		0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maintenance of infrastructures (Concessionaire: minor repairs)		0	0	(	0 0	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
Maintenance dredging		0	0		0 0	1,250	0	0	0	0	1,250	0	0	0	0	1,250	0	0	0	0	1,250	0	0	0	0	1,250	0	0	0	0	1,250	0	0	0
Total Direct Expense		U	0		U U	10,043	8,793	8,793	8,793	8,793	10,043	8,793	8,793	8,793	8,793	10,043	8,793	8,793	8,793	8,793	10,043	8,793	8,793	8,793	8,793	10,043	8,793	8,793	8,793	8,793	10,043	8,793	8,793	8,793 8,71
NDIRECT EXPENSE														0																				
Depreciation (equipment) (for PA Asset)		0	0		0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation (equipment) (Concessionaire)		0	0		0 0	5,206	5,206	5,206	5,206	5,316	5,316	5,316	5,316	6,265	6,265	6,265	6,265	6,265	6,265	6,265	6,507	6,507	6,507	6,507	6,507	6,507	6,507	6,507	6,507	6,507	6,507	6,507	6,507	6,507 6,5
Depreciation (Buildings of TO)		0	0			190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	0		0	
Depreciation (PA Infrastructure)		0	0			2.076	2.076	2.076	2.075	2.076	2.075	2.076	2.076	2.076	2.075	2.075	2.076	2.076	2.076	2.075	2.076	2.075	2.076	2.075	2.076	2.075	2.076	2.075	2.076	2.076	2.075	2.075	2.075	2,075 2.0
Depreciation (TO Facilities)		0	0			3,975	3,9/5	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,9/5	3,975	3,975	3,975	3,975	3,975	3,9/5	3,975	3,9/5	3,975	3,975	3,975	3,975	3,9/5	3,975	3,975	3,975	3,975	3,975 3,9
Depreciation (PA Local Pontion)		0	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	- 0	- 0	
bepreciation (Consulting service)		0	0			1 015	1.062	1 059	1.054	1.051	1.047	1.044	1.041	1.027	1.024	1 021	1.029	1.025	1.022	1 010	1 010	1.010	1 010	1.010	1.010	1 010	1 010	1.010	1 010	1 010	1.010	1.010	1.010	1.010 1.0
Red Debt (0.6% of Revenue)						220	264	1,000	251	250	240	2/10	247	246	245	244	242	242	241	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240 2
Concession Fixed Fee (to PA)		0	0		0 0	0 0	3.54	0	0	330	0	040	0	040	0	0	043	042	0	0	040	0	040	040	040	0	040	0	0	0	0	040	0	0 340 34
Concession Variable Fee (to PA)		0	0		0 0	3 383	3 539	3.527	3 5 1 4	3 502	3 491	3 480	3 469	3 458	3 447	3 437	3 427	3 4 17	3 407	3 398	3 398	3 398	3 398	3 398	3 398	3 398	3 398	3 398	3 398	3 398	3 398	3 398	3 398	3.398 3.3
Land & Water Rental Fee (to PA)		0	0	(	0 0	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498 4
RTG Lease Fee (to PA)		0	0	(	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crane Lease Fee (to PA)		0	0	(	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concession Fee for RTG (to PA)		0	0	) (	0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concession Fee for Crane (to PA)		0	0	) (	0 0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Indirect Expense		0	0		0 0	14,606	14,824	14,807	14,790	14,883	14,867	14,851	14,835	15,769	15,754	15,740	15,726	15,712	15,698	15,685	15,927	15,927	15,927	15,927	15,927	15,927	15,927	15,927	15,927	15,927	15,736	15,736	15,736	15,736 15,77
GENERAL & ADMINISTRATIVE																																	_	
Administrative Personnel (Concessionaire)		0	0	) (	0 0	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367	367 3
Others (Personnel Cost x 40%)		0	0		0 0	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147 1
PA Bojonegara Port Office Administration		0	0	(	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total General & Administrative		0	0	) (	0 0	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514 5
				1	1	1																												
TOTAL EXPENSE		0	0	) (	0 0	25,163	24,131	24,114	24,097	24,190	25,424	24,158	24,143	25,076	25,062	26,297	25,033	25,019	25,005	24,992	26,484	25,234	25,234	25,234	25,234	26,484	25,234	25,234	25,234	25,234	26,294	25,044	25,044	25,044 25,0
						0.767																												
OPERATING INCOME		0	0	(	0 0	42,500	46,648	46,416	46,190	45,860	44,394	45,433	45,228	44,078	43,881	42,439	43,500	43,316	43,136	42,959	41,467	42,717	42,717	42,717	42,717	41,467	42,717	42,717	42,717	42,717	41,658	42,908	42,908	42,908 42,9
OTHER INCOME/(EXPENSE)				I		I																												
Repayment of Interest on Initial Loans (PA)	0	0	0	(	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repayment of Interest on Long-Term Loans (PA Local Portion)	0	0	0		0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repayment or interest on Long-Term Loans (TO Local Loan)	203	650	4,061	15,609	9 29,150	31,289	30,097	28,905	27,713	26,521	25,329	24,137	22,946	21,754	20,562	19,370	18,178	16,986	15,794	14,602	13,410	12,218	11,026	9,834	8,642	7,450	6,258	5,066	3,874	2,682	1,490	298	-0	0
Repayment or interest on Short-Term Loans (PA)	0	0	0		u 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4 700	0	0	0	0	0	0	0	0	4 700	7 001	0	U 6 774 6 0
repayment of Interest on Long-Term Loans (Concessionaire)	0	0	0		0	1 0	267	240	213	187	229	238	200	162	1,109	9/2	962	840	786	657	528	4,728	5,162	4,514	3,865	3,315	2,960	2,403	1,846	1,296	1,730	/,361	6,517	5,771 5,0
repayment of Interest on Short-Term Loans (Concessionaire)	000	000	4.000	48.000	00.450	04.000	20.221	00.4.10	07.007	00 700	05.550	04.075	00.4.10	24.042	04.070	00.040	40.472	47.000	40 500	45.050	40.000	40.040	40.400	44.040	40.507	40.705	0.040	7 400	E 700	2.070	0.000	7.070	0.047	6 774 5 0
IUTALUTHER	203	650	4,061	15,605	9 29,150	31,289	30,364	29,146	27,927	26,708	25,558	24,375	23,146	21,916	21,670	20,342	19,140	17,826	16,580	15,259	13,938	16,946	16,188	14,348	12,507	10,765	9,218	7,469	5,720	3,978	3,ZZ0	7,659	6,517	5,771 5,01
EARNINGS before TAXES	-202		-4.061	-15.60	-20 160	11 211	16 294	17 274	18 262	10 151	18 890	21.059	22 092	22 162	22 21 1	22.007	24 361	25 404	26 550	27 700	27 520	25 774	26 520	28 370	30.210	30 702	33 500	35 240	36.009	38 7/0	38 429	35 2/0	36 304	37 137 27 9
Environe science TRAES	-203	-000	-4,001	-10,000	-20,100	11,211	10,204	17,211	10,203	10,131	10,030	21,000	22,002	22,102	22,211	22,007	24,301	20,401	20,000	21,100	21,328	23,111	20,329	20,310	30,210	30,702	33,300	33,24d	30,000	30,740	30,430	30,248	30,381	37,137 37,0
INCOME TAX (from Concessionaire only)		~	0	· /	0	2 242	3 257	3.454	3,652	3,830	3 767	4 212	4 440	4 499	4 4 4 2	4 410	4 872	5 009	5 311	5 540	5 500	5 154	5 306	5.674	6.042	6 140	6 700	7.050	7 400	7 7/0	7 699	7.050	7 270	7.427 7.6
TO CITE THAT WITH OUT CONCESSIONALE UNITY		U		1		2,242	3,237	0,404	3,003	3,030	3,10/	4,212	4,410	4,432	4,442	4,418	4,072	3,080	3,311	3,340	3,300	3,134	3,300	3,074	0,042	0,140	0,700	1,000	7,400	1,140	1,000	1,000	1,210	7,927 7,51
NET INCOME after tax	-203	-650	-4.061	-15.60	-29 150	8 969	13 027	13.817	14 611	15 321	15.069	16 846	17 666	17 729	17 769	17 677	19.489	20.393	21 245	22 160	22 023	20.617	21 224	22 696	24 168	24 562	26 800	28 199	29 598	30 992	30 750	28 199	29 113	29 709 30 2
	-03	500	4,001	10,000		0,008	10,021	10,017	14,011	10,021	10,000	10,040	11,000		11,155		10,408	20,000	21,240		22,020	20,017	444	22,000		27,002	20,000	20,103	20,000	00,002	30,730	20,100	20,110	
Rotained Earnings	202	953	4 012	20.52	40 673	40 704	07.077	12 960	761	46.070	21.140	47.007	CE CEO	02.202	404 450	440.007	400.040	450 700	470.052	2022 442	004 407	044 754	00E 077	200.672	242.042	207 402	264 202	202 402	400.000	450.000	400 740	E44.044	E44.0E4	E70 702 004 0





#### Table 5.4-7 TOC's Cash Flow Statement and Balance Sheet (Case-3): Bojonegara Port

Statement of Cash Flows (\$'000s) of Bojonegara	2011	2012	201:	3 201	4 201	5 2016	6 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	203	2039	2040	2041	2042	2043	2044
Cash Beginning	0	-266	-6.64	6 -22.05	8 -49.02	-89 522	-82 533	-71 741	-60 159	-47 783	-34 586	-21 708	-7 092	8 343	24 790	40 340	55 798	73 201	91 509	110 603	130 613	150 793	165 492	179 860	195 700	213 950	232 593	253.40	275 624	299.304	324 377	348.081	373.046	405 537
	-												.,	0,010	2.11.00				0.1000							2.0,000		200,10	2. 0102			0.0100.	0.010.00	
Cash Inflow	2 706	7 244	65.21	2 135.89	1 134.45	54 413	56.020	55 788	55 562	55 006	54 283	54 015	54 709	63,880	54 311	54.068	53 031	54 401	53 566	53 390	93 302	62 762	53 300	53 300	53 300	53 003	53 300	53 30	53 300	62 762	111 047	53 300	53 300	54 044
		.,						001.00	001002			0.10.0				0.1000			00,000			0								020.02		00,000	001000	
CASH FLOWS FROM OPERATING ACTIVITIES	0	0	1	0	0	51.873	56.020	55 788	55 562	55 341	53.876	54 015	54 709	54 508	54 311	52 860	53 031	53 747	53 566	53 390	52 140	53 390	53 300	53 300	53 300	52 140	53 300	53 30	53 300	53 390	52 140	53 300	53 300	53 390
Operating Income	0	0		0	0	42 500	46 648	46 416	46 190	45,860	44 394	45 433	45 228	44 078	43,881	42 439	43 500	43,316	43 136	42 959	41 467	42 717	42 717	42 717	42 717	41 467	42 717	42 71	42 717	42 717	41 658	42,908	42 908	42,908
Depreciation (equipment) (for PA Asset)	0	0	) (	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0		0	0
Depreciation (equipment) (Concessionaire)	0	G	) (	0	0	5.206	5.206	5.206	5.206	5.316	5.316	5.316	5.316	6.265	6.265	6.265	6.265	6.265	6.265	6.265	6.507	6.507	6.507	6.507	6.507	6.507	6.507	6.50	6.507	6.507	6.507	6.507	6.507	6.507
Depreciation (Buildings of PA)	0	G	) (	0	0	190	) 190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	0	0,000	0 0	0
Depreciation (PA Infrastructure)	0	0	) (	0	0		0 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(		0	0		0	0
Depreciation Expense (TO Facilities)	0	C	) (	0	0	3,975	5 3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,97	3,975	3,975	3,975	3,975	3,975	3,975
Depreciation (PA Local Portion)	0	0	) (	0	0	) (	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(	) (	0	0	0 0	0 0	0
Depreciation (Consulting Service)	0	0	) (	0	0	0 0	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(	) (	0	0	0 0	0 0	0
[Total No cash Items included in Net Income (Depreciation)]	0	C	) (	0	0	9.372	9.372	9.372	9.372	9.482	9,482	9.482	9,482	10,430	10.430	10.430	10.430	10,430	10.430	10.430	10.672	10.672	10.672	10.672	10.672	10.672	10.672	10.67;	10.672	10.672	10.482	10.482	10.482	10.482
CASH FLOWS FROM FINANCING ACTIVITIES	2.796	7.244	65.21	2 135.89	1 134.45	2 2.541	1 0	0	0	655	407	0	0	9.372	0	1,199	0	655	0	0	41.162	9.372	0	0	0	1.854	0	(	) (	9.372	59.807	0	0	655
Initial Long-Term Loans (PA)	0	0	) (	0	0	) (	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(	) (	0 0	0	0 0	0 0	0
Long-Term Loans (PA Reinvestment)	0	C	) (	0	0	) (	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(	) (	0 0	0	0 0	0 0	0
Long-Term Loans (PA Local Portion)	0	C	) (	0	0	) (	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(	) (	0 0	0	0 0	0 0	0
Initial Long-Term Loan (TO)	2,593	6,594	61,15	2 135,89	1 134,45	2 (	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		) (	0 0	0	0 0	0 0	0
Long -Term Loan (Concessionaire)	0	0	) (	0	0	2,541	0	0	0	655	407	0	0	9,372	0	1,199	0	655	0	0	41,162	9,372	0	0	0	1,854	0		0 0	9,372	59,807	·	0 0	655
Capitalized Interest (Long-term: Government)	0	0	) (	0	0	D																												
Capitalized Interest (Long-term: TO facilities)	203	650	4,06	1 1	0	0 0	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(	) (	0 0	0	0 0	0 0	0
Cash Outflow	3,062	13,623	80,62	5 162,85	3 174,95	3 47,425	5 45,227	44,206	43,186	42,799	41,404	40,299	39,274	47,433	38,762	38,610	36,527	36,094	34,472	33,380	73,121	48,063	39,022	37,550	35,140	35,350	32,574	31,175	5 29,710	37,689	88,242	28,425	20,898	20,956
CASH FLOWS FROM INVESTING ACTIVITIES	2,796	7,244	65,21	2 135,89	1 134,45	2 2,541	1 0	0	0	655	407	0	0	9,372	0	1,199	0	655	0	0	41,162	9,372	0	0	0	1,854	0	(	) (	9,372	59,807	۲ C	0 0	655
Construction in Progress (PA)	0	0	) (	0	0	) (	) 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(	) (	0 0	0	0 0	0 0	0
Capitalized Interest (Long-term: Government)	0	0	)	0	0	0 0	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(	) (	0 0	0	0 0	0 0	0
Construction in Progress (TO)	2,593	6,594	61,15	2 135,89	1 134,45	2 (	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(	) (	0 0	0	0 0	0 0	0
Capitalized Interest (Long-term: TO)	203	650	4,06	1																														
Assets Acquired (PA)	0	0	) (	0	0	) (	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	(	) (	0	0	0 0	0 0	0
Assets Acgired Local Portion (PA)	0	0	) (	0	0	) (	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	(	) (	0	0	0 0	0 0	0
Assets Acquired (Concessionaire: Equity and Equipment)	0	0	) (	0	0	2,541	1 0	0	0	655	407	0	0	9,372	0	1,199	0	655	0	0	41,162	9,372	0	0	0	1,854	0	(	0 0	9,372	59,807	۲ C	0 0	655
CASH FLOWS FROM FINANCING ACTIVITIES	266	6,379	15,41:	3 26,96	1 40,50	2 44,884	45,227	44,206	43,186	42,145	40,997	40,299	39,274	38,061	38,762	37,411	36,527	35,439	34,472	33,380	31,959	38,691	39,022	37,550	35,140	33,496	32,574	31,175	5 29,710	28,317	28,435	28,425	20,898	20,302
Repayment of Initial Loan Principal (PA)	0	0	)	0	0	0 0	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(	) (	0 0	0	0 0	0 0	0
Repayment of Interest on Initial Loans (PA)	0	0	)	0	0	) (	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	(	) (	0 0	0	) (	0 0	0
Repayment of shirt-Term Loan Principal (PA Reinvestment)	0	0	) (	0	0	) (	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	(	) (	0 0	0	) (	0 0	0
Repayment of Interest on Short-Term Loans (PA Reinvest)	0	0	) (	0	0	0 0	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(	) (	0 0	0	0 0	0 0	0
Repayment of Lon-Term Loan Principal (PA Local Portion)	0	0	) (	0	0	0 0	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(	) (	0 0	0	0 0	0 0	0
Repayment of Interest on Long-Term Loans (PA Local Portion)	0	0	) (	0	0	0 0	0 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(	) (	0 0	0	0 0	0 0	0
Repayment on Long-Term Loans (TO Local Loan)	63	5,730	11,35	2 11,35	2 11,35	2 11,352	2 11,352	11,352	11,352	11,352	11,352	11,352	11,352	11,352	11,352	11,352	11,352	11,352	11,352	11,352	11,352	11,352	11,352	11,352	11,352	11,352	11,352	11,353	11,352	11,352	11,352	5,676	6 0	0
Repayment of Interest on Long-Term Loans (TO Local Loan)	203	650	4,06	1 15,60	9 29,15	31,289	30,097	28,905	27,713	26,521	25,329	24,137	22,946	21,754	20,562	19,370	18,178	16,986	15,794	14,602	13,410	12,218	11,026	9,834	8,642	7,450	6,258	5,06	3,874	2,682	1,490	298	3 - <mark>0</mark>	0
Repayment of Lon-Term Loan (Concessionaire Equip)	0	0	) (	0	0	or o	254	254	254	254	320	360	360	360	1,297	1,297	1,163	1,163	1,229	1,229	1,163	5,239	6,176	6,176	5,239	5,239	5,304	5,30	5,239	5,239	6,176	8,040	7,103	7,103
Repayment of Interest on Long-Term Loans (Conc. Equip)	0	0	) (	0	0		267	240	213	187	229	238	200	162	1,109	972	962	840	786	657	528	4,728	5,162	4,514	3,865	3,315	2,960	2,40	3 1,846	1,296	1,730	7,361	6,517	5,771
Repayment of short-Term Loan (PA)																																		
Repayment of short-Term Loan (Concessionaire)																																		
Repayment of Interest on Short-Term Loans (Concessionaire)	0	0	) (	0	0		0 0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0 0	0 0	0	0 0	0 0	0
Income Tax (Concessionaire only)	0	0	) (	0	0	2,242	2 3,257	3,454	3,653	3,830	3,767	4,212	4,416	4,432	4,442	4,419	4,872	5,098	5,311	5,540	5,506	5,154	5,306	5,674	6,042	6,140	6,700	7,05	7,400	7,748	7,688	7,050	7,278	7,427
				1	1	I	1			L									L											l				
Cash Inflow - Cash Outflow	-266	-6,379	-15,41	3 -26,96	1 -40,50	6,988	3 10,792	11,582	12,376	13,197	12,879	14,616	15,435	16,447	15,549	15,458	17,404	18,308	19,094	20,010	20,180	14,699	14,368	15,840	18,250	18,643	20,816	22,21	23,680	25,073	23,704	24,965	32,492	33,088
				1		I					l																							
Cash Ending	200	-6 646	a 22.05	8 .49.02	0 -89.52	-82 539	3 -71 741	-60 159	-47 783	-34 586	i -21 708	-7.092	8 343	24 700	40 340	55 708	73 201	91 509	110 603	130.613	150 793	165 492	179,860	195 700	213 050	232 503	253 400	275.62	1 200 304	324 377	240.001	I 373.046	405 537	438.626

#### ce Sheet (\$'000s)

Balance Sheet (\$'000s)	2011	2012	2013	2014	1 201	5 201	2017	2018	2019	2020	202	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
CURRENT ASSETS	-266	-6,646	-22,058	-49,020	-89,52	2 -82,53	-71,741	-60,159	-47,783	-34,586	-21,708	-7,092	8,343	24,790	40,340	55,798	73,201	91,509	110,603	130,613	150,793	165,492	179,860	195,700	213,950	232,593	253,409	275,624	299,304	324,377	348,081	373,046	405,537	438,626	472,190
Cash and Cash Equivalent Investments	-266	-6,646	-22,058	-49,020	-89,52	-82,53	-71,741	-60,159	-47,783	-34,586	-21,708	-7,092	8,343	24,790	40,340	55,798	73,201	91,509	110,603	130,613	150,793	165,492	179,860	195,700	213,950	232,593	253,409	275,624	299,304	324,377	348,081	373,046	405,537	438,626	472,190
																																			1
PROPERTY, PLANT AND EQUIPMENT	2,593	9,837	75,049	210,940	345,39	1 338,56	329,189	319,817	310,446	301,619	292,544	283,062	273,580	272,522	262,092	252,860	242,430	232,654	222,223	211,793	242,283	240,982	230,310	219,637	208,965	200,146	189,473	178,801	168,129	166,828	216,153	205,671	195,189	185,361	174,879
Construction in Progress (PA)	0	0	) (	) (	) (		) (	0	(	) ()	(	) (	0	) (	0 0	0	0	0	(	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fixed Assets (PA)	0	0	0 0	0 0	0 0	0	0 0	0	C	0 0		0	0		0 0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Accumulated Depreciation (PA)	0	0	) (	) (	) (	0	) (	0	(	0 0	(	) (	C	) (	0 0	0	0	0	(	0 0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Fixed Assets (PA)	0	0	) (	) (	) (	)	) (	0	(	0 0	(	) (	0	) (	0 0	0	0	0	(	0 0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eixed Assets (PA Local Portion)	0	0		) (	) (		) (	0		0	(	0			0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Accumulated Depreciation (PA Local Portion)	0	0						0							0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Fixed Assets (PA Local Portion)	0	0		) (	) (	0	0 0	0				0	0		0 0	0	0	0		0 0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fixed Assets (Concessionaire)	2,593	9,837	75,049	210,940	345,39	1 347,93	2 347,932	347,932	347,932	348,587	348,994	348,994	348,994	358,366	358,366	359,565	359,565	360,219	360,219	360,219	401,381	410,753	410,753	410,753	410,753	412,607	412,607	412,607	412,607	421,979	481,786	481,786	481,786	482,440	482,440
Accumulated Depreciation (Concessionaire)	0	0	) (	) (	) (	9,37	2 18,743	28,115	37,487	46,968	56,450	65,932	75,413	85,844	96,274	106,705	117,135	127,566	137,996	148,426	159,099	169,771	180,444	191,116	201,789	212,461	223,133	233,806	244,478	255,151	265,633	276,115	286,597	297,079	307,561
Net Fixed Assets (Concessionaire)	2,593	9,837	75,049	210,940	345,39	1 338,56	329,189	319,817	310,446	301,619	292,544	283,062	273,580	272,522	262,092	252,860	242,430	232,654	222,223	211,793	242,283	240,982	230,310	219,637	208,965	200,146	189,473	178,801	168,129	166,828	216,153	205,671	195,189	185,361	174,879
																																			<u> </u>
TOTAL ASSETS	2,327	3,191	52,990	161,920	255,87	256,02	257,448	259,658	262,663	3 267,032	270,836	275,970	281,923	297,312	302,431	308,658	315,631	324,163	332,827	342,406	393,076	406,474	410,170	415,337	422,915	432,739	442,883	454,425	467,432	491,205	564,235	578,717	600,726	623,987	647,069
CURRENT LIABILITIES	0	C	) (	) (	) (	0	0 0	0	(	0 0		0	0		0	0	0	0	(	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Short-Term Borrowings (PA)	0	0	) (	) (	) (	2		0	(	0	(		0		0	0	0	0	(	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Short-Term Borrowings (Concessionaire)	0	C	) (	) (	) (	0	0 0	0	Ċ	0 0		0	0	) (	0 0	0	0	0	(	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0
																																			í l
LONG-TERM LIABILITIES	2,530	4,044	57,904	182,443	3 305,54	2 296,73	285,125	273,519	261,912	250,961	239,696	227,983	216,271	213,931	201,281	189,831	177,315	165,454	152,873	140,293	168,939	161,720	144,192	126,664	110,073	95,336	78,679	62,023	45,432	38,213	80,492	66,776	59,672	53,224	46,055
Long-Term Borrowings (PA from JBIC)	0	0	) (	) (	) (	0	) (	0	(	0 0	(	) (	C	) (	0 0	0	0	0	(	0 0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long-Term Borrowings (PA from Private)	0	0	) (	) (	) (	) (	) (	0 0	(	0 0	(	) (	0	) (	0 0	0	0	0	(	0 0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long-Term Borrowings (PA from Private Local Portion)	0	0	) (	) (	) (	) (	) (	0 0	(	0 0	(	) (	0	) (	0 0	0	0	0	(	0 0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long-Term Borrowings (Concessionaire)	2,530	4,044	57,904	182,443	305,54	2 296,73	285,125	273,519	261,912	250,961	239,696	227,983	216,271	213,931	201,281	189,831	177,315	165,454	152,873	140,293	168,939	161,720	144,192	126,664	110,073	95,336	78,679	62,023	45,432	38,213	80,492	66,776	59,672	53,224	46,055
O ADITAL		0.50								10.070		(7.007	05.050	00.004		110.007	100.010	150 700	170.050	000 110	001107	0.11761	005 077	000 070		007 (00	001000	000 100	100.000	150 000	100 710			670 700	001.015
CAPITAL	-203	-853	-4,913	-20,52	3 -49,67.	2 -40,70	-27,677	-13,860	/51	16,072	31,140	47,987	65,652	83,38	101,150	118,827	138,316	158,709	179,955	202,113	224,137	244,754	265,977	288,673	312,842	337,403	364,203	392,402	422,000	452,992	483,742	511,941	541,054	570,763	601,015
Retained Earnings	-203	-853	-4,913	-20,523	3 -49,67	2 -40,70	-27,677	-13,860	751	16,072	31,140	47,987	65,652	83,382	101,150	118,827	138,316	158,709	179,953	202,113	224,137	244,754	265,977	288,673	312,842	337,403	364,203	392,402	422,000	452,992	483,742	511,941	541,054	570,763	601,015
TOTAL LIABILITIES AND CAPITAL	2 327	3 191	52.990	161.920	255 870	256.02	257.448	259 658	262 663	267 032	270.836	275.970	281,923	297.312	302 431	308 658	315 631	324 163	332 827	342 406	393.076	406 474	410 170	415 337	422 915	432 739	442 883	454 425	467 432	491 205	564 235	578 717	600 726	623,987	647.069



