IV. Case Study on Coal Terminal in Pelaihari

1. Current Condition of Coal Mining Industry in South Kalimantan

1.1. Current Condition of Coal Mining Industry in Kalimantan and Kintap area

A. Socio-economic Outline of South Kalimantan Province

658. South Kalimantan Province has a total land area of 37,530 km^2 and is divided into 11 Regencies and 2 municipalities. A total of 3.4 million people reside in this province as of 2007; Banjarmasin city is the capital of the province with a population of 615,570.

659. In 2007, total GDP of South Kalimantan Province was Rp.25, 922 billion in 2000 constant value. Agriculture, livestock, forestry and fishery sector was the largest sector in this province with a 24.1% contribution, followed by Mining and Quarrying sector at 21.9%. Manufacturing Industries ranked fourth in the output by sector and accounted for 11.6% of the provincial GRDP in 2007, dropping from 14.1% in 2003.

Table 1.1-1 GRDP of South Kalimantan at 2000 Constant Prices (Billion Rupiah)

INDUSTRIAL ORIGIN	2003	2004	2005	2006	2007
1.Agriculture, Livestock, Forestry & Fishery	5,062.53	5,366.94	5,640.96	5,905.87	6,243.73
	24.0%	24.2%	24.2%	24.2%	24.1%
2. Mining & Quarrying	4,551.75	4,656.07	5,032.63	5,408.57	5,681.67
	21.6%	21.0%	21.6%	22.1%	21.9%
3. Manufacturing Industries	2,979.41	3,020.75	2,960.95	2,910.56	2,996.21
	14.1%	13.6%	12.7%	11.9%	11.6%
4. Electricity, Gas & Water Supply	111.98	117.69	121.57	126.23	131.45
	0.5%	0.5%	0.5%	0.5%	0.5%
5. Construction	1,081.78	1,157.01	1,252.62	1,340.60	1,433.16
	5.1%	5.2%	5.4%	5.5%	5.5%
6.Trade, Hotel & Restaurant	3,191.10	3,321.72	3,477.08	3,670.31	3,896.95
	15.1%	15.0%	14.9%	15.0%	15.0%
7. Transport & Communication	1,684.44	1,805.86	1,943.52	2,061.22	2,230.87
	8.0%	8.1%	8.3%	8.4%	8.6%
8. Finance, Real Estate &Business Services	686.50	852.55	865.22	893.25	1,030.45
	3.3%	3.8%	3.7%	3.7%	4.0%
9. Services	1,759.56	1,871.88	1,997.98	2,135.66	2,277.77
	8.3%	8.4%	8.6%	8.7%	8.8%
Gross Regional Domestic Product	21,109.05	22,170.47	23,292.53	24,452.27	25,922.26
	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Statistical Yearbook of Indonesia 2008

660. Coal is the most important export product for South Kalimantan. In 2007, this province exported goods worth of US$2,914 million, and coal accounted for 74.1% of the total export value. Wood product placed second and accounted for 15.5% of the total export value. Combined value of the two commodities accounted for about 90% of the total.

661. Vigorous direct investment has been taking place in South Kalimantan, both for domestic and foreign investment.

662. According to the provincial statistics, a total of Rp.11,389, 222 million of domestic direct investment and US$ 1,221 million of foreign direct investment were realized in 2007. Domestic direct investments were mainly centered at Kotobaru, Tanah Laut and Banjarmasin while foreign direct investments mainly occurred in Tanah Bumbu, Tabalong, Banjarmasin, and Kotobaru.

Table 1.1-2 Direct Investment in South Kalimantan

Regency/Municipality	Domestic	Foreign
	Rp. Million	US$'000
Tanah Laut	1,759,492	35,391
Kotabaru	6,227,268	189,608
Banjar	59,775	2,351
Barito Kuala	570,129	44,223
Tapin	825	-
Hulu Sungai Selatan	16,821	-
Hulu Sungai Tengah	1,359	-
Hulu Sungai Utara	12,401	-
Tabalong	432,483	276,017
Tanah Bumbu	775,575	416,217
Balangan	398,936	-
Banjarmasin	1,037,365	192,253
Banjarbaru	96,793	64,509
Province Total	11,389,222	1,220,570

South Kalimantan Province Statistics 2008

B. Coal Mining Development in South Kalimantan Province

(i) Coal Production in South Kalimantan

663. Indonesia's coal production has increased in recent years, and today Indonesia is one of the world's chief coal exporters. Indonesia has billions short tons of recoverable coal reserves, of which 85 percent is lignite and sub-bituminous. The country's coal reserves mainly are located in Sumatra and Kalimantan. In Kalimantan, East Kalimantan Province and South Kalimantan Province are the main coal producers.

664. In 2004, Indonesia produced 142 million short tons of coal, up about 68% since 2000. Coal consumption has remained relatively flat in Indonesia, with 2004 consumption at 24 million tons. According to EIA statistics, Indonesia was the second largest net exporter of coal in the world in 2004, with 118 million tons of apparent net exports. In 2007 Indonesia produced more than 183 million tons, up more than 28% after 2004.

665. Indonesia adopted the National Coal Policy in January 2004, which seeks to promote the development of the country's coal resources to meet domestic requirements and to increase coal exports in the long-run. And in early 2009, Indonesia Central Government through Mining and Energy Department issued the new law of mining to manage mining exploitation in Indonesia.

666. South Kalimantan is one of the provinces in Indonesia which has huge potencies of mining. Dominant mining materials that are produced in the province are coal and iron ore.

667. As explained earlier, the mining sector accounts for more than 20% of the Gross Regional Domestic Product of South Kalimantan Province in 2007. Coal is a major and favorite mining product that has attracted investors and will increase in the years coming due to the increasing price of coal.

668. Coal potency in South Kalimantan is estimated at about 5.6 billion tons which are mainly spread over the eastern part of the province. Geologically, coal deposits occur in the Barito basin and Asem-Asem sub basin.

(ii) Mining Concession; PKP2B and KP

669. There are two groups among companies which are exploiting coal. Companies of the first group have a license of PKP2B issued by the central government and those of the second group have a license of Mining Concession (KP) issued by Regency governments.

670. In 2007, PKP2B companies produced more than 65 million tons, about 98% of which were exported. On the other hand, KP companies produced 9.3 million tons in the same period, dominant share of which are directed to domestic consumption. Total South Kalimantan coal production in 2007 was about 75 million tons.

671. In 2008, production decreased to 60.5 million tons. About 49 million tons were produced by PKP2B companies and the remaining produced by KP companies. The decline was related to the global economic crisis which greatly affected the United States, European countries and other developed countries. On the other hand, domestic coal consumption produced by KP companies increased to 11.5 million tons.

(iii) Mining Concession Holders in Tanah Laut Regency

672. Tanah Laut Regency is one of regency consisting of Kintap sub-district and Jorong sub-district located in South Kalimantan.

673. As shown in Table 1.1-3, there are 13 companies which have PKP2B licenses for extracting coal, but only two (2) companies out of the 13 PKP2B companies have concession areas in Tanah Laut Regecy, which are PT. Arutmin Indonesia and PT. Jorong Barutama Greston.

Table 1.1-3 PKP2B holders in South Kalimantan, July 2008

No.	Company	Location	Area (ha)
1	PT. Arutmin Indonesia	Kotobaru/Tala	29,969
2	PT. Bahari Cakrawala sebuku	Kotobaru	5,871
3	PT. Kalimantan Energi Lestari	Kotobaru	6,261
4	PT. Borneo Indobara	Tanal Bumbu	24,100
5	PT. Jorong Barutama Greston	Tanah Laut	7,341
6	PT. Cakrawala Mulia	Banjar	1,575
7	PD. Baramata	Banjar	1,577
8	PT. Tanjung Alam Jaya	Banjar	1,232
9	PT. Bangun Banua Persada Kal	Banjar	1,960
10	PT. Antang Gunung Meratus	Banjar/Tapin/HSS	1,767
11	PT. Sumber Kurnia Buana	Tapin	10,920
12	PT. Adaro Indonesia	Balangan/Tabalong	4,336
13	PT. Interx Sacra Raya	Tabalong	747

Source: Potensi Dan Produksi Pertambangan Kalimantan Selatan, Biro Perekonomian, Sekretariat Daerah Provinsi Kalimantan Selatan Tahun 2008

674. Number of mining concession (KP) in South Kalimantan Province is 378. As shown in Table 1.1-4, a total of 12 KP mines are in operation in Tanah Laut Regency in 2008.

Table 1.1-4 Operating KP Holders in Tanah Laut Regency

	Company	District	Area (ha)
1	Bumen Abadi, CV	Jorong	100
2	Surya Sakti Darma Kencana, PT	Kintap	100
3	Alfa Riung Jaya, PT	Jorong	484.6
4	Cahaya Abadi, CV	Batu Ampar	401
5	Amanah Anugerah Adi Mulia, PT	Kintap	200
6	KUD. Tani Jaya Murni		97.4
7	Pribumi Citra Megah utama, PT	DBM, Kintap	100
8	Pribumi Citra Megah utama, PT	Kintap	424.6
9	Pribumi Citra Megah utama, PT	Kintap	281.5
10	Restu Ibu, CV	Kintap	82.83
11	Wahyu Taruna Bakti, CV	Kintap	98.86
12	Central Korporindo Internasional, PT	Kintap	699.7

Source: Potensi Dan Produksi Pertambangan Kalimantan Selatan, Biro Perekonomian, Sekretariat Daerah Provinsi Kalimantan Selatan Tahun 2008

675. Kanpel Kintap covers 2 sub-district areas i.e. Jorong Sub-district and Kintap Sub-district. In both areas, 2 PKP2B companies and several KP companies were producing coal. In 2008, coal production transported through Kanpel Kintap was about 7.17 million tons or about 11.85% of the total coal production in South Kalimantan. The spreading maps of coal companies in both sub-districts are presented in the following 2 figures.

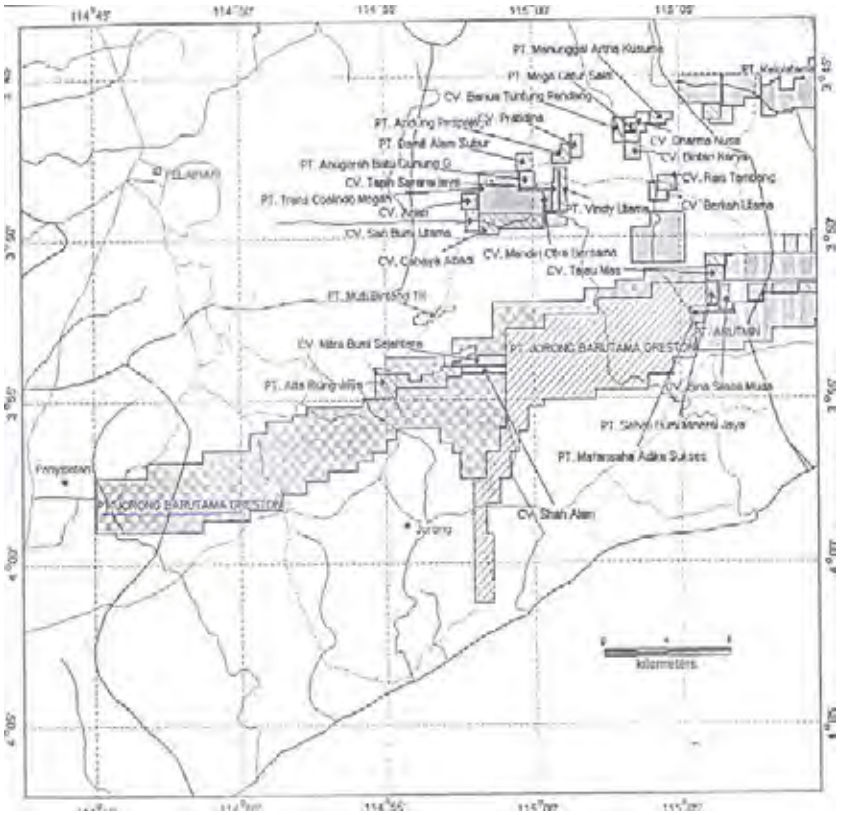


Figure 1.1-1 Spreading Map of Coal Companies in Jorong Sub-district

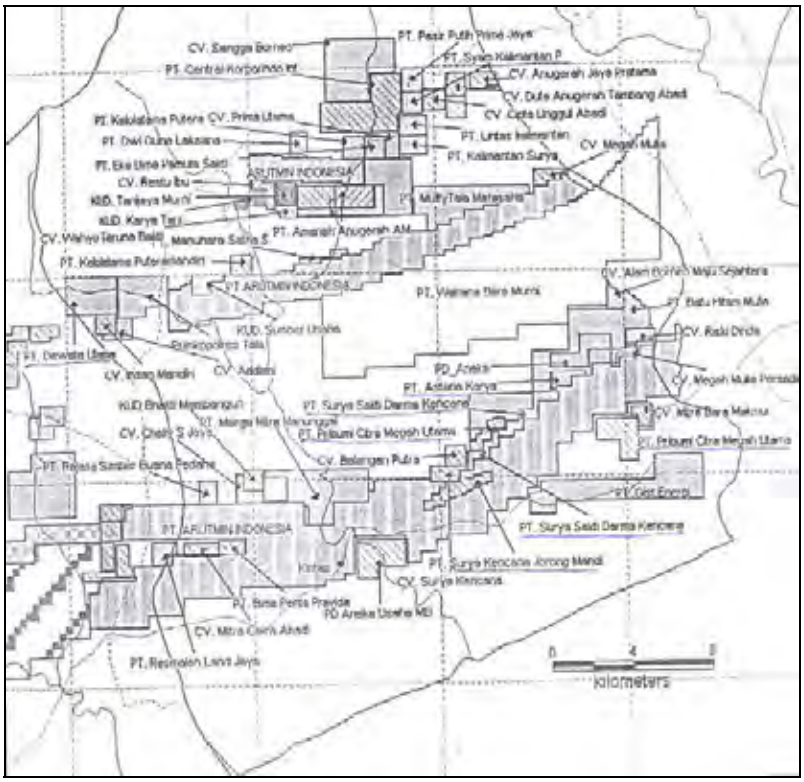


Figure 1.1-2 Spreading Map of Coal Companies in Kintap Sub-district

1.2. Current Situation of Coal Transport in Kalimantan and Kintap Area

A. General Transportation

676. Roads in South Kalimantan can be divided into 3 categories with a total length of 7,721.65 km, i.e. national roads of 864.07 km, provincial roads of 954.23 Km and district roads of 5,903.35 km. District roads are 4.5–5 m in width and have an 8-10 ton load capacity.

677. There are many rivers in South Kalimantan that can be used for transportation around South Kalimantan itself or to and from Central Kalimantan such as: Buntok, Muara Teweh, Palangkaraya and Kapuas.

678. Many rivers in South Kalimantan have been used for transportation of mining commodities including coal. Moreover, banks of rivers such as Barito, Kintap, and Danau Rivers have been used for coal loading terminals, and barges with length of 230 feet to 330 feet are coming and going between loading terminals and Java Sea.

B. Dedicated Haul Road

679. Most coal mines in Indonesia are located close to coastal areas or inland waterways. Mines in South Kalimantan are no exception. Generally companies develop dedicated haul roads from their mines to loading facilities. Truck transport ranges in capacity from 10-ton dump trucks to 16-ton trailers.

680. The use of truck-to-barge transportation gives flexibility and price competitiveness to Indonesian producers over their overseas competitors. Barges range in size from 3,000 dwt to 12,000 dwt capacities and are mainly towed by tugboats from the river/coastal loading port to the transshipment point or directly to the consumer.

C. General Profile of Coal Loading Terminal

681. Based on data from DGST, number of loading terminals which are categorized as special port in South Kalimantan Province is 52. The 45 special ports are servicing for coal loading and 7 ports are servicing for wood and crude palm oil loading.

682. Out of 45 coal loading special ports in South Kalimantan Province, 13 ports are located in Kintap area. In 2008, coal loading volume from Kintap registered 7.17 million tons, a 17.45% increase from 2007.

683. As already mentioned, total South Kalimantan coal production in 2007 was about 75 million tons and its production decreased to 60.5 million tons in 2008. Meanwhile, in Kintap area, during the same period, coal loading volume increased from 6.1 million tons in 2007 to 7.17 million tons in 2008.

684. The tendency of coal loading volume presented above was related to coal production activities which expanded from the Sungai Danau area to western side of Kintap area where transportation of produced coal requires a long distance trip to loading facilities along rivers. On the other side, coal loading terminals along the coast in Kintap area have enough capacity to handle the increasing loading volume of coal.

685. Distance from the mining areas to the Coal Loading Terminals in Kintap ranges between 7 km and 50 km with an average distance of 30 km. As can be seen in Figure 1.1-1 and Figure 1.1-2, many mining areas are located about 10 – 15 km off the coastal area where coal loading terminals exist. Coal loading terminals can be seen in Figure 1.2-1.

686. Volume of coal loaded in the Coal Loading Terminals in Kintap area varies considerably from 20,000 tons a month to 130,000 tons a month or from 3 barges a month to 16 barges a month. In 2008 volume of coal loaded ranges between 250,000 tons and 1.2 million tons.

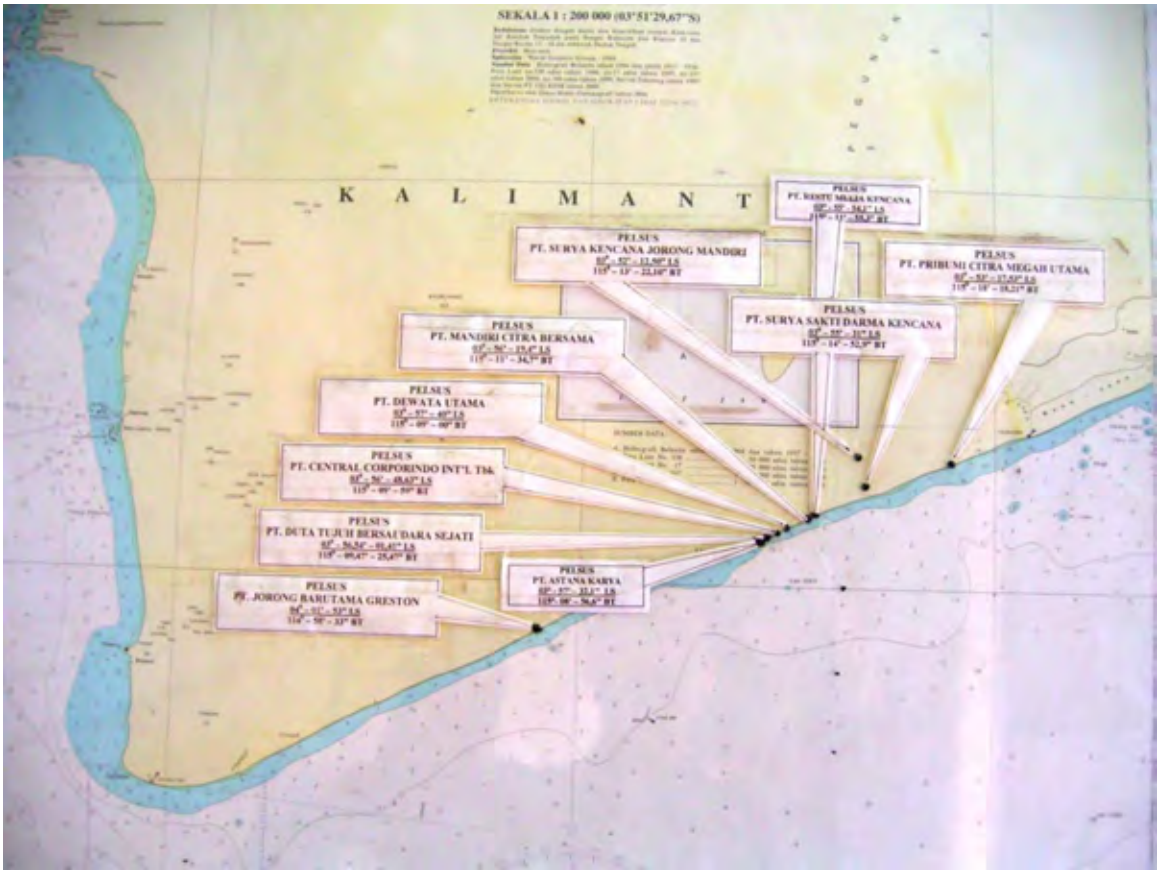


Figure 1.2-1 Spreading Map of Coal Loading Terminals in Kintap Area

D. Existing Facilities in Coal Loading Terminals

687. Facilities in Coal Loading Terminals in Kintap area vary according to scale of traffic volume and company's policy. In general, coal loading terminals are equipped with the following facilities;

(i) Mining roads:

688. Construction and maintenance of roads are conducted by private companies(mining companies in principle). The roads are usually constructed by dense soil with average of roads width of 10m.

(ii) Scale:

689. Usually set at entry and exit points of the terminal for getting net weight of coal which is loaded on the truck. The capacity of scales varies from 30 tons to 50 tons.

(iii) Stockpile area:

690. Coal loading terminals in Kintap area usually have a stockpile area. The areas range from 10 ha to 20 ha and can store coal of about 100,000 tons or more.

(iv) Truck, loader, excavator, hopper and vibrator:

691. All coal loading terminals have trucks and loaders. Many of them are also equipped with excavators, hoppers and vibrators to make the process faster. Not all of the terminals own the

equipment by themselves. Many of them have formed partnerships with other companies (sub contractors) to prepare all operating equipment for their loading activities.

(v) Crasher and conveyor:

692. Coal from mining sites are usually still in crude sizes. Crasher can make the coal more flat. Presently all terminals are equipped with a crasher with various capacities ranging from 200–500 tons/hour. After the crashing process, coals will be loaded to the barge using conveyor (conveyor system) to make the loading process more easily, faster and cheaper. At some of the terminals which are not equipped with a conveyor, the crashed coal is loaded to the barge using a rucking system (conventional system).

(vi) Facility Type (Jetty or not):

693. Coal loading terminals can be classified into two types; i.e. the first category is a river terminal which does not have a jetty-type berthing facility for the loading process. On the other hand, the second category is a coastal terminal which has a jetty as a main component for loading coal. Length of jetties at coal loading terminals in Kintap area varies between 250 – 700 m into the sea.

2. Review of Coal Transport Plan in Kalimantan

2.1. Coal Transport Demand in Kintap area

A. Special Ports Under Pelabuhan Kantor KINTAP jurisdiction

694. Kintap Port Office in Tanah Laut Regency is in charge of supervising and administrating the eleven (11) coal handling special ports in Kintap and Jorong districts. Total Cargo tonnage in both districts reached about 6.8 million tons in 2008, and cargo tonnage at each port is also recorded as follows;

Table 2.1-1 Cargo Tonnage in Kintap Port Office Area

('000 Ton)

Company	Cargo 2008
PT. JORONG BARUTAMA GRESTON	2,185
PT. SURYA SAKTI DARMA KENCANA	30
PT. PRIBUMI CITRA MEGAH UTAMA	1,792
PT. CENTRAL CORPORINDO INTERNASIONAL, Tbk.	913
PT. MANDIRI CITRA BERSAMA	431
PT. Surya Kencana Joroang Mandiri	
PT. DEWATA UTAMA	190
PT. DUTA TUJUH BERSAUDARA SEJATI	1,052
PT. Gapura Jaya	
PT. RESTU MULIA KENCANA	113
PT. ASTANA KARYA	96

(Source: KANTOR PELABUHAN KINTAP)

B. Relationship between Mining License Holders and Port Facility Owners

Table 2.1-2 Relationship between Mining Holders and Port Owners

(Unit:Ton)

	Company	District	Area (ha)	Port	Cargo 2008
PKP2B	Jorong Barutama Greston	Jorng	7,341	●	2,185,194
1	Bumen Abadi, CV	Jorong	100		
2	Surya Sakti Darma Kencana, PT	Kintap	100	●	30,436
3	Alfa Riung Jaya, PT	Jorong	485		
4	Cahaya Abadi, CV	Batu Ampar	401		
5	Amanah Anugerah Adi Mulia, PT	Kintap	200		
6	KUD. Tani Jaya Murni		97		
7	Pribumi Citra Megah utama, PT	DBM, Kintap	100	●	
8	Pribumi Citra Megah utama, PT	Kintap	425	●	1,792,259
9	Pribumi Citra Megah utama, PT	Kintap	282	●	
10	Restu Ibu, CV	Kintap	83		
11	Wahyu Taruna Bakti, CV	Kintap	99		
12	Central Korporindo Internasional, PT	Kintap	700	●	913,338
	Mandiri Citra Bersama, CV		100	●	431,137
	Surya Kencana Jorong Mandiri, PT		203	●	
	PT. Dewata Utama			●	189,552
	PT. Duta Tujuh Bersaudara Sejati			●	1,052,277
	PT. Gapura Jaya			●	
	PT. Restu Mulia Kencana			●	113,049
	PT. Astana Karya			●	95,674

Source: Compiled By JICA Study Team

695. According to information provided by the provincial government of South Kalimantan, out of eleven special ports, seven (7) ports did not have mining concession (KP) in 2008.

C. Users of the Special Ports

696. According to information provided by DGST, temporary permits for public use of special ports have been issued although in principle the special ports can be used for loading and unloading activities of the facility owner's commodity only. Out of nine special ports under the Kintap Port Office jurisdiction, four (4) special ports have been given the temporary public use permit; they are PT. Central Corporindo Internasional, Tbk., PT. Pribumi Citra Megah Utama, PT. Duta Tujuh Bersaudara Sejati, and PT. Restu Mulia Kencana (Governor's permit).

697. Kintap Port Office of DGST has been recording information on vessels, cargo and cargo owners, etc. and the information has been compiled by port. According to the Port Office's information, loading facilities of PT. Jorong Barutama Greston and PT. Surya Sakti Darma Kencana are utilized by cargoes of their own companies. Other loading facilities are jointly utilized by other companies, and some loading facilities accommodate other companies' cargo only because they don't have their own cargo. PT. Arutmin is the majority user for many special ports in this area because the concession area of this company spreads over along the southern coast of the south Kalimantan province.

Table 2.1-3 Main Users of the Special Ports under the Kintap Port Office jurisdiction

Port Company	Cargo 2008	Main Port Users
PT. JORONG BARUTAMA GRESTON	2,185	PT. JORONG BARUTAMA GRESTON Only
PT. SURYA SAKTI DARMA KENCANA	30	SSDK only
PT. PRIBUMI CITRA MEGAH UTAMA	1,792	Majority is PT. Arutmin. PT.Pricmu, PT. Amanah, and PT. SSDK use, too.
PT. CENTRAL CORPORINDO INTERNASIONAL, T	913	Majority is PT.Arutmin. KUD Tani Jaya Murni and CV. Bumen Abadi also use.
PT. MANDIRI CITRA BERSAMA	431	Majority is PT. Amanah Anugerah Adi Mulia. CV.Erlianti, CV. Wahyu Taruna Bakti also us
PT. Surya Kencana Joroang Mandiri		
PT. DEWATA UTAMA	190	CV. Cahaya Abadi, KUD. Tani Jaya Murni, PT. Alkatara,
PT. DUTA TUJUH BERSAUDARA SEJATI	1,052	Majority is PT. Arutmin. CV. Cahaya Abadi and KUD Tani Jaya Murni also use. DTBS a fe
PT. Gapura Jaya		
PT. RESTU MULIA KENCANA	113	PT. SSDK, KUD Tani jaya Murni, CV. Bumen Abadi
PT. ASTANA KARYA	96	PT. AKA and PT. Hutan Rindang Banua. Only one month data

Source: JICA Study Team

698. The actual circumstances of the facility development, operation and utilization of the special ports in relation with mining permit do not comply with the present laws and regulations, and there exist several problems in administrative and socioeconomic matters.

D. Production of Small Mining Companies Without Port Facilities

699. One of the potential users of the Pelaihari public port seems to be private mining companies without loading facilities. As Pelaihari public port is located in Jorong District, which is the southern part of Tanah Laut Regency, private mining companies stationed in Jorong District are more likely candidates than companies stationed in Kintap District. Such companies are CV. Bumen Abadi and PT. Alfa Riung Jaya. Other companies are stationed in Kintap District or further away area. Production of these two companies can be estimated at a total of 100,000 ton ~ 400,000 ton per year.

Table 2.1-4 Coal Production of KP holders without port facilities in Jorong District

('000 Ton)

Company	Permit	Area (ha)	District	Operation Permit	Public Use Permit	2006		2007		2008
						Min.	Max.	Min.	Max.	
PT. JORONG BARUTAMA GRESTON	PKP2B	7,341	Jorong	●		3,300	3,300	2,700	2,700	2,185
CV. Bumen Abadi	KP	100	**Jorong**					70	282	
PT. SURYA SAKTI DARMA KENCANA	KP	100	Kintap	●		748	1,122	168	671	30
PT. Alfa Riung Jaya	KP	485	**Jorong**					12	144	
CV. Cahaya Abadi	KP	100	Batu Ampar					63	252	
PT. Amanah Anugerah Adi Mulia	KP	200	Kintap					55	219	
PT. KUDO TANI JAYA MURNI	KP	97						56	227	208
PT. PRIBUMI CITRA MEGAH UTAMA	KP	806	Kintap	●	●	1,504	1,504	947	1,420	1,792
CV. Restu Ibu	KP	83	Kintap					43	87	
CV. Wahyu Taruna Bakti	KP	99	Kintap					16	98	
PT. CENTRAL CORPORINDO INTERNASIONAL, Tbk.	KP	700	Kintap	●	●	651	651	521	782	913
PT. MANDIRI CITRA BERSAMA	KP			●		444	444	159	238	431
PT. Surya Kencana Joroang Mandiri	KP			●		341	584			
PT. DEWATA UTAMA				●		352	352	139	209	190
PT. DUTA TUJUH BERSAUDARA SEJATI				●	●	958	958	727	1,090	1,052
PT. Gapura Jaya				●						
PT. RESTU MULIA KENCANA				●	●	136	326	120	289	113
PT. ASTANA KARYA				●				2	28	96

Source: JICA Study Team

E. Coal Production by Mining Authorization

('000 Ton)

	2001	2002	2003	2004	2005	2006
South Kalimantan	47	1,580	2,475	4,500	843	6,787

Source: Coal, Indonesia Mineral, Coal, Geothermal and Groundwater Statistics 2007

700. According to the Indonesia Mineral, Coal, Geothermal and Groundwater Statistics 2007, 6,787, 000 tons of coal was produced by Mining Authorization, which are KP holders. As the number of KP holders in Tanah Laut Regency is 16.4% of the total South Kalimantan, it can be estimated that about one million tons of coal was produced by small and medium scale coal miners in Tanah Laut Regency. As introduced earlier, most of the KP holders are stationed in the Kintap District; production in Jorong District is minimal. Therefore, it can be estimated that somewhere in the neighborhood of 200,000 tons of coal are produced by small scale miners, who do not have port facilities, in the Jorong District.

F. Possibility to develop new deposits

701. It is reported that there are coal reserves near Pelaihari. When some of them are exploited and become operational, the Pelaihari public port with a dedicated coal transport road will be the first choice to be utilized as a loading point for coal if the port tariff is competitive with neighboring ports. It cannot be said at this stage how many tons of coal will be loaded through this public port because there are so many uncertainties. However, one million tons might be minimal in consideration of the fact that cargo tonnage of the neighboring PT. Jorong Barutama Greston has been exceeding two (2) million tons a year by their company's cargo only.

G. Conclusion

702. Small mining companies without port facilities in Jorong district ; 100,000 ~ 400,000tons

If new deposits near Pelaihari are developed; +one million tons

2.2. Review of Coal Transport Plan in Kalimantan

703. A number of investors have proposed coal railway projects in Kalimantan. PT. Senong Corporindo planned a railway network linking coal mines in South, Central, and East Kalimantan with a coal terminal at Tanjung Pamukan. Trans Asia Resources studied the possibility of building railway from Muara Inu in Central Kalimantan to Bontang or Samboja in East Kalimantan.

704. Several studies also suggest ways to reduce logistics costs. One of them is to dig a canal in South Kalimantan, connecting to River Barito over a length of about 26 km, enabling mines along River Banjar to produce up to 8 million tons.

705. Itochu, one of the leading firms in Japan, is pursuing the possibility of transporting the coal from the mining sites of Central Kalimantan to Buntok by railway and then extending the railway up to Banjarmasin. Itochu Coal Resources Australia Pty Ltd. has a 23.5% share of PT Marunda Grahaminera, which has a coal mining concession in Murung Raya regency, Central Kalimantan province.

706. PT Marunda Grahaminera produces about 1.5 million tons of coal annually, and has a plan to increase the coal production up to 4 million tons per year within 4-5 years. It is estimated that financial feasibility of the coal transport railway project will be improved in case that the volume of annual coal transport reaches to 20 million tons.

707. In May 2007, China Railway Engineering Corporation (CREC) signed a MOU with the Central Kalimantan administration to build a 500km long rail line in the province. Meanwhile, a $2 billion-cooperation was signed in July 2007 among the East Kalimantan administrations, state-owned railway firm PT Kereta Api, PT Nuansa Cipta Coal Investment, Kenertec Co.Ltd. and Posco Engineering & Construction Co. Ltd to build a railway track for coal transport in East Kalimantan.

708. IEEJ studied in 2002 the possibility of introducing a coal transport railway system in Kalimantan. In this study three scenarios were proposed and examined as to which scenario offers the best solution in economic terms. Three scenarios are summarized as follows;

- Scenario 1: Existing transportation system using trucks and barges
- Scenario 2: Existing truck-and-barge system plus new railway
- Scenario 3: Existing truck-and-barge system plus railway minus offshore transshipment

709. An evaluation of Kalimantan as a whole reveals that earnings increase in the following order.

- Scenario 2 > Scenario 3 > Scenario 1

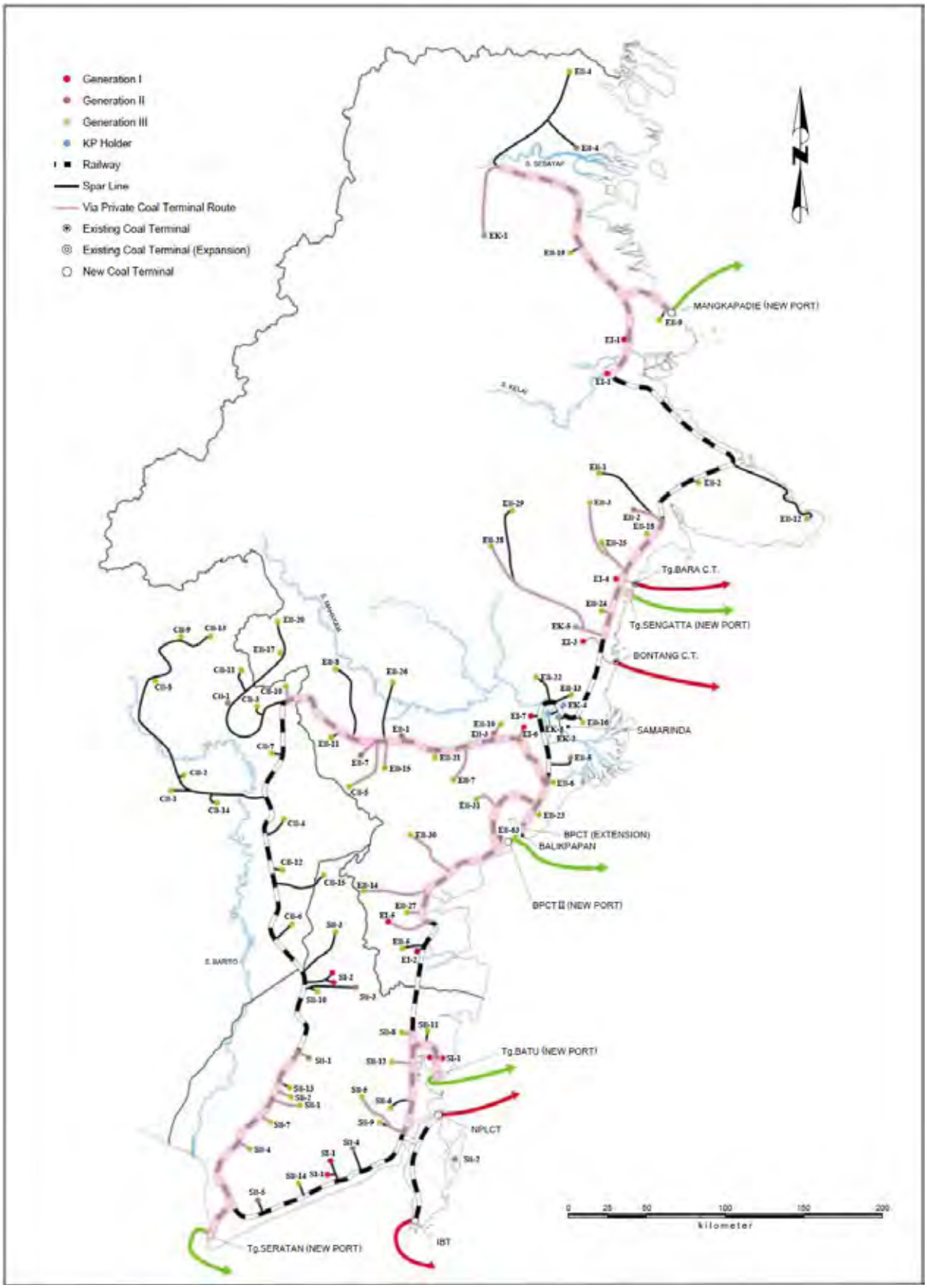


Figure 2.2-1 Proposed Coal Transport by Rail（IEEJ, March 2002）

3. Proposed Development Plan for Case Study

3.1. Facility for Case Study

710. As a result of the three field surveys in the Kintap area and analysis of the present situation of the coal mining industry and coal transport, it was understood that 11 terminals for coal shipping are in operation and most of them are available for public use and thus the necessity of developing a new shipping terminal in the Kintap area was not recognized.

711. On the other hand, DGST has already started the construction works for a public coal shipping terminal under its own finance and supervision in the Pelaihari area, which is in close proximity to Kintap, and plans to complete the terminal by the end of 2012. DGST is also preparing the budget for the civil works portion under the annual recognition of the Diet.

712. After consultation with DGST, the Study Team decided that this facility under construction by DGST would be included as a case study.

713. According to DGST, the purpose of developing the new terminal is to assist small scale mining companies not having their own terminals. DGST also expects the new terminal for public use to eliminate illegal terminal operation and complement the function of Banjarmasin port.

3.2. Review of the Original Plan of Coal Terminal by DGST

714. The coal terminal planned and under construction by DGST (herinaftr referred to as “Pelaihari Terminal”) is located on the south coast of Jorong district, South Kalimantan. The original plan of Pelaihari Terminal presented by DGST is shown in Figure 3.2-1 ～ Figure 3.2-4.

715. DGST modified some part of their original plan. A berthing area called a small craft berth is added at the middle of the trestle, and then the tip of the trestle where barges are accommodated for coal shipping is called a second berth. Dimensions of the berthing facility, however, have not changed. Main dimensions of the terminal facilities presented by DGST are shown in Table 3.2-1.

716. The jetty at the tip of the trestle (Second Berth) is planned to accommodate an average of 8,000DWT barge or bulk carrier ships having a draft of 4m or less. The trestle is extended up to the required depth of the design ships to berth. No dredging is planned to accommodate the design ship.

717. The new coal terminal being constructed by DGST should be attractive for the coal companies and competitive among the neighboring coal terminals. The original plan including a modification Pelaihari Terminal is reviewed in terms of the capability of coal handling; specifically stock volume and loading capacity is examined by the study team referring to those of neighboring coal terminals.

718. The features of the neighboring coal terminals and the original plan of Pelaihari Terminal are summarized in Table 3.2-2.

719. Firstly, the volume of the stock yard should be pointed out. The original plan has a space of 200m×200m for the stock yard which translate into a stocking capacity of only around 70,000 tons. Comparing with stock volume of other terminals, it is easily understood that the capacity of the stock yard of the original plan is much smaller than that of the neighboring coal terminals operated by local coal companies.

720. Secondly, mention should also be made of the ship loading performance. According to the original plan, there is no conveyor system from the stock yard to the barge. Coal is planned to be dumped on the barge directly by trucks. A 20-ton dump truck, however, only has a capacity of around

600 tons per hour because of the narrow width of the trestle and difficulty of crossing on the trestle against a 20-ton dump truck. The capacity of 600 tons per hour is much smaller than that of the neighboring coal terminal.

721. Thirdly, it is necessary to point out that direct dumping by trucks on berth is not feasible. The berth width is not sufficient to provide the slope for the dumping motion of trucks to the hold of the barge. Other terminals neighborhoods have introduced the conveyor system.

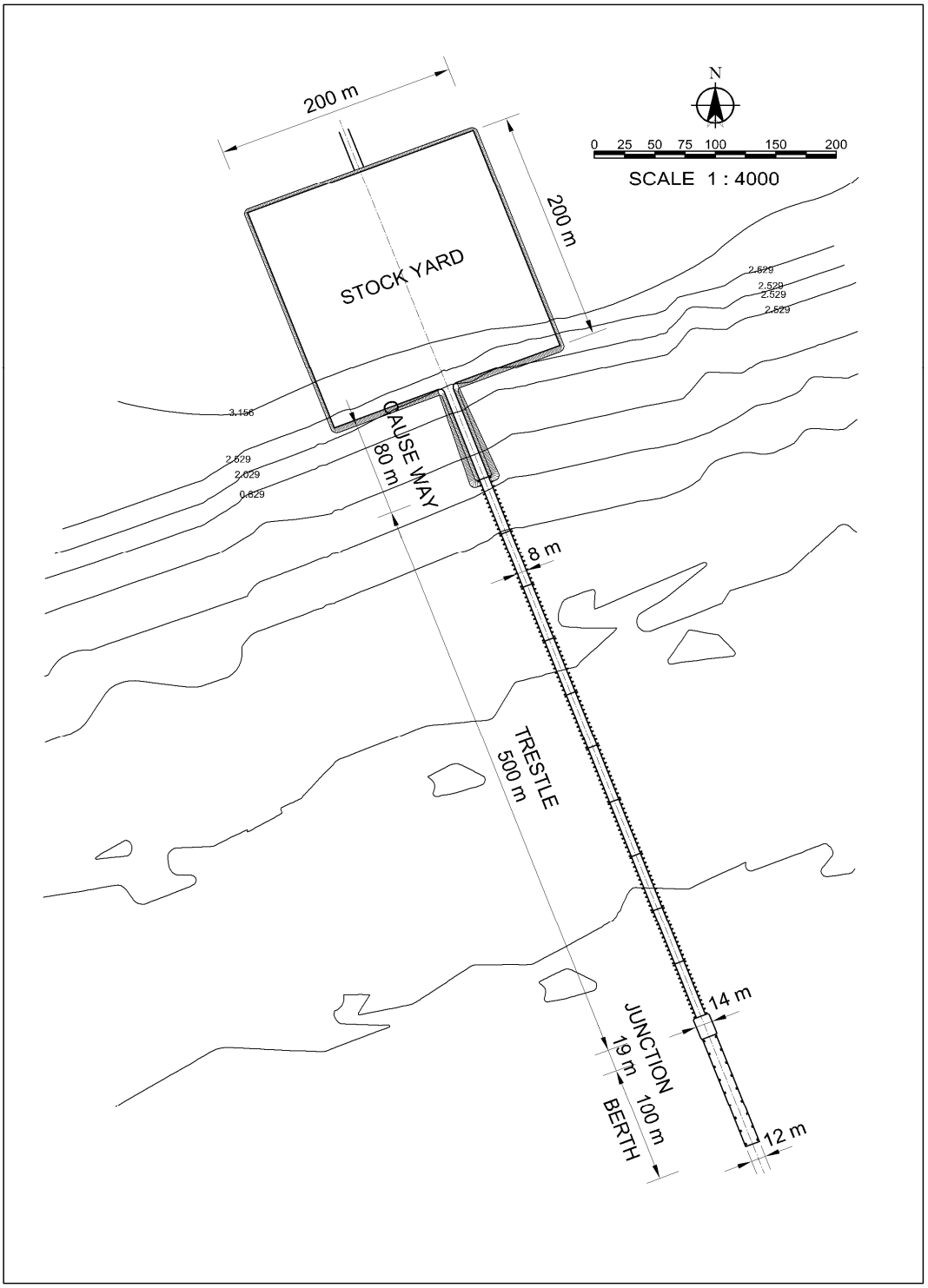
722. Consequently, to attract more small scale coal companies and operate the public coal terminal with competitiveness, the capacity of the stock yard should be at least 100,000 tons and the ship loading performance of 1,000 tons per hour is necessary. Furthermore, carriage of coal from yard to berth should be done by a conveyor system and a ship loader with conveyor should be employed for loading coal to the barge.

723. Additionally, the necessary facilities such as drainages in the stock yard, electrical house, pump house, administrative building and so on shall be taken into consideration.

*Benchmark Information: S 04° 00’ 43.2”, E 115° 00’33.3”

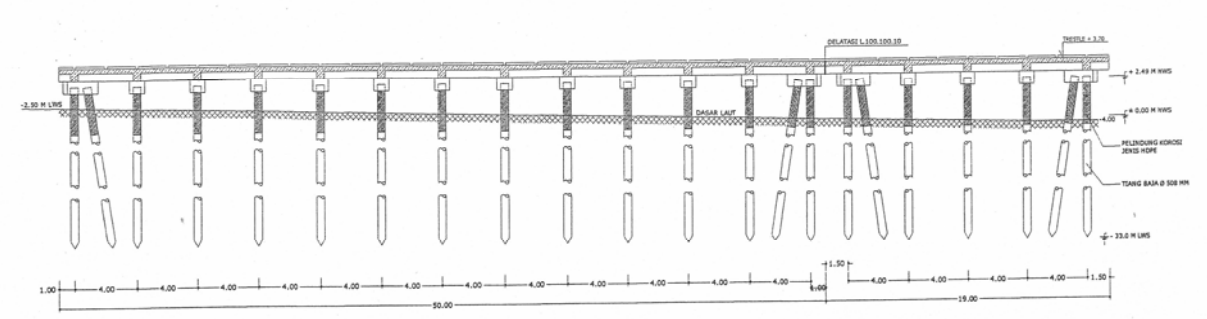
Table 3.2-1 Main Dimensions of the Terminal Facilities

Facilities	Dimensions	Design
Stock yard	200m x 200m	Reclamation by sand, No drainage system is planned yet.
Causeway from the yard to trestle	80 m (L) x 8 m (w)	Reclamation by sand and concrete slope protection. At present no pavement is constructed yet. Reinforced concrete pavement is preferable.
Trestle from causeway to jetty	500m (L)x 8 m (w) 19m (L)x12m(W)	Every 4 m concrete pier is constructed and supported by Steel Pipe Piles (dia 600 mm), PC girder between piers are planned for supporting concrete slab for running coal transport trucks. Extended parts of the pier are planned to be used for installation of belt conveyor foundation for coal transport
Small Craft Berth at the middle of the trestle	50 m (L) x 23 m (W) x 3 m (D)	Concrete slab is supported by Steel Pipe piles (dia=609mm, driven to -33.5m) with rubber fenders (V-400 L=2000), Water depth -3.0m, design ship size is small barge and tug boats or ship with draft less than -3.0m. This jetty will serve for domestic coal importing and store temporally stock at the on land yard.
Second Berth at the tip of the trestle	100 m(L) x 12 m(W) x 5m (D)	Concrete slab is supported by Steel Pipe piles (dia=609mm, driven to -33.5m) with rubber fenders (V-400 L=2000), Water depth -4.5m to 5.0m, design ship size up to 8,000 DWT or ship with draft -4 m, Both sides berthing will be possible in future.

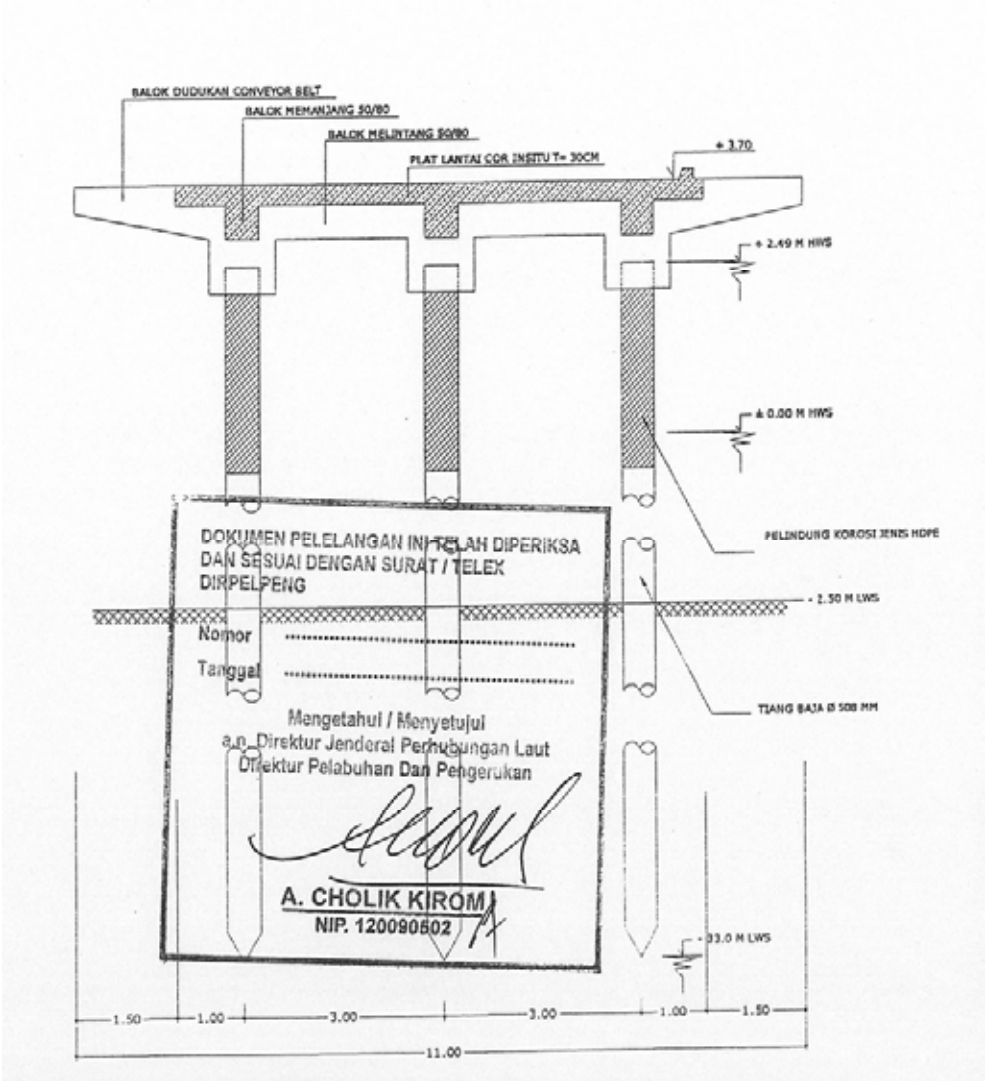


(Original Plan by DGST)

Figure 3.2-1 General Layout Plan of Pelaihari Coal Terminal



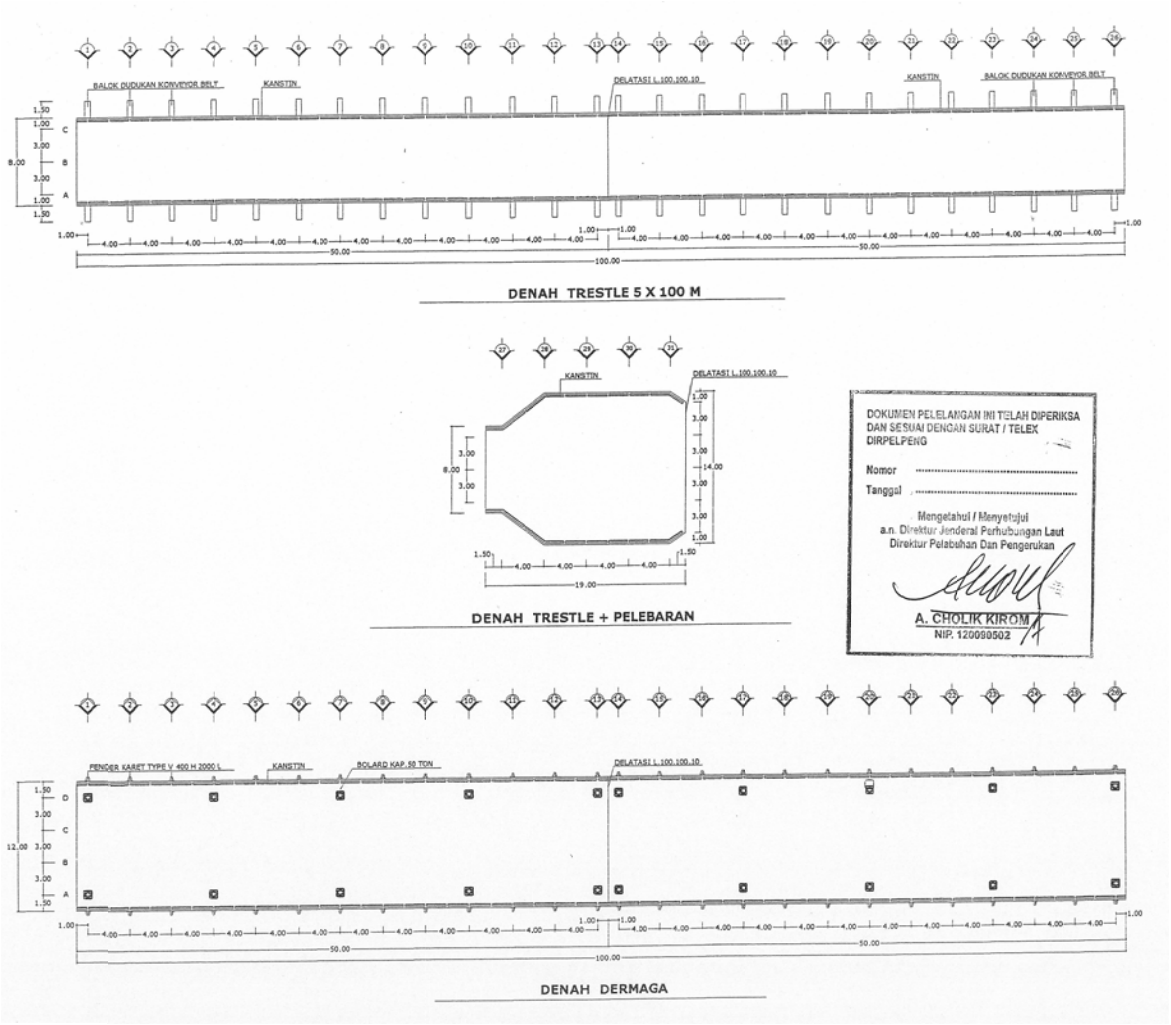
Longitudinal Section of Trestle



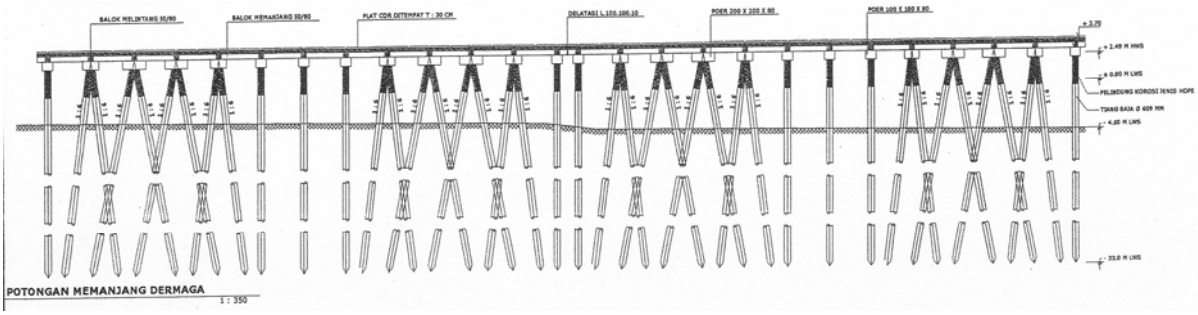
Cross Section of Trestle

(Source: Directorate of Port and Dredging, DGST, Ministry of Transport)

Figure 3.2-2 Sections of Trestle; Pelaihari Coal Terminal



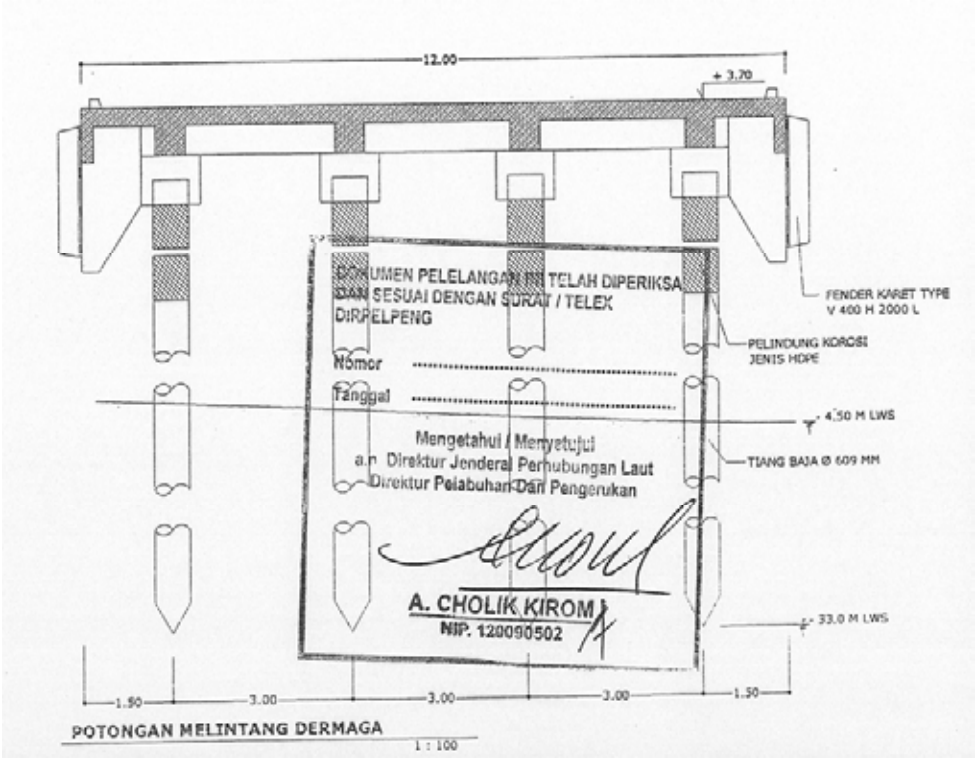
Plan of Trestle, Widening Joint (Pelebaran), and Berth



Longitudinal Section of Berth

(Source: Directorate of Port and Dredging, DGST, Ministry of Transport)

Figure 3.2-3 Plans and Sections of Trestle, Berth; Pelaihari Coal Terminal



(Source: Directorate of Port and Dredging, DGST, Ministry of Transport)

Figure 3.2-4 Cross Section of Berth; Pelaihari Coal Terminal

Table 3.2-2 Neighboring Coal Terminals and Pelaihari Terminal (Original plan)

	PT Berutoma Greston	PT Pribumi Citra	Pelaihari terminal (Original plan)
Transportation from Coal Mine	About 25km by 20-ton trucks	10~15km by 20-ton trucks	Trucks
Stock Volume	270,000 tons	100,000 tons	About 70,000 tons
Carriage to Berth	Conveyor 1,300t/h	Conveyor 1,000t/h	Truck
Length of Trestle	Unclear	640 m	700 m
Design Depth at Berth	- 5 m	- 6 m	- 5 m
Applicable ship of berth	8,000-ton Barge	6,000~11,000-ton Barge	3,000~12,000-ton Barge
Loading Equipment	1,300 tons/hour Ship loader, fixed type	1,000 tons/hour ship loader, fixed type	600 tons/hour by Direct dumping by trucks (actually impossible)
Shipping Volume	182,500 tons/month (14,000 tons/day)	150,000 tons/month (11,540 tons/day)	78,000 tons/month (6,000 tons/day)
Personnel of the Terminal and Mines	300 including mining workers	Management: 3 Staff : 5 Terminal staff: 4 Worker (mining):130	Unclear

3.3. Proposed Development Plan for Case Study

724. Based on the study and review on the original plan of Pelaihari Terminal, an Improvement plan for the case study is proposed by the study team as follows.

A. Stock yard

(i) Stock volume of coal terminal

725. The original plan of the stock yard does not indicate any blending arrangement at the yard by different quality of coal from different mines. According to the local coal exporting agents, the blending is required to produce the specified quality of coal to meet the requirement of the users.

726. The original arrangement of loading facilities is understood to carry out blending of different quality of coal in the barge by direct dumping from trucks to barge.

727. Stock yard should have the function of adjusting and absorbing differences between receiving volume within the yard and shipping volume from the berth. And the stock yard should be able to stockpile a one month's supply or more of coal. In addition, the stock yard ought to supply coal uninterruptedly to the barge at berth.

728. Capacity of Pelaihari Terminal is 100,000 tons of coal as mentioned above.

729. Regarding stock volume of the yard, the following is assumed.

i)	Holidays in month	4 days (Operation 26days per month)
ii)	Ships call at berth in month	13 ships (One ship per 2 days)
iii)	Average size of ship	8,000-ton barge
iv)	Shipping volume per month	13 ships x 8,000 ton; 100,000 tons
v)	Stock volume	100,000 tons (Same as shipping volume per month)
vi)	Height of stock pile	10 m
vii)	Width of pile base	50 m
viii)	Repose angle of stock pile	35 degree
ix)	Specific gravity of brown coal	0.64 ~ 0.72 (Average 0.68 in bulk)

730. From the above, the stock pile volume is worked out. However, the yard area shown in the original plan is considered rather narrow for coal handling for receiving and shipping smoothly without interference among operating vehicles such as dump trucks and shovel loaders.

731. Therefore, sufficient clearance between stock piles should be secured to enable easy crossing of the vehicles. Consequently, area of the stock yard shall be 200m x 280m, that is 1.4 times that of the original plan.

(ii) Drainage

732. Stock yard has to be equipped with drainage due to storm rainfall or sprinkle water.

733. For that reason, yard surface has a slant of about 2‰ and trenches in the surroundings of the yard, and drain water is discharged to the outside of the yard through the pits and settle tank. Settle tank volume is 100 ㎥ for 30mm/h rainfall.

(iii) Yard lighting

734. Lighting apparatus (4-flood lights) shall be installed at the corner of the yard and 50-fluorescent lights shall be installed every 15m along the patrol road.

B. Conveyor

735. Conveyor capacity shall be planned to carry coal continuously to the ship loader at a rate of 1,000tons per hour.

736. Therefore, conveyor specification is planned as follows:

Conveyor width	:	1,200 mm
Trough degree	:	35°
Speed	:	180 m/min.

737. Lighting apparatus of the conveyor by 50-fluorescent lights shall be installed every 15m on the conveyor frame.

C. Ship Loader

738. A ship loader equipped with 1,000 ton per hour capacity shall be installed at the berth for coal loading to barges. Main specifications are as follows:

Loading capacity	:	1,000 tons/hour
Clearance of Chute	:	9.0m from the surface of the berth
Position of Chute	:	16.5m from edge of berth

739. Specifications of the ship loader are the same as those of the conveyor.

740. Lighting apparatus of the ship loader by 4-floodlight and 14-fluorescent lights shall be installed on the structure.

D. Other Facilities

(i) Administrative building

741. Personnel in this terminal will be composed of 15 persons while operators for conveyor and shovel loaders will number 20 persons, therefore, a 2-floor x 200 m^2 building is necessary based on space requirements of 10 m^2/person for office and rest rooms.

(ii) Repair shop

742. Three Shovel loaders can be housed in the repair shop for periodical maintenance and repairing, so shop size is width 15 m x depth 10 m x height 7 m.

(iii) Electrical House

743. Dimensions of the electrical house shall be 90 m^2 floor space with ceiling height of 3m. A high tension board , control boards and switch boards will be installed in the house

(iv) Pump room

744. A coal stock yard shall be equipped with sprinkling water over stockpiles for the following reasons;

- Re-supply of lost water vaporized in the stockpile
- Control of temperature rise of the inner coal stockpile to prevent spontaneous combustion
- Prevention of dust dispersion

745. Sprinkling water is expected to sprinkle 1 hour, 3 times per day, and supply water system shall be equipped with a 3-line system fitted into 3 rows of stockpile, and water shall be sprinkled to the stockpile one row by one row.

746. Requirement for sprinkling water is as follows.

Quantity:	40 tons per hour x 3 rows x 3 times per day = 360 tons per day
Water Pressure:	5 ~ 8 kg/cm^2

(v) Weighing device

747. For management of this terminal, weighing device shall be installed at the entrance of the yard.

E. Access Road

748. Access road to connect Pelaihari Terminal with the existing national road is necessary. A 2-way x 2-lane access road of approximately 2 km length is planned. Surface pavement against heavy axle load is also considered.

749. Main facilities of Pelaihari coal terminal are summarized in the following table.

Table 3.3-1 Proposed Development Plan of Pelaihari Terminal
(Amendment to the Original Plan)

		Specifications	Remarks
1	Coal yard	200 m x 280 m	Expansion to the Original Plan
2	Trestle	Length 700 m	
3	Berth	12 m x 100 m	
4	Conveyor	Width: 1,200 mm Length: 700 m Speed: 180 m/min.	Not-inflammable
5	Ship Loader	Productivity: 1,000 tons/hour	
6	Administrative Building	2-storey x 200 m^2	
7	Repair Shop	W: 15 m x D: 10 m x H: 7 m	
8	Power Station	90 m^2 x H: 3 m	
9	Weighing Device	30-ton weighing (50-ton)	Load: 25 tons Truck: 25 50ns
10	Lightings	Around berth Fluorescent: 14 Flood light: 4 Along Trestle Fluorescent: 50 Surrounding Stock Yard Fluorescent: 50 Flood light: 4	
11	Pump Room and Sprinkler	40 tons/hour water for sprinkler	
12	Yard Drainage		Proposed in the Original Plan
13	Access Road	2 km x 4-lane road, RoW = 25 m	

4. Preliminary Design and Cost Estimate

4.1. Natural Conditions of the Vicinity of Pelaihari Terminal

750. DGST carried out the natural conditions surveys and design of coal loading facilities in 2008. Hydrographic survey was carried out across a 5 km x 5 km in 2008 at the selected site. And Subsoil investigations with 3 holes along the trestle and jetty construction area, and Standard Penetration Tests were carried out.

751. Based on these survey data, natural conditions of the vicinity of Pelaihari Terminal are described as follows.

A. Geographic Condition

752. The geographic conditions are summarized as follows:

(i) Access Road area;

753. The soil conditions from the national road to Pelaihari Terminal area are observed to be swampy and lower land elevation. After the rain, the surface of the area was flooded and submerged, making it impossible for vehicles to pass. The access road for the construction works was constructed with filling sand and compacting, however, the surface soil is still muddy.

754. Improvement of the existing road for heavy load trucks is required. And a drainage system along the road and stock yard area shall be properly arranged and organized.

(ii) Loading Facilities development area

755. The coast is a gentle slope of the sea bed from the shore to the depth of -5.0m at distance of 5km from the shore. The surface of the coast is observed to be fine sand. And there are swamp ponds behind the coast. The soil condition of Pelaihari Terminal area is considered to be soft clay layer.

B. Tide, Current and Wave Conditions

756. The natural conditions of the vicinity of the site are summarized as follows:

(i) Tide

High Water Level (HWL)	+2.49 m
Mean Sea Level (MSL)	+1.25m
Design Low Tide Level (DLT)	0.0

(ii) Current

757. According to one of coal export traders located at the coast of Kintap, the coastal current is comparatively fast, and transports sea bed sand. It was reported that the company located at Jorong site conducted regular maintenance dredging around the jetty area.

758. Erosion on the west side of the causeway constructed as part of the DGST loading facilities is observed, while on the east side of the causeway, sedimentation of sand is observed.

(iii) Wave Conditions

759. During August to December, the waves of more than 2 m in height enter from the south east direction to the port area about 20 days per month. High waves do not enter continuously. .

760. During January to July, the waves of less than 2m in height enter from the south west direction. During this season the coal loading operation is not disturbed.

(iv) Soil conditions

761. According to the soil investigation by DGST, the soil condition of the construction site was as follows and the following parameters are used for the preliminary design for the new port facilities.

Along the Trestle and Jetty Construction Area

Depth	Soil Characteristic
-14.0 m	Clay N= 0 – 2 Very soft
-20.0 m	Silty Clay, N = 14 - 19 Soft
-24.0m	Clay N=19-24 Soft rather elastic soil
-30.0 m	Tough Elastic N = 25-30
-34 m to 38m	Dense to very dense sand N = more than 30

4.2. Design Conditions of Berthing Structure

A. Design Conditions

(i) Design ship size for coal transport

- 12,000 DWT (Length 320 ft, Draft 4m)

(ii) Crown Height

762. The crown height of the jetty is set at +3.70 from DLT to accommodate 8,000 DWT barge with draft of 4 m and length of 270 ft.

(iii) Surcharge on the Wharf;

763. On the berth, the following surcharge is considered as a dead load

- Normal condition: 1.0 tf/m²

- Seismic Condition: 0.5 tf/m². (50% of the normal condition)

(iv) Seismic Coefficient

764. The seismic coefficient for the proposed port facility is computed by applying the following factors and formula of the Indonesian Standard "Pedoman Perencanaan Ketahanan Gempa untuk Rumah dan Gedung":

South Kalimantan 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
Importance Factor; I = 1.5
K_h = K x C x I = 1.0 x 0.05 x 1.5 = 0.075
K_v = not considered = 0

(v) Wheel Load as live loads on the Wharf

Live Loads

765. In the design of the wharf, only coal transport trucks and standard trucks with full loaded coal (25 tons of loaded coal) are considered.

766. The following wheel loads are considered:

- Coal Transport Truck : 32.0 tf/wheel
- Tractor Trailer : 5.8 tf/wheel

(vi) Tractive Force and Berthing Force

Mooring

767. Tractive force acting on mooring bitts and bollards is set at 70 tf and 50 tf per unit respectively for the vessels from 5,000 to 10,000 DWT which are spaced at 20 - 25 m.

Fender System

768. In design of the fender system to absorb the shock of ship berthing energy, berthing speed of vessels is set at 10 cm/sec considering barge size of 8,000 to 12,000 DWT with tug boat assistance for berthing. The fender is installed every 8 m along both sides of the berth.

4.3. Preliminary Design of Coal Terminal

A. Facility Design of Improvement Plan

769. An improvement plan of Pelaihari Terminal development is proposed in the previous section. The preliminary design for the amendment facilities of the coal terminal is presented in this section.

770. Regarding the water front facilities, the trestle and wharf structure designed by DGST is used for the case study of coal terminal. The stability and safety of berthing facilities and trestle are checked under the above design criteria as mentioned in 4.1, 4.2 of this Chapter. The planned facilities are designed as follows.

- The berth length is planned to be 100 m long and have a water depth of -4 to -5m, which is capable of accommodating a ship of 12,000 DWT with a length of 320 ft (less than 100m).
- The berth is planned to have a water depth of -4 to -5m. The barge with empty load (draft will be less than1.0m) will approach the berth with the assistance of tug boat. The loading operation will be controlled by measuring the draft and will stop when the draft reaches 4m. Spacing of the fenders and bitts are planned according to the design conditions of the Technical Standards and commentaries for Port and Harbor Facilities in Japan.
- The fender is planned to use 400(H) x 2000(L) V type. The estimated energy absorption and corresponding horizontal forces by the planned fender will be 6.4 tm and 48 tons respectively at deflection of 45%, while the energy by berthing of designed ship will be around 5 tm. The planned fenders will be able to absorb such energy, and are the logical selection for fender facilities. The horizontal forces acting to the berth will be supported by one block as a whole of the berth structure (50m x 12m supported by 48 Steel Pipe Piles (609 mm dia.)).
- The foundation piles are driven up to -33.0 m on the dense soil layer (N value is more than 30), which is considered a reasonable depth to obtain the required bearing force at the tip of piles. The pile foundation will able to obtain the required bearing force to support all vertical loads and stress by horizontal forces to the facilities.

771. The port facilities are found securely designed by DGST to accommodate max. 12,000 DWT barge. The designed port facilities by DGST are used for the case study.

772. However, in order for the facilities planned by DGST to be competitive with neighboring terminals , some expansion plans as described in 3.3. Besides the civil works of the coal terminal facilities as designed by DGST are proposed as the case study.

773. Coal stock yard expansion and a layout plan of the terminal facilities are presented in Figure 4.3-1. And the preliminary designs of the coal conveyor and ship loader are presented in Figure 4.3-2.

774. As for the future expansion of the coal terminal, the productivity of the ship loader can be secured with the additional installation of the belt conveyor to the opposite side of the trestle and the berthing of the barges on both sides of the berth. In that case, expansion of the coal stock yard is necessary as well.

B. Preliminary Cost Estimate of Coal Terminal

775. Project cost for Pelaihari Terminal Development (improvement plan) is estimated and presented in Table 4.3-1.

776. The construction cost of the civil works is compiled based on the budget figures of the Original Plan by DGST and expansion plan of the stock yard is taken into consideration.

777. The current market prices for the coal shipping equipment and yard facilities are studied through visiting and interviewing the coal mining companies in South Kalimantan and the trading companies in the Jakarta region. Project cost estimate for the coal terminal development is verified by the information collected through the Field Study.

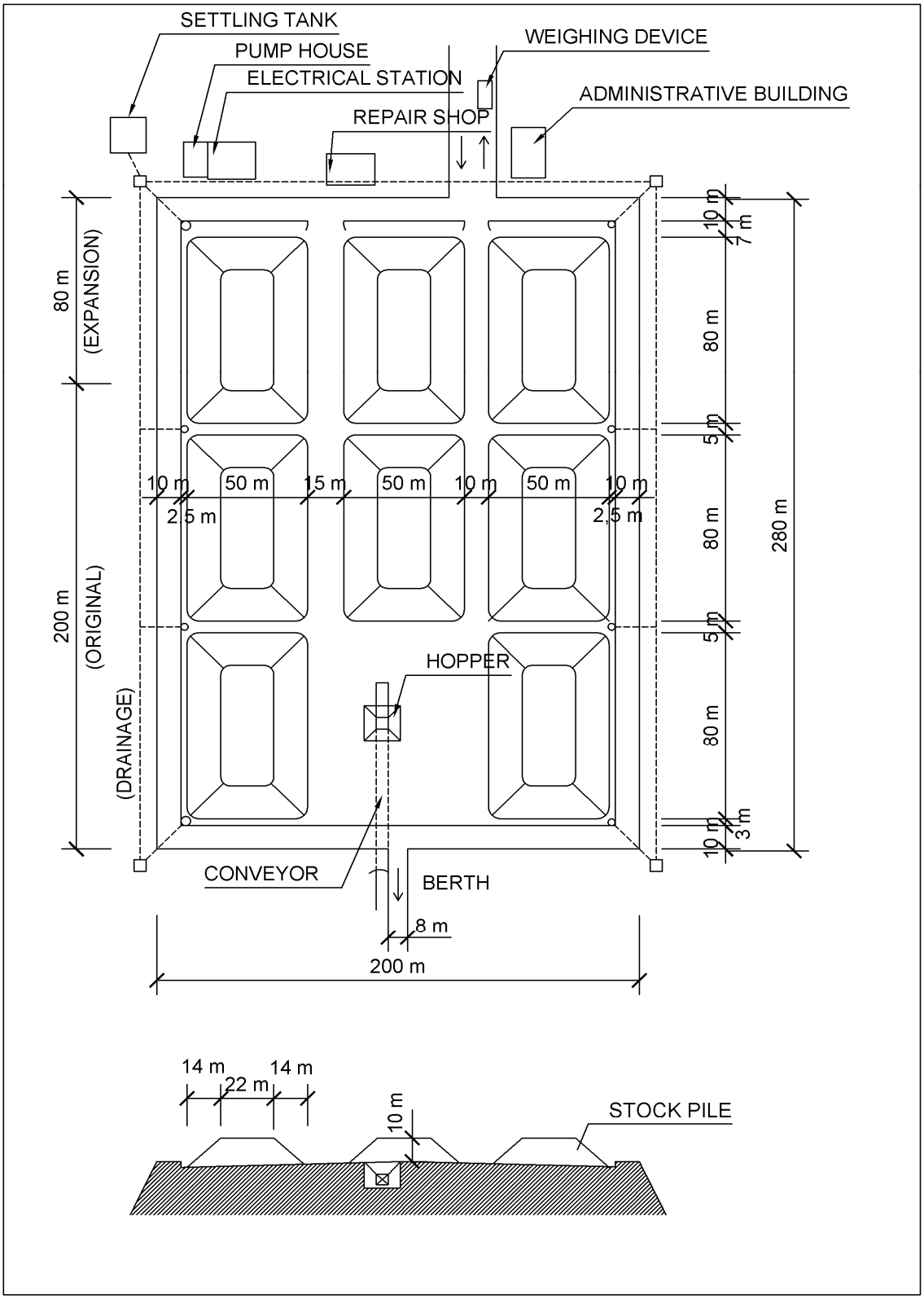


Figure 4.3-1 Coal Stock Yard Expansion and Terminal Facilities

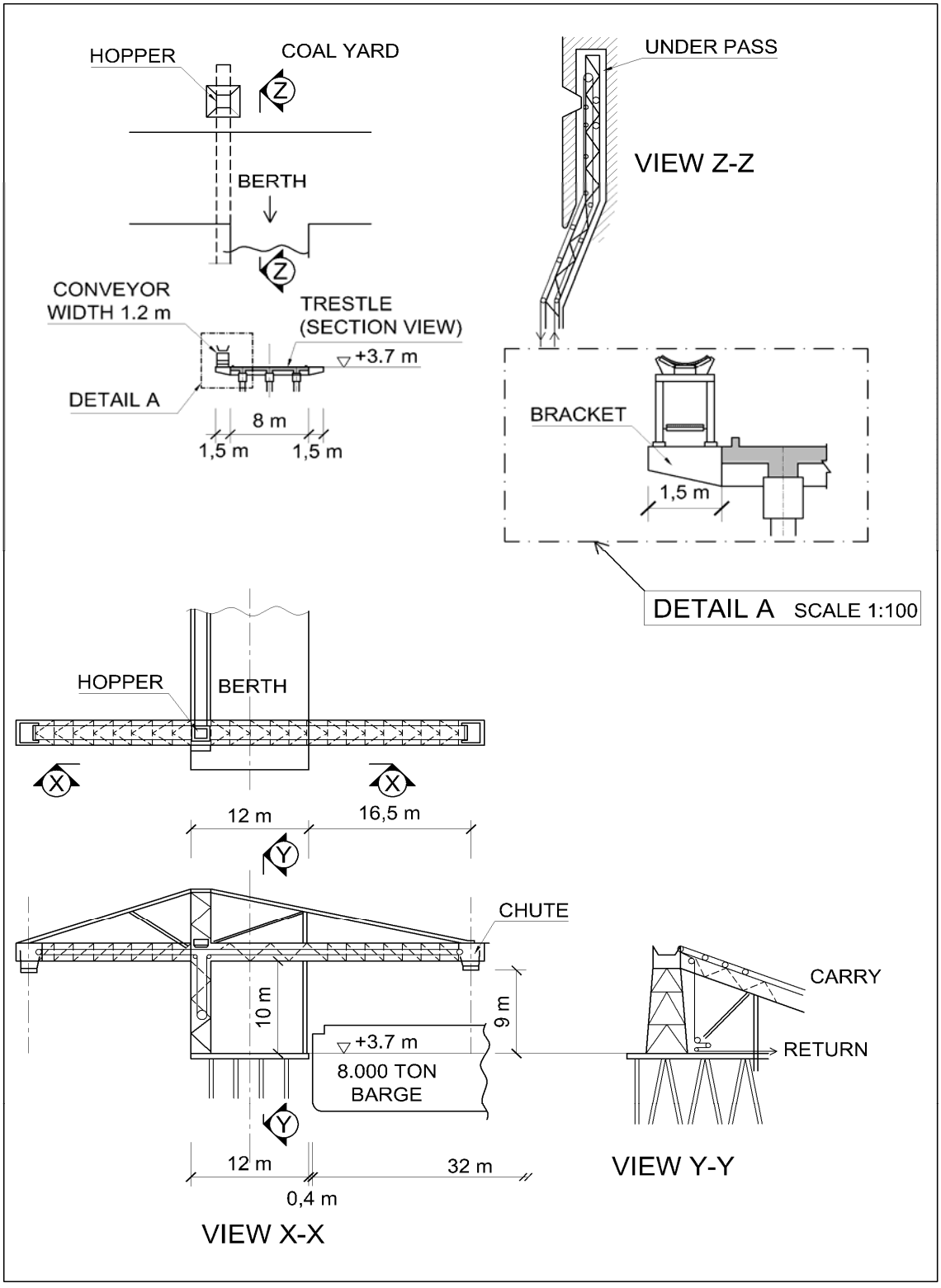


Figure 4.3-2 Coal Conveyor and Ship Loader for Pelaihari Terminal

Table 4.3-1 Cost Estimate of Pelaihari Coal Terminal Development

Description	Unit	Quantity	Amount (1,000 Rupiah)	Remarks
1. Civil Works				
1.1 General Cost (GC)	l.s.	1	2,801,586	Mobilization, temporary works, etc.
1.2 Land Reclamation	m^2	56,000	45,000,000	Coal Stock Yard, EL+3.7 m, 200 m x 280 m
1.3 Causeway	m	80	3,029,270	W: 8 m x L: 80 m, EL+3.70 m
1.4 Abutment			143,353	
1.5. Trestle and Jjoint to Berth	m^2	5,400	76,007,583	9 x W: 8 m x L: 50 m, RC deck supported by Steel Pipe Pile structure (D 508 mm, t=12 mm)
1.6 Small Craft Berth			27,403,726	
Structure	m^2	750	26,346,363	W: 15 m x L: 50 m, RC deck on Steel Pipe Piles
Rubber Fender	Nos	26	818,713	V type, H: 400 mm x L: 2,000 mm, 4 m interval
Bollard	Nos	10	154,695	35-ton, 12 m interval
Lighting	l.s.	1	83,954	
1.7 Second Berth			30,594,168	
Structure	m^2	2,000	28,268,000	2 x W: 12 m x L: 50 m, RC deck on Steel Pipe Piles
Rubber Fender	Nos	52	1,637,427	V type, H: 400 mm x L: 2,000 mm, 4 m interval
Bollard	Nos	20	220,994	50-ton, 12 m interval
Lighting	l.s.	1	467,747	
1.8 Drainage and Settle Tanks	l.s.	1	18,497,968	10 % of Construction cost
1.9. Access Road	m	2,000	16,000,000	8 million Rp./m
Sub-total of Civil Works (TC)			219,477,653	Total of 1.1 ~ 1.9
1.10 Supervision			6,584,330	3 % of TC
1.11 Total of Civil Works			**226,061,982**	**93%**
2. Super-structures of Terminal				
2.1 Coal Coveyer	l.s.	1	5,500,000	500,000 USD
2.2 Ship Loader	l.s.	1	3,300,000	300,000 USD
2.3 Administrative Building	m^2	400	2,200,000	500 USD/m^2
2.4 Repair Shop	m^2	150	577,500	350 USD/m^2
2.5 Weighing Device	l.s.	1	1,650,000	150,000 USD
2.6 Utility Facilities	l.s.	1	3,968,250	Power supply, water supply, pump, lighting, etc.
2.7 Total of Super-structures (TS)			**17,195,750**	**7%**
3. Total Project Cost			**243,257,732**	**Total of 1. + 2.**
VAT (10 %)			24,325,773	

5. Investment and Implementation Plan

5.1. Investment Plan

A. Scope of Construction Works by DGST

778. Construction of Pelaihari Terminal has already been commenced with the budget and under supervision by DGST, Ministry of Transportation.

779. DGST concluded a contract with an Indonesian contractor to carry out the construction works of the access road between the existing national road and Pelaihari Terminal by leveling the existing ground, filling with sand and compacting without pavement.

780. The contractor has also started to construct the causeway of 80m in length and 8m in width by filling sand.

781. The scope of works covered by the budget of DGST is the facilities presented in Figure 4.3.1, and the year 2012 is targeted as the completion of the construction works according to the project officer of DGST.

782. The original construction plan by DGST, however, covers only the construction of coal yard, coal shipping berths and access road, while the installation of necessary facilities of a coal terminal, such as coal loading equipment, power supply water supply and operation buildings is not taken into consideration.

B. Investment for Terminal Operation

783. In order to make Pelaihari Terminal function as a public coal shipping terminal, it is considered necessary not only to develop the above mentioned operating facilities but also to seek the participation of the eligible private operator. It is expected that investment in the development of the facilities of the coal terminal will be executed by the selected private operator.

784. Terminal operator can be organized, for example, as a consortium of the medium scale coal mining companies and coal broker companies in South Kalimantan which is supported by the local banks.

785. A market study is considered necessary in order to organize local companies to the consortium and to realize operation and management of the public coal shipping terminal. The purposes of the market study are proposed as follows.

- To reconfirm necessity of the public coal terminal on the coast of South Kalimantan and its expected roles,
- To analyze financial soundness and feasibility of the project, and
- To survey willingness of local industries to participate to the operation and management of the terminal

C. Investment Plan by PPP Scheme

786. An investment plan on the case study facilities to apply PPP scheme is conceived as follows assuming formation of a consortium of the local industries and its participation as a concessionaire for the operation and management of the terminal.

787. Development and construction of the infrastructure of the coal terminal shall be basically borne by the public sector side, while the super-structure of the terminal and terminal operation shall be borne by the private sector side.

788. Investment by Public Sector (Civil Works) is planned as follows;

i) Construction/Reclamation of Coal Yard
ii) Construction of Berths (with causeway, trestle, etc.)
iii) Drainage of Coal Yard and Settle Tanks
iv) Access Road to the National Road
v) Construction Supervision

789. Investment by Private Sector (Super-structures) is planned as follows;

vi) Coal Conveyer and Ship Loader
vii) Buildings for Terminal Operation
viii) Utility Facilities (power supply, water supply, lightings, etc.)

790. Around 93 % of the initial cost is borne by the Public Sector while around 7 % of the initial cost is borne by the Private Investor; reference is made to Table 4.3-1.

5.2. Implementation Schedule

791. Preliminary implementation schedule of Pelaihari Terminal development and the disbursement schedule are presented in Table 5.2-1. The main points of the implementation are considered as follows.

A. Public and Private Partnership

792. Investment scheme for the public coal terminal is basically conceived as follow; development and construction of the infrastructure of the coal terminal shall be borne by the public sector side, while the super-structure of the terminal and terminal operation shall be borne by the private sector side. Possible PPP schemes for the project will be analyzed in the following chapter.

B. Construction of Terminal Infrastructure

793. Construction of Pelaihari Terminal commenced in 2008 with the DGST's own budget and under its supervision, and construction works are scheduled for completion in 2012.

794. Hence, the implementation schedule studied here is made on the assumption that the coal terminal will become operational in the year 2013.

C. Market Study and Tender Documentation

795. A market study is considered necessary to attract private investors to the project, and the study should be lead and executed by DGST. The market study could be conducted as an extension of the current JICA Study if a consensus on this matter is reached.

796. The market study and the subsequent preparation of tender process, such as Tender Documentation and Prequalification of the bidders, is also necessary for Operator Selection, and should be executed by DGST. These processes will require at least one year.

D. Formation of Consortium and Financial Arrangement

797. Subsequent to the tender process of Operator Selection, formation of the Consortium by the local industries and financial arrangement will follow. These two processes will be executed concurrently.

E. Development of Super-structures of the Terminal

798. Development of the super-structures of Pelaihari Terminal will be executed by the private investor. Super-structures, mainly installation of the coal handling equipment and coal conveyers, will be constructed within a year to enable the terminal to be operational simultaneously with the completion of civil works.

Table 5.2-1 Pelaihari Coal Terminal Construction Schedule and Disbursement

Description	Unit	Quantity	Amount (1,000 Rupiah)	2008	2009	2010	2011	2012	2013
Civil Works									
1.1 General Cost (GC)	l.s.	1	2,801,586	560,317	560,317	560,317	560,317	560,317	
1.2 Land Reclamation	m^2	56,000	45,000,000			22,500,000	22,500,000		
1.3 Causeway	m	80	3,029,270	3,029,270					
1.4 Abutment			143,353			143,353			
1.5. Trestle and Joint to Berth	m^2	5,400	76,007,583		30,403,033	30,403,033	15,201,517		
1.6 Small Craft Berth			27,403,726			27,403,726			
1.7 Second Berth			30,594,168				30,594,168		
1.8 Drainage and Settle Tanks	l.s.	1	18,497,968					18,497,968	
1.9. Access Road	m	2,000	16,000,000				16,000,000		
1.10 Supervision			6,584,330	1,316,866	1,316,866	1,316,866	1,316,866	1,316,866	
Operator Selection									
Market Study for PPP									
Tender Documentation / Prequalification									
Operator Selection (Tender Process)									
Consortium / Financial Arrangement									
Concession Contract of Terminal Operator									
2. Super-structures of Terminal									
2.1 Coal Coveyer	l.s.	1	5,500,000					5,500,000	
2.2 Ship Loader	l.s.	1	3,300,000					3,300,000	
2.3 Administrative Building	m^2	400	2,200,000					2,200,000	
2.4 Repair Shop	m^2	150	577,500					577,500	
2.5 Weighing Device	l.s.	1	1,650,000					1,650,000	
2.6 Utility Facilities	l.s.	1	3,968,250					3,968,250	

6. Possible PPP Schemes and Financial Analysis

6.1. Premises on the Project

A. Initial Investment Costs

799. Initial investment costs are estimated as shown in Table 6.1-1.

Table 6.1-1 Initial Investment Costs (Public + Private)

	Item	Approx. Q'ty		Total Cost US$ '000
	Construction of Port Facilities, Buildings and Equipment for Pelaihari Coal Termi			22,114
	1. Civil Works	1	sum	
	1.1 General Cost	1	l.s.	255
	1.2 Land Reclamation	56,000	m2	4,091
	1.3 Causeway	80	m	275
	1.4 Abutment	1	l.s.	13
	1.5 Trestle and Joint to Berth	5,400	m2	6,910
	1.6 Small Craft Berth	1	l.s.	2,491
	1.7 Second Berth	1	l.s.	2,781
	1.8 Drainage and Settle Tanks	1	l.s.	1,682
	1.9 Access Road	1	l.s.	1,455
	1.10 Supervision	1	l.s.	599
	1.11 Total Civil Works (TC)			20,551
	2. Super-structure of Terminal			
	2.1 Coal Conveyor	1	l.s.	500
	2.2 Ship Loader	1	l.s.	300
	2.3 Administration Building	400	m2	200
	2.4 Repair Shop	150	m2	53
	2.5 Weighting Device	1	l.s.	150
	2.6 Utility Facilities	1	l.s.	361
	2.7 Total Super-structures (TS)			1,563
	3. Price Escalation			442
	Total Construction Cost			22,557
	4. Interest During Construction (IDC)			-
	TJP Total Direct Project Cost-1			22,557
	5. Physical Contingency			2,256
	PLH Total Direct Project Cost	1.12200		24,812
	6. VAT			2,481
	PLH Total Project Cost			27,294

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

800. Equipment to be install with their service life are shown in Table 6.1-2.

Table 6.1-2 Depreciation Conditions for Equipment

Item	No. of units	life time
Concessionaire		
Conveyer	1	15
Loader	1	15
Excavator	1	8
Bulldozer	3	10
Hopper/Vibrator	1	8
Yard Vehicle	2	4
Fire Fighting Vehicle	1	10
PC & Fitting	1	10

B. Management and Operation Costs

801. Manning schedule of the port authority and the operator are shown in Table 6.1-3 and in Table 6.1-4.

Table 6.1-3 Manning schedule of PA

PA Staff		
PA Staff		
General Manager		1
Manager		1
Assist. Manager		1
Stuff		1
Total		4

Table 6.1-4 Manning schedule of TOU

Office		
Concessionair (Office)		
CEO (office manager)		1
Manager		3
Stuff		4
Total		8

Labour Cost			2013
Concessionair (Worker)			
Ship,Yard Operation			
Boss		1	1
Operator		3	3
Total		4	4

802. Operation costs are estimated as shown in Table 6.1-5.

Table 6.1-5 Operation Cost

	PA	TOU
Personnel Cost	37,500,000 Rp/person/year	Manager class: 135,000,000 Rp/person/year Stuff class: 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: 200,000m3, 1.14US$/m3	
Depreciation	Civil structure: 30 year, Equipment: 15 year	

C. Tariff and Duties

803. Tariff and duties are set as in Table 6.1-6 and in Table 6.1-7 taking the current level applied in Balikpapan Coal Terminal into consideration.

Table 6.1-6 Tariff set by the Government

Port Tariff		
PA	Light Due	US$ 0.034/GRT-arrival

	Harbor Due	US$ 0.080/GRT-arrival
	Quay Due	US$ 0.088/GRT-day
	Anchorage service	US$0.007/GRT- call

Table 6.1-7 Samples of Terminal Charges

Terminal Handling Charge: TOU	
Terminal handling charge	Rp 17,000/ton
Mooring/unmooring service	Rp 388,700/ movement

D. Estimated Scale of Business

804. Potential demand for Pelaihari Coal Terminal is presumed as 1.2 million tons/year considering the production scale of potential user mining industries, and vessel size is set as 8,000GRT which will make 156 calls/year during the concession period from 2013 to 2042 (30 years)

Table 6.1-8 Development Schedule

	Redevelopment	Operation
General	2008~2012	---
Land Reclamation	2010~2011	2012
Causeway	2008~2008	2009
Abutment	2010~2010	2011
Trestle and joint to berth	2009~2011	2012
Small Craft and Second Berth	2010~2011	2012
Drainage and Settle Tanks / Access Road	2011~2012	2013
Coal Conveyor, Ship Loader	2012~2012	2013
Administrative Building, Repair Shop, Weighting Device and Utility Facilities	2012~2012	2013

6.2. Possible PPP Schemes for Development and Operation of Pelaihari Coal Terminal

805. In Indonesia, special terminal which is exclusively used by the industry for the transportation of its products and/or materials such as coal terminal is stipulated to be developed by the industry itself and is prohibited to be used for other purposes and for other users.

806. There are, however, some medium or small scale industries which are not financially capable to provide the terminal for its own use, and hence the Project is intended to provide some scheme to be able to provide the facilities for these minor users.

807. One of the possible schemes is to assist these industries by offering non interest loan from government to ease their financial burden like the exclusive use container terminal development in Japan.

808. Rationale for this scheme is that it is not proper to provide facilities by the fund from a general account budget to the specific private firm for its exclusive use, but provision of non interest or law interest loan to the development of such facility might be politically accepted when such user industry has special importance to the national economy.

809. Pelaihari Coal Terminal is planned to provide certain schemes to ease financial burden of medium and small scale coal mining industries for development of common use by these industries when they form a union of terminal operator.

810. Originally it is planned and under development by DGST as a common use terminal, though its rationale has not been seriously examined.

811. Case studies are set to check the feasibility of some PPP scheme to be applied including the project currently implemented by DGST.

A. Case-1

- Port authority/DGST provides the infrastructure (land reclamation and causeway) by a general account budget and terminal operator (union of coal mining industries) provides superstructure and equipment by the fund of which 40% is provided by non interest loan from the government and 60% is provided by the union (debt/equity ratio is 70/30)
- PPP scheme applied is the concession to lease the infrastructure to the terminal operator with the concession fee.
- Concession fees consist of fixed fee for repayment of government fund by the port authority to the national treasury and land and water rent and variable fee in the form of 5% 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.）

B. Case-2

- Scheme is the same as case-1 with only difference in non interest loan of 20% instead of 40% in case-1

C. Case-3

- Scheme is the same as case-1 with only difference in non interest loan of 0% instead of 40% in case-1

D. Case-4

- All the facilities are provided by the terminal operator with the fund of which 40% is non interest loan from the government and 60% is provided by the terminal operator with debt/equity ratio of 70/30.
- PPP scheme is the concession with concession fees consist of variable fee of 5% revenue share and land and water rent

6.3. Financial Conditions of the Port Authority and the Concessionaire

812. For the purpose of financial analysis, financial conditions of the port authority and the terminal operator/concessionaire are set as shown in Table 6.3-1.

The Discount rates of each case is set as follows;

Port Authority: 0.0% (the interest rate of government funds)

Terminal Operator: 6.3% (case-1), 8.4% (case-2), 10.5% (case-3), 6.3% (case-4) (calculated from market interest rates (15.0%) of Indonesia, ratio of fund-raising except for government funds (0.6, 0.8, 1.0 and 0.6 respectively) 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 6.3-1 Financial Conditions of Port Authority and Terminal Operator

Case-1	Port Authority	Terminal Operator (Concessionaire)
1. Cost Allocation	Invest on infrastructure (Causeway, land reclamation)	Superstructure and equipment
2. Financial Resource	Government fund	non interest loan (40%), bank (70%) and own equity (30%=$0.5mill)
3. Tax	non taxable	20% income tax
4. Maintenance	infrastructure & maintenance dredging	superstructure & other equipment
5. Depreciation	Infrastructure	Superstructure and equipment
6. Concession fees	Fixed fee for infrastructur equivalent amount to repayment of governmet fund +land & water rent +variable fee in terms of 10% revenue share (initial 5 years 5%)	
7. Renewal cost for equipment	not applicable	by its own equity
Case-2	**Port Authority**	**Terminal Operator (Concessionaire)**
1. Cost Allocation	Same as case-1	same as case-1
2. Financial Resource	Same as case-1	non interest loan (20%), bank (70%) and own equity (30%=$0.7mill)
3. Tax	Same as case-1	same as case-1
4. Maintenance	Same as case-1	same as case-1
5. Depreciation	Same as case-1	same as case-1
6. Concession fees	Same as cas-1	
7. Renewal cost for equipment	not applicable	same as case-1
Case-3	**Port Authority**	**Terminal Operator (Concessionaire)**
1. Cost Allocation	Same as case-1	same as case-1
2. Financial Resource	Same as case-1	bank (70%) and own equity (30%=$0.8mill)
3. Tax	Same as case-1	20% income tax
4. Maintenance	Same as case-1	same as case-1
5. Depreciation	Same as case-1	same as case-1
6. Concession fees	Same as case-1	
7. Renewal cost for equipment	not applicable	same as case-1
Case-4	**Port Authority**	**Terminal Operator (Concessionaire)**
1. Cost Allocation	no investment	investment on all facilities and
2. Financial Resource	not applicable	non interest loan (40%), bank (70%) and own equity (30%=$5mill)
3. Tax	Same as cas-1	20% income tax
4. Maintenance	not applicable	all the facilities and equipment
5. Depreciation	not applicable	all the facilities and equipment
6. Concession fees	land and water rent + variable fee of 5% revenue share (initial 5 years exemption)	
7. Renewal cost for equipment	not applicable	from own equity

6.4. Evaluation of PPP Scheme

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

813. In case-4、it is clear that Debt Service Coverage Ratio does not improve for a long time based on the financial indicators and financial statements. The financial statements of the case-4 are attached in the report.

B. Result of Evaluation

814. Terminal Operator will be able to invest on the superstructure with 0.5 million dollars of its own equity when the government provides 40% of the operator's investment amount with non interest loan (case-1) and financial statements during the concession period shows possible stable financial management both for the port authority and the terminal operator (see Table 6.4-1).

815. Case-2 shows the financial effects of 20% of non interest loan provided to the operator instead of 40% in cas-1. Estimated financial statements show that even 20% of non interest loan form the government, both the port authority and the terminal operator can financially operate since the initial investment amount for the operator is rather small (less than 10% of the total investment cost) (see Table 6.4-2).

816. Case-3 shows the financial effects of no provision of financial assistance to the operator's investment while the government provides the infrastructure, and results show that even in case without government financial assistance, port can be financially sustainable (see Table 6.4-3).

817. Only difference among above these three cases lies in the necessary amount of own equity of the terminal operator. When there is no government support in the terminal operator's investment, he has to prepare at least about 1 million dollars equity. Hence project viability highly depends on the financial capability of such small or medium scale industry whether they can prepare the necessary paid up capital.

818. Case-4 is the case that whole investment including infrastructure is done by the terminal operator with the government assistance with non interest loan for 40% of the total investment cost. In this case, financial analysis shows that even the terminal operator prepares about 5 million dollars equity, still 42% (11.5 million dollars) of total investment costs (around 27.3 million dollars) has to be financed by market bank and it will make severe burden to the operator for these small scale business (see Table 6.4-4~Table 6.4-6).

819. In case of the provision of the terminal for exclusive use by the specific industry, the terminal should be, in principle, provided by the firm, since it is a kind of facility of its production line. There is, however, the case where such terminal is difficult for the industry to be prepared by itself because of necessity of huge amount of investment.

820. When the government assistance is considered to be necessary for the promotion of such industry from the political reason, provision of infrastructure by the public sector for leasing such infrastructure to the specific industry is a proper scheme, and the superstructure should be provided by the industry itself, since it is designed to fit to specific handling of the product of the industry.

821. In this case, there may be a case where some member firm will have different time period of license, and hence short time lease would be appropriate to cope with variable situation.

Table 6.4-1 Result of Financial Analysis (Case-1): Pelaihari Coal Terminal

OUTPUTS

Concession Fee	1st Prd	2nd Prd	3rd Prd
Fixed	845	845	845
Variable	99	198	198

	1000$
Loader lease	0
Conveyer lease	0

TOU

		Financial Indicators				2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
PROFITABILITY (Net Operating Income/ Net Fixed Assets)																						
	Rate of Return on Net Fixed Assets (Criterion: over %)			8.00%		0.00%	0.00%	12.94%	13.63%	14.40%	15.14%	16.10%	13.11%	14.05%	13.58%	14.60%	13.26%	14.22%	15.18%	16.47%	17.99%	9.99%
OPERATIONAL EFFICIENCY																						
	Operating Ratio (Criterion: under 0.7- 0.75)					0.00	0.00	0.79	0.79	0.79	0.79	0.79	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.87
	Working Ratio (Criterion: under 0.5- 0.6)					0.00	0.00	0.71	0.71	0.71	0.71	0.71	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
LOAN REPAYMENT CAPACITY																						
	Debt Service Coverage Ratio (Criterion: over 1.0)					0.00	0.00	1.71	1.77	1.84	1.91	1.99	1.73	1.81	1.90	1.99	2.10	2.22	2.35	2.50	2.67	2.87
		concessionn fee rate (fixed)				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		concession fee rate (variable)				5%	5%	5%	5%	5%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
		total concession fee/revenue				0%	0%	49%	49%	49%	49%	49%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%
	MAXIMUM CONCESSION FEE RATE	NPV(Profit/Revenue)		67.50%																		
		Financial Indicators			2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
PROFITABILITY (Net Operating Income/ Net Fixed Assets)																						
	Rate of Return on Net Fixed Assets (Criterion: over %)			8.00%	9.94%	10.93%	12.13%	13.63%	12.44%	14.02%	16.07%	18.82%	18.64%	22.44%	28.19%	37.90%	55.02%	110.00%	18.39%			
OPERATIONAL EFFICIENCY																						
	Operating Ratio (Criterion: under 0.7- 0.75)				0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87			
	Working Ratio (Criterion: under 0.5- 0.6)				0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76			
LOAN REPAYMENT CAPACITY																						
	Debt Service Coverage Ratio (Criterion: over 1.0)				13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95			
FINANCIAL INTERNAL RATE OF RETURN				13.5%																		
		concessionn fee rate (fixed)			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
		concession fee rate (variable)			10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%			
		total concession fee/revenue			54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%			
	MAXIMUM CONCESSION FEE RATE	NPV(Profit/Revenue)		67.50%																		
		Retained Earnings Total		6,045	($1,000)																	

PA

		Financial Indicators				2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
PROFITABILITY (Net Operating Income/ Net Fixed Assets)																						
	Rate of Return on Net Fixed Assets (Criterion: over %)			1.59%		0.00%	0.00%	0.92%	0.94%	0.96%	0.79%	1.01%	1.49%	1.53%	1.58%	1.40%	1.67%	1.72%	1.78%	1.84%	1.64%	1.97%
OPERATIONAL EFFICIENCY																						
	Operating Ratio (Criterion: under 0.7- 0.75)					0.00	0.00	0.78	0.78	0.78	0.83	0.78	0.72	0.72	0.72	0.76	0.72	0.72	0.72	0.72	0.76	0.72
	Working Ratio (Criterion: under 0.5- 0.6)					0.00	0.00	0.23	0.23	0.23	0.27	0.23	0.21	0.21	0.21	0.24	0.21	0.21	0.21	0.21	0.24	0.21
LOAN REPAYMENT CAPACITY																						
	Debt Service Coverage Ratio (Criterion: over 1.0)							0.97	0.97	0.97	0.91	0.97	1.08	1.08	1.08	1.03	1.08	1.08	1.08	1.08	1.03	1.08
		Financial Indicators			2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
PROFITABILITY (Net Operating Income/ Net Fixed Assets)																						
	Rate of Return on Net Fixed Assets (Criterion: over %)			1.59%	2.04%	2.12%	2.21%	1.99%	2.40%	2.51%	2.63%	2.76%	2.51%	3.06%	3.24%	3.45%	3.67%	3.40%	4.24%			
OPERATIONAL EFFICIENCY																						
	Operating Ratio (Criterion: under 0.7- 0.75)				0.72	0.72	0.72	0.76	0.72	0.72	0.72	0.72	0.76	0.72	0.72	0.72	0.72	0.76	0.72			
	Working Ratio (Criterion: under 0.5- 0.6)				0.21	0.21	0.21	0.24	0.21	0.21	0.21	0.21	0.24	0.21	0.21	0.21	0.21	0.24	0.21			
LOAN REPAYMENT CAPACITY																						
	Debt Service Coverage Ratio (Criterion: over 1.0)				1.08	1.08	1.08	1.03	1.08	1.08	1.08	1.08	1.03	1.08	1.08	1.08	1.08	1.03	1.08			
		Retained Earnings Total		9,005	($1,000)																	
FINANCIAL INTERNAL RATE OF RETRUN				1.5%																		

Table 6.4-2 Result of Financial Analysis (Case-2): Pelaihari Coal Terminal

OUTPUTS

Concession Fee	1st Prd	2nd Prd	3rd Prd
Fixed	845	845	845
Variable	99	198	198

	1000$
Loader lease	0
Conveyer lease	0

TOU

		Financial Indicators			2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
PROFITABILITY (Net Operating Income/ Net Fixed Assets)																					
	Rate of Return on Net Fixed Assets (Criterion: over %)		8.00%		0.00%	0.00%	12.88%	13.54%	14.27%	14.97%	15.87%	12.92%	13.80%	13.33%	14.27%	12.98%	13.87%	14.74%	15.91%	17.27%	9.76%
OPERATIONAL EFFICIENCY																					
	Operating Ratio (Criterion: under 0.7- 0.75)				0.00	0.00	0.79	0.79	0.79	0.79	0.79	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.87
	Working Ratio (Criterion: under 0.5- 0.6)				0.00	0.00	0.71	0.71	0.71	0.71	0.71	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
LOAN REPAYMENT CAPACITY																					
	Debt Service Coverage Ratio (Criterion: over 1.0)				0.00	0.00	1.41	1.47	1.53	1.60	1.68	1.46	1.54	1.63	1.72	1.83	1.95	2.09	2.25	2.44	2.66
		concessionn fee rate (fixed)			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		concession fee rate (variable)			5%	5%	5%	5%	5%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
		total concession fee/revenue			0%	0%	49%	49%	49%	49%	49%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%
	MAXIMUM CONCESSION FEE RATE	NPV(Profit/Revenue)	67.50%																		
		Financial Indicators		2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
PROFITABILITY (Net Operating Income/ Net Fixed Assets)																					
	Rate of Return on Net Fixed Assets (Criterion: over %)		8.00%	9.69%	10.60%	11.69%	13.03%	11.93%	13.33%	15.10%	17.41%	17.21%	20.29%	25.82%	32.23%	41.45%	60.90%	16.91%			
OPERATIONAL EFFICIENCY																					
	Operating Ratio (Criterion: under 0.7- 0.75)			0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.86	0.86	0.86	0.86	0.86			
	Working Ratio (Criterion: under 0.5- 0.6)			0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76			
LOAN REPAYMENT CAPACITY																					
	Debt Service Coverage Ratio (Criterion: over 1.0)			27.91	27.91	27.91	27.91	27.91	27.91	27.91	27.91	27.91	27.91	27.91	27.91	27.91	27.91	27.91			
FINANCIAL INTERNAL RATE OF RETURN			13.3%																		
		concessionn fee rate (fixed)		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
		concession fee rate (variable)		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%			
		total concession fee/revenue		54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%			
	MAXIMUM CONCESSION FEE RATE	NPV(Profit/Revenue)	67.50%																		
	Retained Earnings Total		5,819	($1,000)																	

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		Financial Indicators			2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
PROFITABILITY (Net Operating Income/ Net Fixed Assets)																					
	Rate of Return on Net Fixed Assets (Criterion: over %)		1.59%		0.00%	0.00%	0.92%	0.94%	0.96%	0.79%	1.01%	1.49%	1.53%	1.58%	1.40%	1.67%	1.72%	1.78%	1.84%	1.64%	1.97%
OPERATIONAL EFFICIENCY																					
	Operating Ratio (Criterion: under 0.7- 0.75)				0.00	0.00	0.78	0.78	0.78	0.83	0.78	0.72	0.72	0.72	0.76	0.72	0.72	0.72	0.72	0.76	0.72
	Working Ratio (Criterion: under 0.5- 0.6)				0.00	0.00	0.23	0.23	0.23	0.27	0.23	0.21	0.21	0.21	0.24	0.21	0.21	0.21	0.21	0.24	0.21
LOAN REPAYMENT CAPACITY																					
	Debt Service Coverage Ratio (Criterion: over 1.0)						0.97	0.97	0.97	0.91	0.97	1.08	1.08	1.08	1.03	1.08	1.08	1.08	1.08	1.03	1.08
		Financial Indicators		2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
PROFITABILITY (Net Operating Income/ Net Fixed Assets)																					
	Rate of Return on Net Fixed Assets (Criterion: over %)		1.59%	2.04%	2.12%	2.21%	1.99%	2.40%	2.51%	2.63%	2.76%	2.51%	3.06%	3.24%	3.45%	3.67%	3.40%	4.24%			
OPERATIONAL EFFICIENCY																					
	Operating Ratio (Criterion: under 0.7- 0.75)			0.72	0.72	0.72	0.76	0.72	0.72	0.72	0.72	0.76	0.72	0.72	0.72	0.72	0.76	0.72			
	Working Ratio (Criterion: under 0.5- 0.6)			0.21	0.21	0.21	0.24	0.21	0.21	0.21	0.21	0.24	0.21	0.21	0.21	0.21	0.24	0.21			
LOAN REPAYMENT CAPACITY																					
	Debt Service Coverage Ratio (Criterion: over 1.0)			1.08	1.08	1.08	1.03	1.08	1.08	1.08	1.08	1.03	1.08	1.08	1.08	1.08	1.03	1.08			
	Retained Earnings Total		9,005	($1,000)																	
FINANCIAL INTERNAL RATE OF RETRUN			1.5%																		

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Table 6.4-3 Result of Financial Analysis (Case-3): Pelaihari Coal Terminal

OUTPUTS

Concession Fee	1st Prd	2nd Prd	3rd Prd
Fixed	845	845	845
Variable	99	198	198

	1000$
Loader lease	0
Conveyer lease	0

TOU

					2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
PROFITABILITY (Net Operating Income/ Net Fixed Assets)	Financial Indicators																				
	Rate of Return on Net Fixed Assets (Criterion: over %)		8.00%		0.00%	0.00%	12.81%	13.44%	14.14%	14.80%	15.65%	12.74%	13.56%	13.09%	13.97%	12.72%	13.54%	14.34%	15.39%	16.62%	9.54%
OPERATIONAL EFFICIENCY																					
	Operating Ratio (Criterion: under 0.7- 0.75)				0.00	0.00	0.79	0.79	0.79	0.79	0.79	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.87
	Working Ratio (Criterion: under 0.5- 0.6)				0.00	0.00	0.71	0.71	0.71	0.71	0.71	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
LOAN REPAYMENT CAPACITY																					
	Debt Service Coverage Ratio (Criterion: over 1.0)				0.00	0.00	1.20	1.26	1.32	1.38	1.45	1.27	1.34	1.42	1.52	1.62	1.74	1.88	2.05	2.24	2.48
		concessionn fee rate (fixed)			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		concession fee rate (variable)			5%	5%	5%	5%	5%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
		total concession fee/revenue			0%	0%	49%	49%	49%	49%	49%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%
	MAXIMUM CONCESSION FEE RATE	NPV(Profit/Revenue)	67.50%																		

					2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
PROFITABILITY (Net Operating Income/ Net Fixed Assets)	Financial Indicators																				
	Rate of Return on Net Fixed Assets (Criterion: over %)		8.00%		9.47%	10.30%	11.29%	12.49%	11.47%	12.71%	14.25%	16.22%	16.02%	18.55%	23.07%	27.86%	34.21%	45.92%	15.61%			
OPERATIONAL EFFICIENCY																						
	Operating Ratio (Criterion: under 0.7- 0.75)				0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.86	0.86	0.86	0.86	0.86			
	Working Ratio (Criterion: under 0.5- 0.6)				0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76			
LOAN REPAYMENT CAPACITY																						
	Debt Service Coverage Ratio (Criterion: over 1.0)				n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			
FINANCIAL INTERNAL RATE OF RETURN			13.2%																			
		concessionn fee rate (fixed)			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
		concession fee rate (variable)			10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%			
		total concession fee/revenue			54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%			
	MAXIMUM CONCESSION FEE RATE	NPV(Profit/Revenue)	67.50%																			
	Retained Earnings Total		5,529	($1,000)																		

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					2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
PROFITABILITY (Net Operating Income/ Net Fixed Assets)	Financial Indicators																				
	Rate of Return on Net Fixed Assets (Criterion: over %)		1.59%		0.00%	0.00%	0.92%	0.94%	0.96%	0.79%	1.01%	1.49%	1.53%	1.58%	1.40%	1.67%	1.72%	1.78%	1.84%	1.64%	1.97%
OPERATIONAL EFFICIENCY																					
	Operating Ratio (Criterion: under 0.7- 0.75)				0.00	0.00	0.78	0.78	0.78	0.83	0.78	0.72	0.72	0.72	0.76	0.72	0.72	0.72	0.72	0.76	0.72
	Working Ratio (Criterion: under 0.5- 0.6)				0.00	0.00	0.23	0.23	0.23	0.27	0.23	0.21	0.21	0.21	0.24	0.21	0.21	0.21	0.21	0.24	0.21
LOAN REPAYMENT CAPACITY																					
	Debt Service Coverage Ratio (Criterion: over 1.0)						0.97	0.97	0.97	0.91	0.97	1.08	1.08	1.08	1.03	1.08	1.08	1.08	1.08	1.03	1.08

					2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
PROFITABILITY (Net Operating Income/ Net Fixed Assets)	Financial Indicators																					
	Rate of Return on Net Fixed Assets (Criterion: over %)		1.59%		2.04%	2.12%	2.21%	1.99%	2.40%	2.51%	2.63%	2.76%	2.51%	3.06%	3.24%	3.45%	3.67%	3.40%	4.24%			
OPERATIONAL EFFICIENCY																						
	Operating Ratio (Criterion: under 0.7- 0.75)				0.72	0.72	0.72	0.76	0.72	0.72	0.72	0.72	0.76	0.72	0.72	0.72	0.72	0.76	0.72			
	Working Ratio (Criterion: under 0.5- 0.6)				0.21	0.21	0.21	0.24	0.21	0.21	0.21	0.21	0.24	0.21	0.21	0.21	0.21	0.24	0.21			
LOAN REPAYMENT CAPACITY																						
	Debt Service Coverage Ratio (Criterion: over 1.0)				1.08	1.08	1.08	1.03	1.08	1.08	1.08	1.08	1.03	1.08	1.08	1.08	1.08	1.03	1.08			
	Retained Earnings Total		9,005	($1,000)																		
FINANCIAL INTERNAL RATE OF RETRUN			1.5%																			

Table 6.4-1 Result of Financial Analysis (Case-4): Pelaihari Coal Terminal

OUTPUTS

Concession Fee	1st Prd	2nd Prd	3rd Prd
Fixed	0	0	0
Variable	103	206	206

	1000$
Loader lease	0
Conveyer lease	0

TOU

					2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
PROFITABILITY (Net Operating Income/ Net Fixed Assets)		Financial Indicators																			
	Rate of Return on Net Fixed Assets (Criterion: over %)		8.00%		0.00%	0.00%	1.03%	1.06%	1.10%	1.14%	1.18%	0.83%	0.86%	0.90%	0.94%	0.98%	1.02%	1.07%	1.12%	1.18%	0.87%
OPERATIONAL EFFICIENCY																					
	Operating Ratio (Criterion: under 0.7- 0.75)				0.00	0.00	0.84	0.84	0.84	0.84	0.84	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.93
	Working Ratio (Criterion: under 0.5- 0.6)				0.00	0.00	0.37	0.37	0.37	0.37	0.37	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
LOAN REPAYMENT CAPACITY																					
	Debt Service Coverage Ratio (Criterion: over 1.0)				0.00	0.00	0.37	0.38	0.40	0.42	0.44	0.43	0.45	0.47	0.50	0.54	0.57	0.62	0.67	0.73	0.80
		concessionn fee rate (fixed)			0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		concession fee rate (variable)			5%	5%	5%	5%	5%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
		total concession fee/revenue			0%	0%	7%	7%	7%	7%	7%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
	MAXIMUM CONCESSION FEE RATE	NPV(Profit/Revenue)	68.04%																		
		Financial Indicators			2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
PROFITABILITY (Net Operating Income/ Net Fixed Assets)																					
	Rate of Return on Net Fixed Assets (Criterion: over %)		8.00%		0.93%	0.99%	1.06%	1.14%	1.24%	1.35%	1.49%	1.66%	1.87%	2.14%	2.75%	3.29%	4.11%	5.47%	8.17%			
OPERATIONAL EFFICIENCY																					
	Operating Ratio (Criterion: under 0.7- 0.75)				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92			
	Working Ratio (Criterion: under 0.5- 0.6)				0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42			
LOAN REPAYMENT CAPACITY																					
	Debt Service Coverage Ratio (Criterion: over 1.0)				3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24			
FINANCIAL INTERNAL RATE OF RETURN			1.0%																		
		concessionn fee rate (fixed)			0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%			
		concession fee rate (variable)			10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%			
		total concession fee/revenue			12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%			
	MAXIMUM CONCESSION FEE RATE	NPV(Profit/Revenue)	68.04%																		
	Retained Earnings Total		-11,298	($1,000)																	

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					2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
PROFITABILITY (Net Operating Income/ Net Fixed Assets)		Financial Indicators																			
	Rate of Return on Net Fixed Assets (Criterion: 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																					
	Operating Ratio (Criterion: under 0.7- 0.75)				0.00	0.00	0.21	0.21	0.21	0.21	0.21	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
	Working Ratio (Criterion: under 0.5- 0.6)				0.00	0.00	0.21	0.21	0.21	0.21	0.21	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
LOAN REPAYMENT CAPACITY																					
	Debt Service Coverage Ratio (Criterion: over 1.0)						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
		Financial Indicators			2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
PROFITABILITY (Net Operating Income/ Net Fixed Assets)																					
	Rate of Return on Net Fixed Assets (Criterion: 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%			
OPERATIONAL EFFICIENCY																					
	Operating Ratio (Criterion: under 0.7- 0.75)				0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12			
	Working Ratio (Criterion: under 0.5- 0.6)				0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12			
LOAN REPAYMENT CAPACITY																					
	Debt Service Coverage Ratio (Criterion: over 1.0)				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			
	Retained Earnings Total		5,744	($1,000)																	
FINANCIAL INTERNAL RATE OF RETRUN			0.0%																		

Table 6.4-2 TOU's Income Statement (Case-4): Pelaihari Coal Terminal

Income Statement of the Pelaihari Project ($'000s)	2008	2009	2010	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
REVENUE																																			
Tonnage(Harbor Due)						52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52
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
Anchorage Fee for Vessel						4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Anchorage Fee for Cargo																																			
Wharfage for Vessels						114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114
Wharfage 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
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
Moorage 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
Light Due						22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
Charge for mooring/unmooring						11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Charge for opening/closing hatch						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Charge for handling coal						1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855	1,855
Bond Interest (From 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
Concession Variable Fee (To PA)																																			
TOTAL REVENUE						2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058
EXPENSE																																			
DIRECT EXPENSE																																			
Labour Cost (Concessionaire)						35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
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
Maintenance of equipment (Concessionaire including shore cranes)						89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89
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
Fuel & Utilities (for Concessionaire)						36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
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
Maintenance of infrastructures (Concessionaire: minor repairs)						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
Maintenance dredging						0	0	0	0	0	0	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 Direct Expense						415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415
INDIRECT EXPENSE																																			
Depreciation (equipment) (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
Depreciation (renewal/add equipment) (Concessionaire)						72	72	72	72	72	72	72	72	72	72	72	72	72	72	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
Depreciation (own equity)						16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Depreciation Expense (Infrastructures)						0	0	0	0	0	0	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 (TOU Gov finance)						373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373
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
Depreciation (TOU domestic fund)						511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511
Insurance & Claims (??% of Revenue)						31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
Bad Debt (0.5% of Revenue)						10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Concession Fixed 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
Concession Variable Fee (to PA)						103	103	103	103	103	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206
Land & Water Rental Fee (to PA)						32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
Total Indirect Expense						1,148	1,148	1,148	1,148	1,148	1,251	1,251	1,251	1,251	1,251	1,251	1,251	1,251	1,251	1,316	1,316	1,316	1,316	1,316	1,316	1,316	1,316	1,316	1,316	1,316	1,316	1,301	1,301	1,301	1,301
GENERAL & ADMINISTRATIVE																																			
Administrative Personnel (Concessionaire)						123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123
Others (Personnel Cost x 40%)						49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49
PA TJ 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
Total General & Administrative						172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172
TOTAL EXPENSE						1,735	1,735	1,735	1,735	1,735	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,888	1,888	1,888	1,888
OPERATING INCOME						322	322	322	322	322	219	219	219	219	219	219	219	219	219	154	154	154	154	154	154	154	154	154	154	154	154	169	169	169	169
OTHER INCOME/(EXPENSE)																																			
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
Repayment of Interest on Long-Term Loans (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
Repayment of Interest on Lon-Term Loan Principal (Gov finance)						0	0	0	0	0	0	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 (TOU domestic fund)						2,149	2,003	1,857	1,712	1,566	1,420	1,275	1,129	983	838	692	546	401	255	109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repayment of Interest on Short-Term Loans (PA)																																			
Repayment of Interest on Long-Term Loans (TOU 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
Repayment of Interest on Short-Term Loans (Concessionaire)																																			
TOTAL OTHER						2,149	2,003	1,857	1,712	1,566	1,420	1,275	1,129	983	838	692	546	401	255	109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EARNINGS before TAXES						-1,826	-1,681	-1,535	-1,389	-1,244	-1,201	-1,055	-910	-764	-618	-473	-327	-181	-36	44	154	154	154	154	154	154	154	154	154	154	154	169	169	169	169	169
INCOME TAX (from Concessionaire)						0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	31	31	31	31	31	31	31	31	31	31	31	34	34	34	34
NET INCOME after tax						-1,826	-1,681	-1,535	-1,389	-1,244	-1,201	-1,055	-910	-764	-618	-473	-327	-181	-36	35	123	123	123	123	123	123	123	123	123	123	123	135	135	135	135	135
Retained Earnings						-1,826	-3,507	-5,042	-6,431	-7,675	-8,876	-9,931	-10,841	-11,604	-12,223	-12,695	-13,022	-13,203	-13,239	-13,203	-13,081	-12,958	-12,835	-12,712	-12,589	-12,467	-12,344	-12,221	-12,098	-11,975	-11,840	-11,704	-11,569	-11,433	-11,298

Table 6.4-3 TOU's Cash Flow Statement and Balance Sheet (Case-4): Pelaihari Coal Terminal

Statement of Cash Flows ($'000s) of Pelaihari	2008	2009	2010	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
Cash Beginning	0	0	0	0	0	0	-2,234	-4,323	-6,266	-8,064	-9,716	-11,325	-12,788	-14,106	-15,278	-16,304	-17,185	-17,920	-18,509	-18,953	-19,260	-18,466	-17,673	-16,880	-16,086	-15,293	-14,499	-13,706	-12,912	-12,119	-11,326	-10,535	-9,745	-8,955	-8,165
Cash Inflow	5,260	3,079	8,206	9,169	6,491	1,294	1,294	1,294	1,294	1,294	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191
CASH FLOWS FROM OPERATING ACTIVITIES	0	0	0	0	0	1,294	1,294	1,294	1,294	1,294	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191	1,191
Operating Income	0	0	0	0	0	322	322	322	322	322	219	219	219	219	219	219	219	219	219	154	154	154	154	154	154	154	154	154	154	154	169	169	169	169	169
Depreciation (equipment) (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	0
Depreciation (renewal/add equipment) (Concessionaire)	0	0	0	0	0	72	72	72	72	72	72	72	72	72	72	72	72	72	72	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
Depreciation (own equity)	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0	0	0	0	0
Depreciation Expense (Infrastructures)	0	0	0	0	0	0	0	0	0	0	0	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 (TOU Gov finance)	0	0	0	0	0	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373	373
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
Depreciation (TOU domestic fund)	0	0	0	0	0	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511
[Total No cash Items included in Net Income (Depreciation)]	0	0	0	0	0	972	972	972	972	972	972	972	972	972	972	972	972	972	972	1,038	1,038	1,038	1,038	1,038	1,038	1,038	1,038	1,038	1,038	1,038	1,022	1,022	1,022	1,022	1,022
CASH FLOWS FROM FINANCING ACTIVITIES	5,260	3,079	8,206	9,169	6,491	0	0	0	0	0	0	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 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	0	0	0	0	0	0	0	0	0	0	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 (TOU by Gov finance)	220	1,474	3,720	3,842	2,569	0	0	0	0	0	0	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 (TOU domestic fund)	0	1,606	4,486	5,327	3,922	0	0	0	0	0	0	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 Loan (PA)																																			
Concessionaire own equity: initial investment	5,039	0	0	0	0																														
Short -Term Loan (Concessionaire)																																			
Capitalized Interest (Long-term: Government)	0	0	0	0	0	0	0	0																											
Cash Outflow	5,260	3,079	8,206	9,169	6,491	3,529	3,383	3,237	3,092	2,946	2,800	2,655	2,509	2,363	2,218	2,072	1,926	1,781	1,635	1,498	398	398	398	398	398	398	398	398	398	398	401	401	401	401	401
CASH FLOWS FROM INVESTING ACTIVITIES	5,260	3,079	8,206	9,169	6,491	0	0	0	0	0	0	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 (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
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
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 Acquired (TOU by Gov finance)	220	1,474	3,720	3,842	2,569	0	0	0	0	0	0	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 domestic fund (TOU)	0	1,606	4,486	5,327	3,922	0	0	0	0	0	0	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 own equity)	5,039	0	0	0	0	0	0	0	0	0	0	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 FLOWS FROM FINANCING ACTIVITIES	0	0	0	0	0	3,529	3,383	3,237	3,092	2,946	2,800	2,655	2,509	2,363	2,218	2,072	1,926	1,781	1,635	1,498	398	398	398	398	398	398	398	398	398	398	401	401	401	401	401
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
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
Repayment of Lon-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	0
Repayment of Interest on Long-Term Loans (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	0
Repayment of Lon-Term Loan Principal (Gov finance)	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
Repayment of interest on Lon-Term Loan Principal (Gov finance)	0	0	0	0	0	0	0	0	0	0	0	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 Long-Term Loan Principal (TOU domestic fund)	0	0	0	0	0	971	971	971	971	971	971	971	971	971	971	971	971	971	971	971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repayment of Interest on Long-Term Loans (TOU domestic fund)	0	0	0	0	0	2,149	2,003	1,857	1,712	1,566	1,420	1,275	1,129	983	838	692	546	401	255	109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repayment of Lon-Term Loan Principal (Concessionaire)	0	0	0	0	0	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repayment of Interest on Long-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
Repayment of short-Term Loan (TOU)																																			
Repayment of Interest on Short-Term Loans (TOU)	0	0	0	0	0	0	0	0	0	0	0	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 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
Income Tax (Concessionaire only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	31	31	31	31	31	31	31	31	31	31	34	34	34	34	34
Cash Inflow - Cash Outflow	0	0	0	0	0	-2,234	-2,089	-1,943	-1,797	-1,652	-1,609	-1,463	-1,318	-1,172	-1,026	-881	-735	-589	-444	-307	793	793	793	793	793	793	793	793	793	793	790	790	790	790	790
Cash Ending	0	0	0	0	0	-2,234	-4,323	-6,266	-8,064	-9,716	-11,325	-12,788	-14,106	-15,278	-16,304	-17,185	-17,920	-18,509	-18,953	-19,260	-18,466	-17,673	-16,880	-16,086	-15,293	-14,499	-13,706	-12,912	-12,119	-11,326	-10,535	-9,745	-8,955	-8,165	-7,374

Balance Sheet ($'000s)

Balance Sheet ($'000s)	2008	2009	2010	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
CURRENT ASSETS	0	0	0	0	0	-2,234	-4,323	-6,266	-8,064	-9,716	-11,325	-12,788	-14,106	-15,278	-16,304	-17,185	-17,920	-18,509	-18,953	-19,260	-18,466	-17,673	-16,880	-16,086	-15,293	-14,499	-13,706	-12,912	-12,119	-11,326	-10,535	-9,745	-8,955	-8,165	-7,374
Cash and Cash Equivalent Investments	0	0	0	0	0	-2,234	-4,323	-6,266	-8,064	-9,716	-11,325	-12,788	-14,106	-15,278	-16,304	-17,185	-17,920	-18,509	-18,953	-19,260	-18,466	-17,673	-16,880	-16,086	-15,293	-14,499	-13,706	-12,912	-12,119	-11,326	-10,535	-9,745	-8,955	-8,165	-7,374
PROPERTY, PLANT AND EQUIPMENT	5,260	8,339	16,545	25,714	32,206	31,234	30,262	29,290	28,318	27,346	26,374	25,402	24,430	23,458	22,486	21,514	20,542	19,570	18,598	17,561	16,523	15,485	14,447	13,410	12,372	11,334	10,296	9,259	8,221	7,183	6,161	5,139	4,117	3,095	2,073
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	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	0	0	0	0
Fixed Assets (TOU domestic fund)	0	1,606	6,091	11,418	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340
Accumulated Depreciation (TOU domestic fund)	0	0	0	0	0	511	1,023	1,534	2,045	2,557	3,068	3,579	4,091	4,602	5,113	5,625	6,136	6,647	7,159	7,670	8,181	8,693	9,204	9,715	10,227	10,738	11,250	11,761	12,272	12,784	13,295	13,806	14,318	14,829	15,340
Net Fixed Assets (TOU domestic fund)	0	1,606	6,091	11,418	15,340	14,829	14,318	13,806	13,295	12,784	12,272	11,761	11,250	10,738	10,227	9,715	9,204	8,693	8,181	7,670	7,159	6,647	6,136	5,625	5,113	4,602	4,091	3,579	3,068	2,557	2,045	1,534	1,023	511	0
Fixed Assets (Concessionaire own equity and Gov finance)	5,260	6,734	10,454	14,296	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865	16,865
Accumulated Depreciation (Concessionaire own equity and Gov finance)	0	0	0	0	0	461	921	1,382	1,842	2,303	2,764	3,224	3,685	4,145	4,606	5,066	5,527	5,988	6,448	6,975	7,501	8,028	8,554	9,080	9,607	10,133	10,660	11,186	11,712	12,239	12,749	13,260	13,771	14,281	14,792
Net Fixed Assets (Concessionaire own equity and Gov finance)	5,260	6,734	10,454	14,296	16,865	16,405	15,944	15,483	15,023	14,562	14,102	13,641	13,181	12,720	12,259	11,799	11,338	10,878	10,417	9,891	9,364	8,838	8,311	7,785	7,259	6,732	6,206	5,679	5,153	4,626	4,116	3,605	3,095	2,584	2,073
TOTAL ASSETS	5,260	8,339	16,545	25,714	32,206	28,999	25,938	23,023	20,254	17,630	15,049	12,614	10,324	8,180	6,182	4,330	2,623	1,061	-354	-1,699	-1,943	-2,188	-2,432	-2,676	-2,921	-3,165	-3,409	-3,654	-3,898	-4,143	-4,374	-4,606	-4,838	-5,069	-5,301
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	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	0	0	0
LONG-TERM LIABILITIES	220	3,300	11,505	20,675	27,166	25,786	24,406	23,026	21,646	20,266	18,886	17,506	16,125	14,745	13,365	11,985	10,605	9,225	7,845	6,465	6,098	5,731	5,363	4,996	4,629	4,262	3,895	3,528	3,160	2,793	2,426	2,059	1,692	1,325	957
Long-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	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	0	0	0	0	0	0	0
Long-Term Borrowings (TOU from Private)	0	1,606	6,091	11,418	15,340	14,369	13,398	12,427	11,456	10,485	9,514	8,543	7,571	6,600	5,629	4,658	3,687	2,716	1,745	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774
Long-Term Borrowings (Concessionaire Gov finance)	220	1,694	5,414	9,256	11,826	11,417	11,008	10,599	10,190	9,781	9,372	8,963	8,554	8,145	7,736	7,327	6,918	6,509	6,100	5,691	5,324	4,957	4,590	4,223	3,855	3,488	3,121	2,754	2,387	2,019	1,652	1,285	918	551	184
CAPITAL	5,039	5,039	5,039	5,039	5,039	3,213	1,532	-2	-1,392	-2,635	-3,836	-4,892	-5,801	-6,565	-7,183	-7,656	-7,983	-8,164	-8,199	-8,164	-8,041	-7,918	-7,796	-7,673	-7,550	-7,427	-7,304	-7,181	-7,059	-6,936	-6,800	-6,665	-6,529	-6,394	-6,258
Retained Earnings	0	0	0	0	0	-1,826	-3,507	-5,042	-6,431	-7,675	-8,876	-9,931	-10,841	-11,604	-12,223	-12,695	-13,022	-13,203	-13,239	-13,203	-13,081	-12,958	-12,835	-12,712	-12,589	-12,467	-12,344	-12,221	-12,098	-11,975	-11,840	-11,704	-11,569	-11,433	-11,298
Capital	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039	5,039
TOTAL LIABILITIES AND CAPITAL	5,260	8,339	16,545	25,714	32,206	28,999	25,938	23,023	20,254	17,630	15,049	12,614	10,324	8,180	6,182	4,330	2,623	1,061	-354	-1,699	-1,943	-2,188	-2,432	-2,676	-2,921	-3,165	-3,409	-3,654	-3,898	-4,143	-4,374	-4,606	-4,838	-5,069	-5,301

V. New PPP Strategy for D.M.O of Ports

1. Proposed Basic Direction of New PPP Strategy on D.M.O of Ports

1.1. Background

822. The basic goal of government in increasing private participation is, as commonly acknowledged in most of the countries, to establish a more competitive and financially sustainable system of ports. In order to pursue this goal more effectively, it is necessary to select from among the four strategies (outsourcing, restructuring, full divesture, partial divesture). This selection should be consistent not only with the basic goal of the government but also with its specific objectives for promoting the role of the private sector in port operations and investment. Specific objectives of the central government that are frequently mentioned include:

- Increase operational efficiency
- Promote competition among ports and terminals
- Accelerate growth of traffic
- Provide private financing of public infrastructure
- Reduce operating subsidies
- Reduce national deficit
- Downsize government bureaucracy
- Depoliticize port management and labor
- Promote equity ownership[1]

823. In Indonesia, the port sector faces the problem of inefficient operation both in productivity and investment recovery by the state-own companies caused mainly by the followings:

- Commercial ports in Indonesia is managed and operated by state own company -IPC- which is enjoying its monopolistic power, and supervision of IPC is under the jurisdiction of MOSOC which has no experience and knowledge of port management..
- Neither IPC nor DGST has enough knowledge on management and supervision of port concession which led impartial concession contract and insufficient supervision of conceded terminal operators.

824. On the basis of the background mentioned above, the government promulgated the new shipping law which intends to separate regulator's function and operator's function of IPC and to establish new body as the regulator, Port Authority and Port Management Unit.

1.2. Objectives

825. Considering the background mentioned above, the objectives of introduction of new public-private partnership scheme to port development, management and operation can be said as follows:

- Increase operational efficiency
- Generate the system to recover state investment and to raise state revenue

[1] From p.33-34, ADB Developing Best Practices for Promoting Private Sector Investment in Infrastructure

- Create conditions for more efficient and accountable entities in port management and operation
- Create a more transparent and competitive port concession scheme consistently applied throughout the country for financially sound and efficient port development , management and operation

1.3. Basic Direction for the Establishment of New PPP Strategy

826. In order for creating better and workable system to introduce new public-private partnership to the port development, management and operation, it is necessary firstly to redefine the roles and functions of related organizations including KKPPI (National Committee for the Acceleration of Infrastructure Provision), RMU (Risk Management Unit), MOSOC (Ministry of State Own Company), MOT, DGST and PELINDOs currently involved in the PPP implementation of port sector, reform/amendment of the regulatory framework from currently applied one and institutional reform of related organizations including establishment of Port Authority solely responsible for management and development of each port for the promotion of PPP in general to more suitable and specific one to the development, management and operation of port.

827. New shipping law is stipulated mainly to separate the regulatory function and operation function of existing IPC aiming to more efficient and effective port development, management and operation, it does not, however, stipulate necessary regulation on the rules and procedures for the promotion of port concession.

828. Regulation related with PPP is stipulated in related government regulations in general form regardless of sectors, and they are not workable to PPP project on the port sector which has quite different characteristics from other public infrastructure project.

829. Port is generally composed as a group of various terminals including container terminal, general cargo terminal, bulk cargo terminal and often special terminal owned and operated by specific industry.

830. Basic facilities of port, such as breakwater, channels, and basins are commonly used by various vessels entered into the port and bound for respective terminals for cargo services as well as getting other services such as bunkering or ship repairing etc., and hence it is difficult to charge for use of these facilities by the terminal operator in case of teminalization scheme.

831. It is necessary to establish workable and effective strategy and regulations specific to port development and operation.

832. Principal issues to be incorporated in the PPP strategy on port sector are (1) clear definition of roles, function, powers and responsibilities of concerned parties related with port concession, (2) regulatory framework related with port concession, (3) institutional framework on supervision and management of port concession, (4) framework for consultation with maritime community, (5) basic policy and rules on bidding and contract management of port concession, (6) basic rule on port infrastructure pricing (concession pricing) and (7) strategy and scheme on human resource development for port management and operation. Basic direction of establishing new PPP strategy is shown in Figure 1.3-1.

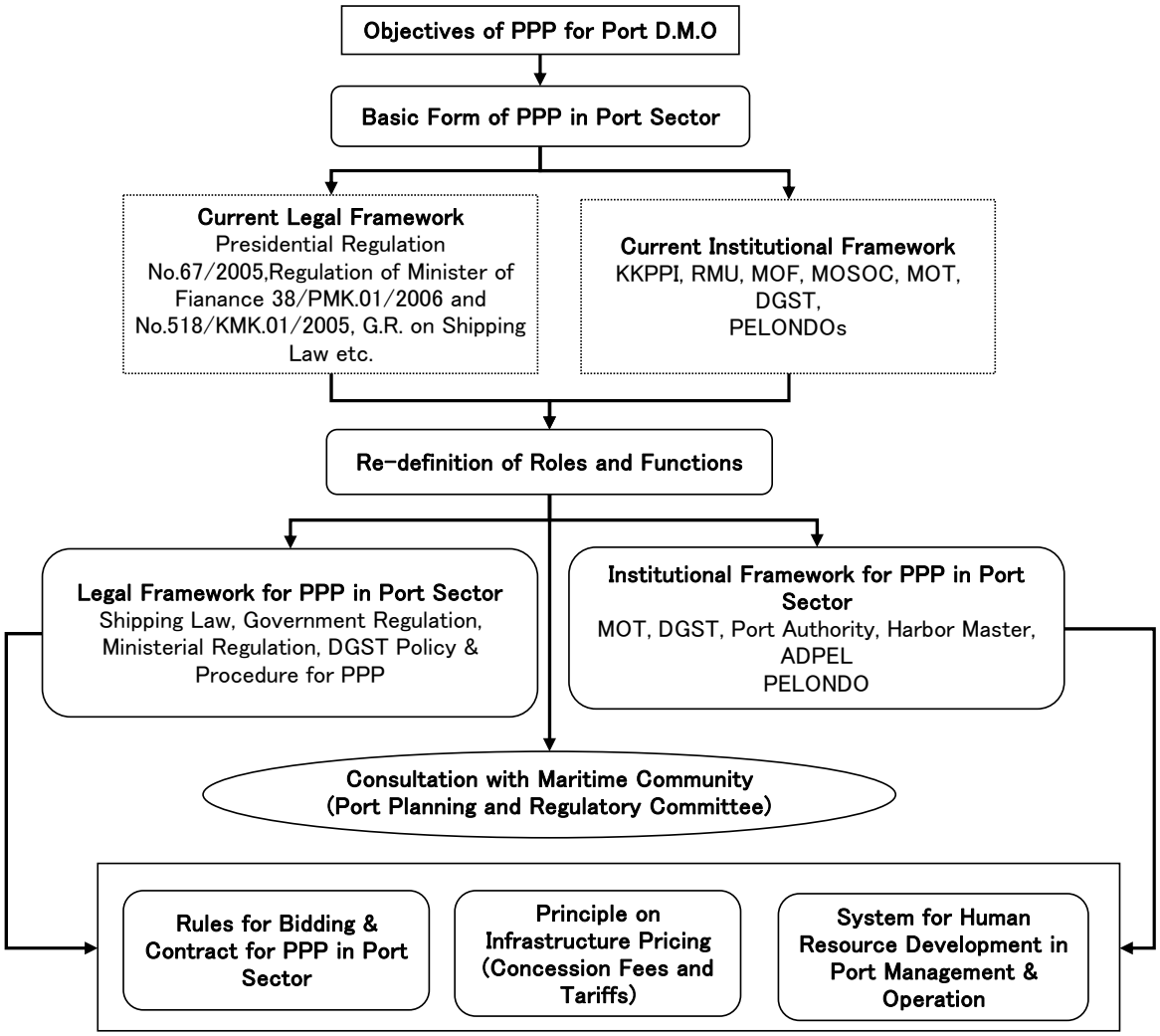


Figure 1.3-1 Basic Direction of New PPP Strategy

2. Principles on New PPP Strategy

2.1. Basic Form of PPP in Port Sector

833. In order for the port to function properly, there are lot of facilities and services to be provided for both of vessels and cargoes as is shown in Figure 2.1-1. Other services to provide utilities for the operation of terminal, to provide fire fighting services and other ancillary services concerning port operation will be needed and with the combination of provisions of all these services, port can function properly.

834. All these services will require various type of infrastructure such as access road, sewerage system, water and electricity supply system in addition to the fundamental port facilities such as terminal facilities.

835. In the presidential regulation No.67/2005 seems to be applicable to the case of power station, water supply system, railway and highway etc. which does not require related ancillary services like port, and hence it seems to imply the applicable PPP form of BOT.

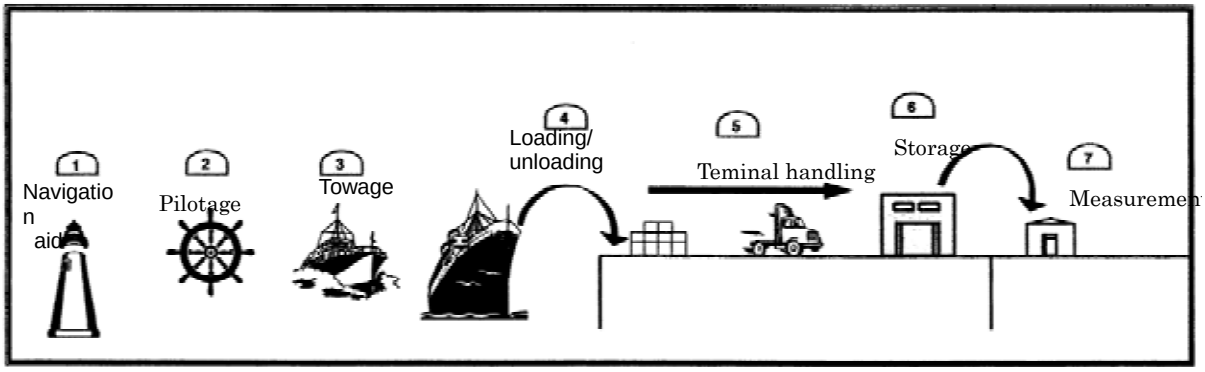


Figure 2.1-1 Services Provided in Port

836. In the port sector, various type of infrastructure will be required as is stated in paragraph 834, and it is not proper to limit the type of PPP to BOT.

837. In the case studies in this study, three types of PPP were analyzed. For the development of Bojonegara Port, initially GOI tried to tender so called master concession in which all the facilities including breakwater, channel and terminals will be provided and operated by the concessionaire resulting no bidders.

838. The result is considered to be quite natural considering the characteristics of fundamental infrastructure of breakwater and channel which are difficult to commercialize. When these facilities are to be commercially feasible, port dues and tariffs such as navigation safety fee and/or registration fee for entrance of vessels are forced to be set far expensive than other ports resulting less competitiveness of the port as is shown in the case study.

839. For the case of Tg. Priok rehabilitation project where rehabilitation is implemented to a part of whole pier which will be better to be operated as one unit of terminals after completion of all the rehabilitation work although result of financial analysis shows fairly high commercial viability. It involves schematic problems that rehabilitation has to be implemented step by step while rest part of the pier is required to provide for the general cargo handling until new general cargo terminal is developed in another location.

840. If the completed part is conceded to one business entity on the open tender base, and rest of the pier is also tendered to open tender base, then the first operator will face the operational difficulty during the rehabilitation works of the rest of the pier for the use of access way to the terminal as well as using ancillary services which is better to be provided at least for whole part of the pier by one business entity considering the scale of ancillary service business.

841. Hence it is better to lease the facility on a revocable agreement base rather than concession agreement with fixed term.

842. As to the case study of coal terminal in Kalimantan, purpose is to provide the facilities for the usage of small scale mining industries which do not have financial capability by itself to invest on the facility requiring huge amount of financial resource.

843. Hence, it is not suitable to tender on a competitive bidding system.

844. From these reasons, PPP in port sector needs rather variety of forms of PPP corresponding to the characteristics of port and facilities to be provided and master concession should be limited to rather small scale port in order to avoid the defact monopolistic behavior.

845. Table 2.1-1 shows the typical form of PPP provided in port sector.

Table 2.1-1 Port PPP Forms

Authority Type	Description
Agreement	Port-related services provided on port property
Concession Agreement	Commercial use of state property, long term agreements, typically 25-30 years or more, classified into partial concession and master concession according to the roles of public and private sectors
Lease	Fixed term leases typically 10-15 years
Order	Port infrastructure (streets, sewers, etc.) permit with public agencies
Revocable permit	Leases that may be revoked with 30-120 days notice. Typically of indeterminate length (temporary use of land/facilities, etc.)

(All cases of this study are categorized in the concession agreement.)

846. Shipping law No.17/2008 stipulate that provision of breakwater, channel and navigation aid is the obligation of the Port Authority and hence Port Business Entity is expected to provide mainly terminal and other ancillary facilities and services when it is expected to be commercially viable.

847. Hence, principles on new PPP strategy will be based on these applicable forms of PPP.

2.2. Principle on Regulatory Framework

848. Principle on regulatory framework for the purpose is as follows;

- The private sector participation scheme is open to competitive bidding
- The private sector participation scheme has to be in line with government policy
- The port authority/port management body becomes the owner and manager of a “landlord port”.
- The scheme will concern partial introduction of private sector in full or in part[2]
- The facilities/services will be managed and operated on a common user, non-discriminatory basis
- The operator of facilities has to be experienced in the activities to be carried out
- The bidder selected will set up a new local operating company
- Land ownership remains with the government or the public port authority/port management body
- Management and operational autonomy of the introduced operating company
- A priority objective of the private sector participation scheme is to boost performance levels maintaining the well balanced supply and demand condition of the facilities
- Another priority objective is the private funding of the extension of existing facilities or the construction of new facilities[3]

[2] Partial privatization is the form to render some of the port operation such as terminal operation to private sector, and in full means to render all the operation to private sector and in part means not all the operation.
[3] This part is partly quoted from “Guideline for Port Authorities and Governments on the privatization of port facilities”

2.3. Principle on Institutional Settings

849. In order for the system to effectively function following the principles mentioned above, proper and clear definition of legal status of the parties concerned is a must. Under the scheme of landlord port system, while the majority of the operational field functions are the responsibility of the terminal operators, there are various higher level hierarchical institutional functions that need to be carried out in order to support the activities in the field.

850. Increased private sector's participation in the delivery of port services should be viewed as an instrument to achieve well-defined public interest objectives. Thus, a key element in port reform must be the creation of a mechanism to protect the public interest[4] and make certain that the objectives of the reform are met. In creating such a mechanism, it is important to keep public statutory and regulatory oversight responsibilities separate from commercial activities as is stipulated in new shipping law.

851. Government oversight typically takes several forms: strategic planning, technical regulation, and economic regulation. Planning the future development of ports, and sharing those plans with private developers who can help implement them, is a continuing responsibility of governments.

852. Strategic planning aims at effective resource allocation guiding the rather huge investments both by introduced sector and state sectors to timely and well balanced supply-demand condition to maintain stable market condition.

853. Technical regulation of operation is required to ensure compliance with safety, labor, and environmental protection standards, as well as to set and monitor appropriate minimum performance requirements (especially when competition is week).

854. Safety is a major concern with ship movements in and around port mooring and berthing areas and with cargo handling operations ashore. Requirements for handling and storage of hazardous cargoes must be clearly spelled out in port regulations, and should be based on international conventions with due allowance for specific local conditions. The development and enforcement of operating rules and regulations represents another oversight responsibility that most public authorities assume or retain as part of their essential functions.

855. Economic regulation, which usually aims at monitoring market entry and pricing, is necessary when competition is weak or non-existent. Conversely, when significant competition develops, either internally or externally, the need for strong economic regulation on the operation decreases. Indeed, when competitive pressure is well-established and supply-demand of infrastructure is well balanced, there may be little reason to maintain any price regulation other than a requirement to publish tariffs, a continuing prohibition against undue discrimination against similarly situated port users, and retention of a mechanism by which the government can monitor the competitiveness of the market and investigate alleged anti-competitive activity. The level of competition faced by an individual port, therefore, has important implications for the nature and degree of regulatory oversight of port operations.

856. After introduction of non-state sectors' participation in the port operation, roles and functions among the parties concerned are generally demarcated as follows;

- A central body, either Ministry of Transport or the council comprising senior representatives from relevant ministries, municipalities of port cities, and from Port Authorities, would work

[4] There is a strong public interest in ensuring that ports operate efficiently and safely, that fair and competitive service are provided, and that the port support and foster economic development locally and nationally.

out national port policy and would establish the main sector regulations to be enforced by the Port Authorities/Port Management Body;

- The Port Authorities/port management body, autonomous public institutions, would be granted the right to use state-owned land, administer, maintain and develop port infrastructure assets, manage and enforce navigation safety measures, enforce environmental protection regulations, monitor the concessions and leases governing non state sectors' activities in the port area, and market the port to attract new investors; and
- The introduced operating companies would carry out commercial activities related to cargo traffic management and handling and market their services to attract new port users.

A. Roles & Functions of Ministry of Transport

857. In such a setting, the national body (Ministry of Transport) serves three key roles; 1) it establishes basic rules of participation to be applied by all entities, public and private; 2) it regulates the public port authorities, in particular with respect to their infrastructure pricing policies; and 3) it provides an appeal level for dispute resolution in case introduced sectors commercial operators believe they are unfairly treated by their local port authority and regulator.

858. In a market-oriented economic system the Ministry of Transport typically performs a variety of functions at a national level. With respect to coastline and port issues, the main tasks and responsibilities of the Ministry can be summarized as follows:

- Policy making. The Ministry develops transport and port policies related to:
  - Planning and development of a basic maritime infrastructure including coastline defenses (shore protection), port entrances, lighthouses and aids to navigation, navigable sea routes and canals;
  - Planning and development of ports (location, function, type of management).
  - Planning and development of port hinterland connections (roads, railways, waterways, pipelines).
- Legislation. The Ministry drafts and implements transport and port laws, national regulations and decrees. It is responsible for incorporating relevant elements of International Conventions (e.g., SOLAS, Law of the Sea, MARPOL) into national legislation.
- International Relations. Specialized departments of the Ministry represent the country in bilateral and multilateral port and shipping forums. The Ministry may also negotiate agreements with neighboring countries relating to waterborne or inter-modal transit privileges.
- Financial and Economic Affairs. A Ministerial department is usually responsible for planning and financing national projects. It should be able to carry out financial and economic analyses and assess the socio-economic and financial feasibility of projects in the context of national policies and priorities.
- Auditing. Auditing functions should be performed independently from the affected line organization and are usually included in a staff office. The auditors should report directly to the Minister.

B. Roles & Functions of Port Authority

859. Port Authorities/port management bodies often have broad regulatory powers relating to both shipping and port operations. It is responsible for applying conventions, laws, rules and regulations. Generally, as a public organ it is responsible for observance of conventions and laws regarding public

safety and security, environment, navigation and health care. Port Authorities also issue port by-laws, comprising a multitude of rules and regulations with respect to the behavior of vessels in port, use of port areas, etc. Often, extensive police powers are also part of Port Authorities' powers.

860. Oversight of nautical operations should be within a Port Authority's/port management body's mandate and is often referred to as the Harbormaster's function. It generally comprises all legal and operational tasks related to the safety and efficiency of vessel management within the boundaries of the port area. The Harbormaster's office allocates berths and co-ordinates all services necessary to berth and un-berth a vessel. These services include pilotage, towage, mooring and un-mooring, and vessel traffic services (VTS). In view of its general safety aspects, the Harbormaster's function has a public character. Often, the Harbormaster is also charged with a leading role in management of shipping and port-related crises (e.g., collisions, explosions, natural disasters, discharge of pollutants).

C. Roles & Functions of Terminal Operator

861. The cargo-handling and storage function comprises all activities related to loading and discharging seagoing and inland vessels, including warehousing and intra-port transport. A distinction typically is made between cargo-handling on board of the vessel (stevedoring) and cargo-handling on shore (landside or quay handling). Terminal operators can fulfill both roles.

862. There are two types of cargo handling and terminal operating firms:

- Firms that own and maintain all superstructures at a terminal (e.g., offices, sheds warehouses, cranes, forklifts, conveyor belts); and
- Firms that use superstructure and rolling stock owned by the Port Authority; such firms only employ stevedores and have virtually no physical assets.

Ancillary Service Provision

863. A variety of ancillary functions such as towage and ship-chandlering, fire protection services, linesmen services, port information services, and liner and shipping agencies exist within the port community. Large Port Authorities usually do not provide these services, with the exception of towage. In a number of smaller ports, however, these are part of the Port Authority operations because of the limited traffic base.

D. Special Consideration on Planning and Marketing Functions

864. The planning function of the Port Authority in co-ordination with the Municipality is a complicated affair, especially for large ports located within or near a city. The port planner has to consider:

- The consistency of his/her plans with the general terms of land use that have been set by the competent authority;
- The impact of port development proposals on the immediate surroundings (environment, traffic, facilities, roads, etc.);
- The appropriateness of port development proposals in the context of international, national and regional port competition.

865. Actual port services and balancing of supply and demand occur at the levels of the Port Authority and individual port firms. Hence, the development of realistic investment projects for infra-structure and superstructure should be initiated at these levels. Investment plans of industrial and commercial port operators or projects for specific cargo handling, storage and distribution should be integrated at the level of the Port Authority to arrive at a strategic master plan for the port.

866. The individual master plans may then be integrated into a national seaport policy, taking into account macro-economic considerations. Integration of individual master plans may call for changes in some ports' plans to:

- Avoid duplication of expensive, technologically advanced facilities when different ports in a national system strive to attract the same customers; and
- Select the appropriate location for specific seaport facilities that will interconnect maritime and land transport systems.

867. To conclude, central governments should establish a national port policy that supports national economic objectives and creates a reasonable framework for port development. The development of plans for specific port projects, however, should remain in the hands of port operators under approval of competent authorities.

868. The port marketing and promotion function is a logical extension of the port planning function. Port marketing is aimed at promoting the advantages of the entire port complex both for the Port Authority to attract new clients and for the ports industry to generally promote its business. This type of broad port marketing is distinct from customer-oriented marketing that is aimed at attracting specific clients and cargos for specific terminals or services.

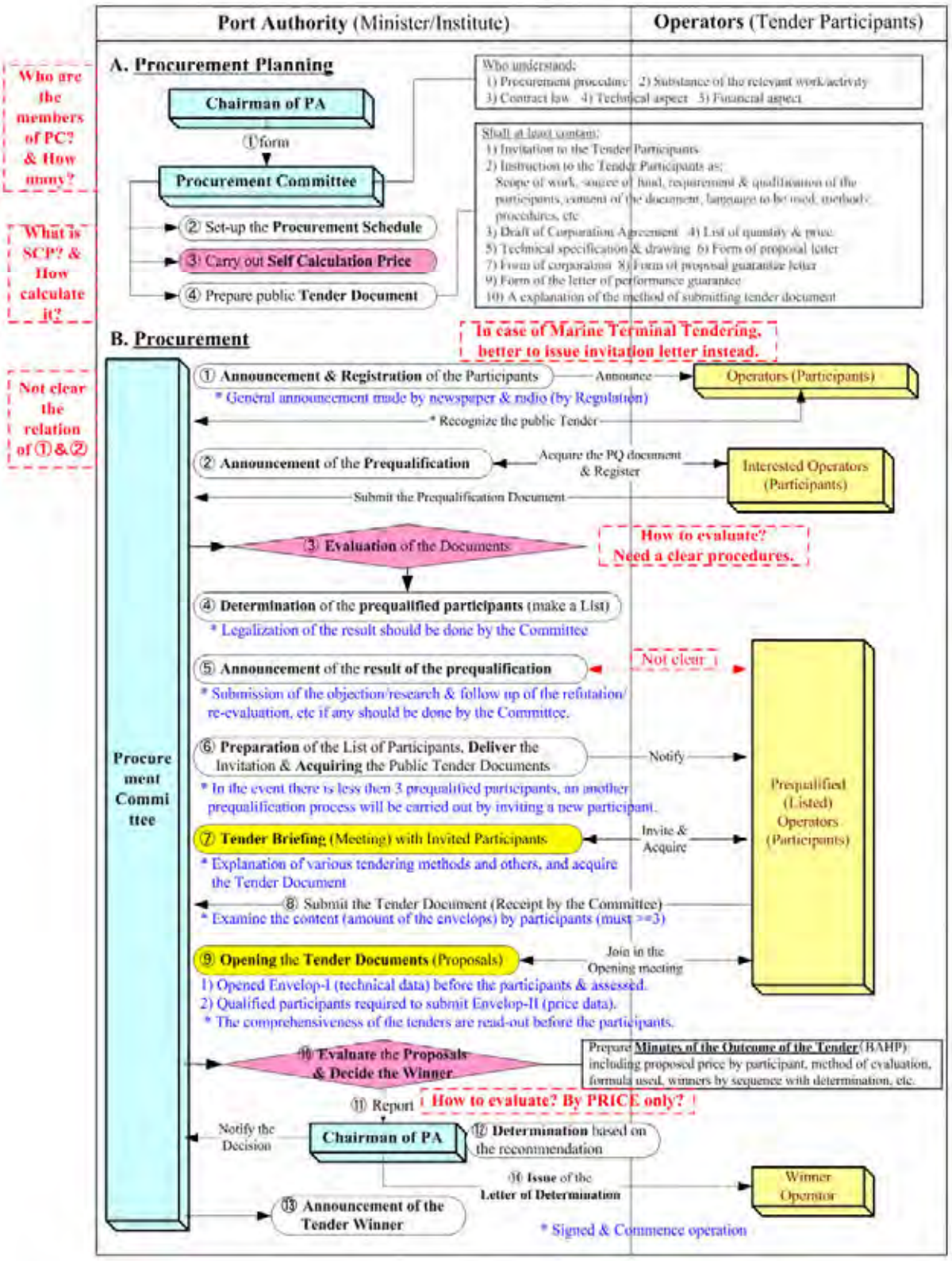
E. Special Consideration on the Roles and Functions of Central Government

869. As to the implementation of PPP scheme, there are many government agencies concerned in Indonesia.

870. Most basic regulation on PPP is the presidential regulation No.67/2005 which stipulate the basic rules on PPP scheme, and in the implementation of PPP scheme, regulation of Ministry of Finance No.38/PMK01/2006 and No. 518/KMK01/2005 are applied.

871. When these regulations are directly applied together with new shipping law, implementation procedure will become the following flow.

Business Entity Procurement Procedure within the Framework of a Corporation Agreement
(Indonesian Presidential Regulation No. 67, 2005)



872. In the promotion of PPP scheme, it is important to simplify the procedure for application of PPP scheme for the private sector and hence considering the role of central government and current

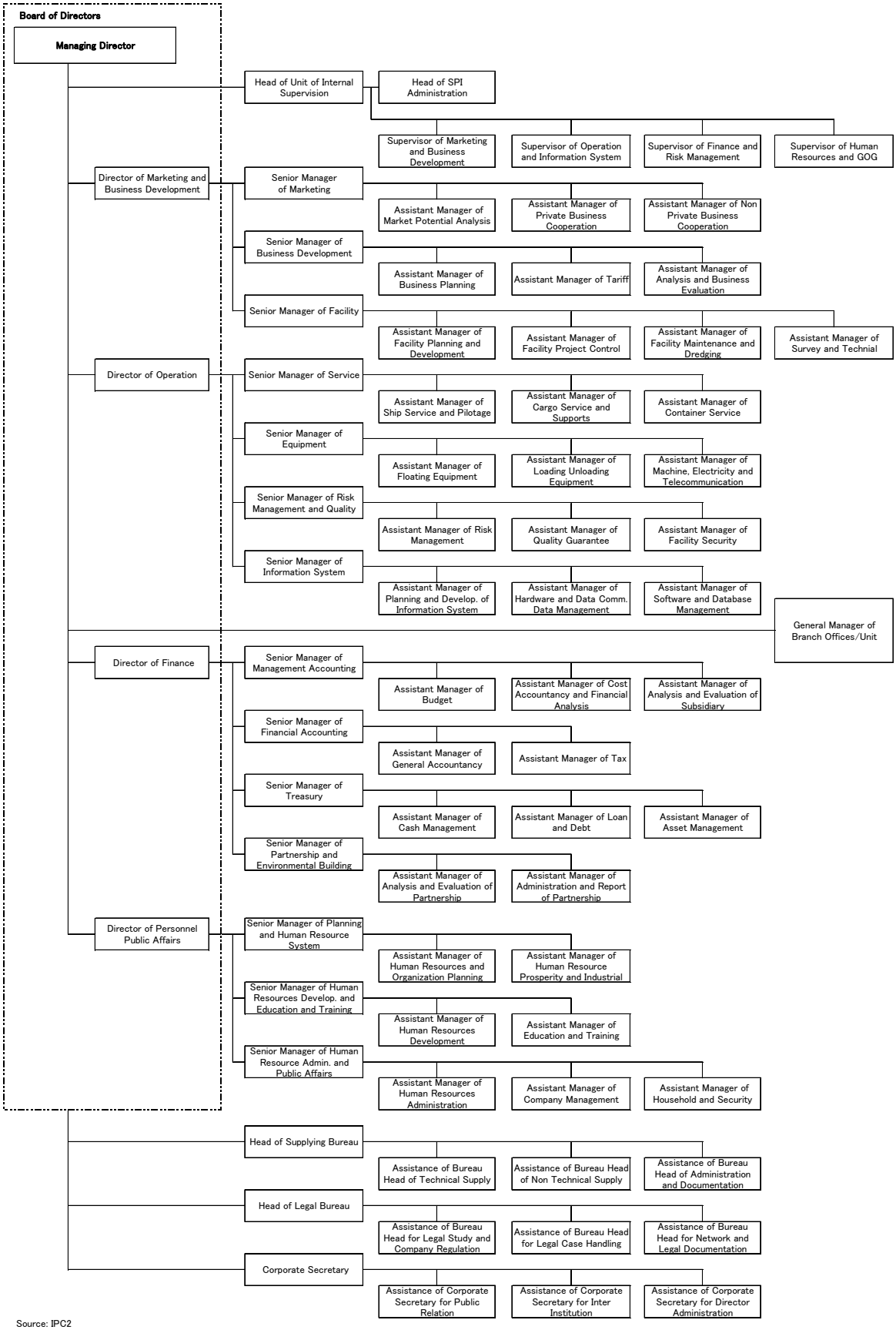
regulations on PPP, it is better to promulgate sector wise regulation taking into consideration of the new institutional settings in port sector as is shown in the implementation guideline for Government Regulation in Chapter VI..

F. Issues on the Reform of IPC

873. For the establishment of the Port Authority as a new regulatory and management body, Personnel with skill in port management (currently these people are concentrated in IPC) are required.

874. Currently major management work including entrance and departure of the vessels to/from the port and allocation of berths and all the procedure of using port is managed by IPC in commercial ports. After the establishment of the Port Authority, majority of these management works should be transferred to the Port Authority, otherwise it is natural for IPC to carry out these works in a manner favorable to IPC as the operator of its own terminal.

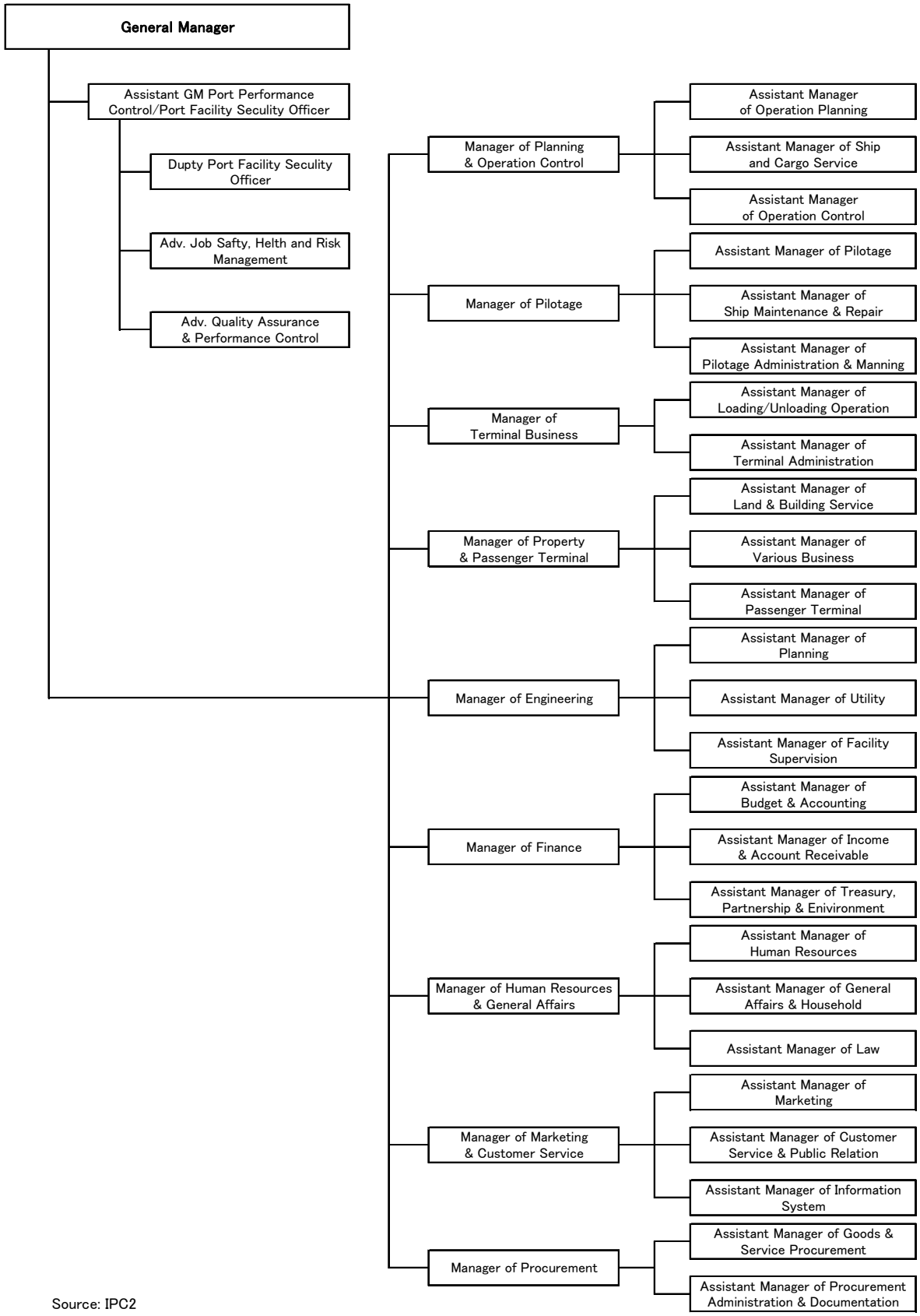
875. Figure 2.3-1 shows the organization chart of the head office of IPC2. Head office is managed by the Board of Commissioners and Managing Director, assisted by the Board of Directors, Corporate Secretary, Head of Internal Supervision Unit and Senior Managers of the various service and operational departments who are responsible for day to day management and operations. IPC2 head office has marketing & business, operation, financial and personnel and public affairs departments. There are about 2,700 permanent employees.



Source: IPC2

Figure 2.3-1 Organization Chart of Head Office of IPC2

876. Figure 2.3-2 also shows the organization chart of Tg. Priok Port Branch. Tg. Priok port is managed by the General Manager, who is assisted by Assistant General Manager of Port Performance Control / port facility security officer.



Source: IPC2

Figure 2.3-2 Organization Chart of IPC2'sTg.Priok Port Branch

877. Considering the separation of at least vessel service section, some sections under pilotage manager and under customer service manager of each branch of IPC could be merged in the Port Authority. With the difference in status of ADPEL and IPC employees, it may difficult to transfer the employees to the Port Authority, and hence it is recommended to second the employees of IPC to the Port Authority under the management of a special company for liquidation of IPC2 for some limited terms, say three years, to transfer necessary skills to the original staff of the Port Authority.

878. Another important issue on liquidation of IPC2 is abolishment of cross subsidizing system among IPC2 and its affiliate companies as well as all of the port branches under IPC2. In order to do so, careful analysis on the financial viability of the separated entities from IPC2 is needed and for the purpose of this complete corporatization scheme, special company for liquidation of IPC2 is necessary to be established under the supervision of MOT and MOSOC.

879. Function of special company for the liquidation of IPC2 should be maintained at least to the existing concession contract and joint operation contract with HPH on JICT and KOJA expire for smooth landing of corporatization of IPC2.

880. Final form of transformation/liquidation of IPC is shown in Figure 2.3-3.

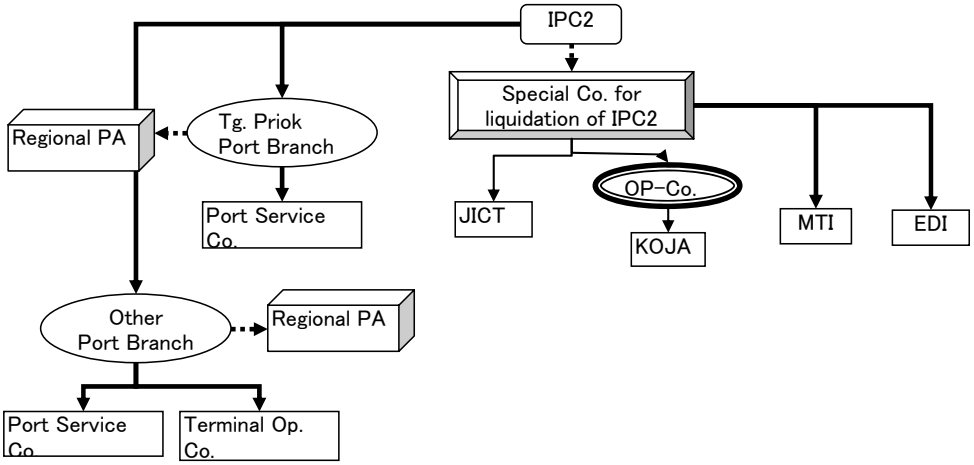


Figure 2.3-3 Transformation of IPC

2.4. Principle on Consultation with Maritime Community and Others

A. Need for Official Consultation with Maritime Community

881. In the execution of administration and management of port, decisions taken by the government, port management body and operators sometime seriously affect on various interest groups. Such decisions include operation rule of the port, tariff structure, land and water area use, designation of restrictive areas and port development plan.

882. In the management of concession contract, coordination among terminal operator/concessionaire, PMB/conceding authority and users is necessary. Especially for the resolution of complaints and conflicting opinions among the interest groups, study and deliberation by fair and independent institution is necessary.

883. Concession contract should precisely define monitoring and reporting relationship of the port management body (conceder) in line with the ministry and private operator respectively. Implementation guideline should also be established together with the contract.

884. In doing so, particular attention should be paid to the establishment of official consultation procedures between the private port and maritime community and the local public monitoring bodies (PMB). These consultation procedures will be important in making certain that customers' concerns and suggestions about the functioning of the ports can be timely and regularly channeled to the ports' management boards or to the sector regulatory body.

885. In the development of national/local port policy and plan, it is effective to involve major sectors of the ports community and local authorities as well through the deliberation of policy and plan by such institution.

886. Port administration may be centralized or decentralized. Each approach has its strength and weaknesses. Centralized administration permits a broader national economic and multi-modal perspective for directing port development policy.

887. Decentralized administration permits a more narrow local perspective that aligns port development with the economic interests and priorities of municipal or regional economies.

888. In order to balance national and local interests and reconcile both through deliberative processes, special institution can be formed, to which local port authorities report.

889. In addition, whether port regulatory responsibilities should be concentrated at the central level or decentralized to the local level should be looked at with two concerns in mind: 1) consistency of the approach with that generally followed throughout the country; and 2) the need for a transparent and efficient, user-friendly regulatory system.

890. The former would call for some sort of nationwide unit, likely at the ministerial level and the latter could lead governments to consider local (regional/province) regulatory units closer to the field and, therefore, better able to tailor decisions to meet local conditions.

B. Establishment of Ports Council

891. In order to satisfy the needs mentioned above, such institution as ports council is needed both for national level (Council for Minister) and local level (Council for the Chairman of PMB), and usually named as Ports Commission (or Ports Council) and established by law. Generally, such institution has an advisory role and provides input to the formulation of a national ports policy at national level and of individual port development plan and of by-laws of the PMB at local level.

892. National Commission/Council may be asked to contribute to the development of ports policy and plan by offering advice on:

- The prioritization of policies that will maximize private/non state sectors' participation in the port sector;
- The preparation of a national ports (restructuring and investment) plan based on an objective methodology for the evaluation of project proposals received from the port authorities (national level) ;
- The allocation of public sector funding for port development;
- The administration of an investment fund established specifically to finance port development;
- Measures to prevent monopolistic practices in the ports and to encourage competition; and
- The role of the maritime sector in the overall national transport strategy and national export policies.

893. Local Commission/Council may be asked to contribute to the formulation of port development plan and policy by offering advice on:

- The preparation of individual port plan based on an objective methodology for the evaluation of project proposals received from port investors;
- The allocation of public sector funding for port facility development;
- Setting and revising the port due and tariff;
- Formulation and amendment of port by-law;
- Establishment of restricted area such as port area and water front area;

894. In establishing such commission/council, formation of committee including number of committee member, term of membership and procedure of nomination, committee's authority and functions, and procedures of the committee should be clearly defined and made public.

895. Such committee shall generally have around 10 members with 3 or 4 years term and consists of representatives from related central government possibly from DGST, Ministry of Finance, Ministry of State Own Companies, the related province, users, maritime business, operators (concessionaire) and persons experienced in port planning, regulation and management of port and port engineering.

2.5. Investment Fund and Budgeting System

896. For the sustainable development of the port sector, it is necessary to secure the necessary financial resource to materialize the development planned in the port principal plan.

897. Investment on the port infrastructure will take certain period of time and needs coordination with the development of other related infrastructure including access transport which is in the responsibility of other government authorities.

898. It is, therefore, necessary to set up the investment program with identified financial resources for at least five year terms including government budget in coordination with competent ministries such as MOF and BAPPENAS through the deliberation in Port Planning and Regulatory Council.

899. In order to secure the necessary fund for the investment in the port sector, it is also necessary to establish a special account within the national treasury to meet the necessary investment schedule set in the 5 year development plan to avoid political influence and financial conditions of the time.

900. For the special account within the national treasury, it is also necessary to establish the fund for the part of revenue to the account in order to bear the accountability of the port sector.

901. These countermeasures for securing investment schedule of each port are a must to implement the PPP scheme which requires coordinated investment of the public and private sectors. Without such a clear milestone, private sector including those who provide him financial assistance will hesitate to bear any financial risk.

902. For the establishment of port investment fund, following shall be considered to be the revenue source of the fund:

A. Concession fee

903. In the new shipping law, it is stipulated that the concession fee is state revenue, but nothing more about the concession fee is stated.

904. Principle of public infrastructure pricing is mentioned in the following section. Concession is a concept to lease the port land area and water area for the use of terminal and give business conducting right to the concessionaire in case of BOT, and additionally lease basic terminal facility to the concessionaire in case of joint development of terminal by public sector and private sector.

905. Concession fee, in these cases, consists of lease rent of port water area and port land area, and basic terminal facility and royalty for business operation right in the port, which often takes the form of revenue share or profit share and these fees are basic revenue to the state and considered to be the main revenue source of fund.

B. Revenue of KANPEL and ADPEL

906. Currently port due including navigation aids due is the major source of revenue for KANPEL and ADPEL which is counted as the revenue of state treasury, while other charges including pilotage, towage and mooring fee etc. are revenues for IPC (some percentage of which is the revenue to the state).

907. In many countries, wharfage to vessels and cargoes are a kind of port due which is paid either to the Port Authority or to Government although it is charged to vessels or shippers by the terminal operator.

908. After establishment of Port Authority/Port Management Unit, ADPEL and KANPEL will be incorporated in the Port Authority/Port Management Unit and hence these port dues are also the major source of revenue for the Port Authority.

909. After establishment of the Port Authority, IPC will become a kind of Port Business Entity and thus in order to set a level playing ground to all the private service providers, it is necessary to restructure the framework of fees and dues and seek fair revenue source of the Port Authority and Port fund.

C. Revenue of IPC

910. Structure of revenue and expenditure of IPC2 is shown in Figure 2.5-1.

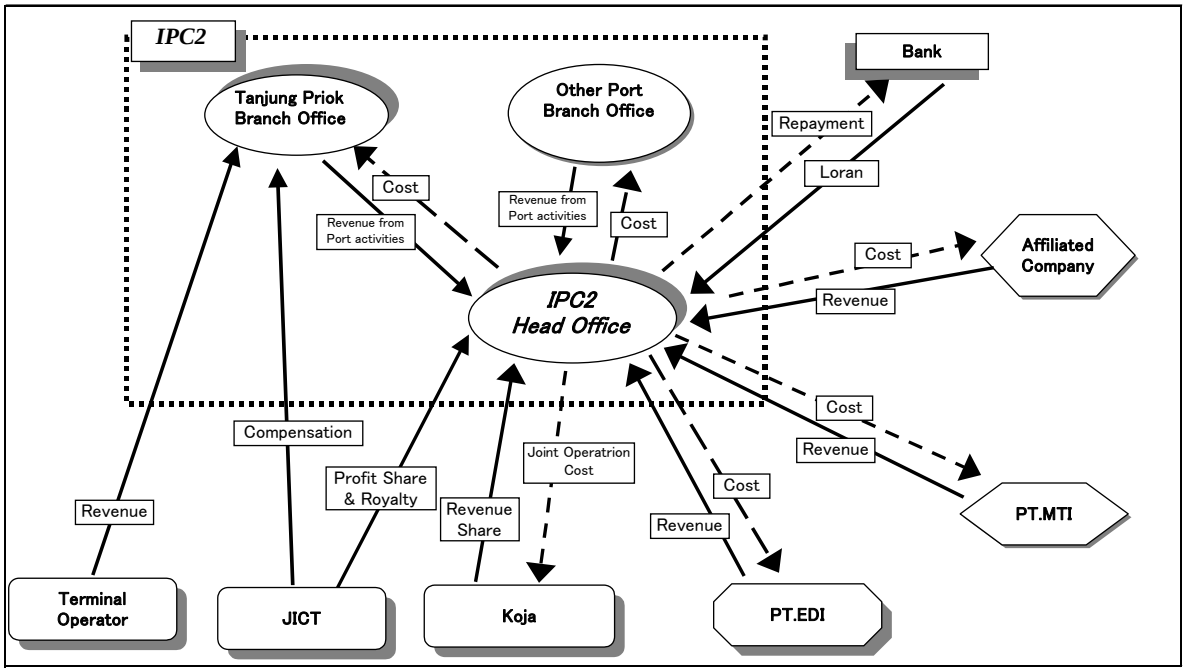


Figure 2.5-1 Revenue and Expenditure of IPC2

911. Financial condition of IPC2 and investment by IPC2 from 2003 to 2007 are shown in Table 2.5-1 and Table 2.5-2.

Table 2.5-1 Financial Condition of IPC2

Business Income	2003	2004	2005	2006	2007
Port Income	1,206,489	1,414,395	1,642,410	1,744,120	1,968,070
Subtotal	1,206,489	1,414,395	1,642,410	1,744,120	1,968,070
Business cost					
Labor cost	168,260	183,324	267,862	332,116	419,089
maintenance cost	169,339	182,562	227,007	237,652	210,971
Administration & General cost	161,979	127,416	202,854	248,640	316,568
Operation Cost(insurance, rental, material)	118,940	132,152	230,316	287,008	327,776
Miscillaneous Cost	216,679	256,956	59,921	86,483	87,587
other costs					
Subtotal	835,197	892,910	987,960	1,191,899	1,361,991
Operating Profit & Loss	371,292	521,485	654,450	552,221	606,079
Nonoperating Profit & Loss	(16798)	(144026)	(229802)	(182294)	(463833)
Profit before tax	344,496	377,459	884,252	734,515	1,069,912
Profit after tax	496,521	520,423	696,984	566,986	852,089

(million Rp)

Table 2.5-2 Investment Budget of IPC2

	2004	2005	2006	2007	2008
Building of Port Facility	2,071	2,097	425	13,286	22,557
Vessel	17,491	683	2,698	15,824	25
Equipment of Port Facility	0	0	0	0	0
Installation of Port Facility	243	1,372	2,556	7,587	5,538
Land	0	0	0	0	0
Road and Building	0	0	4,637	26,913	6,337
Equipment	0	0	0	0	1,376
Vehicles	736	0	0	3,362	0
Emplacement	0	1,149	0	0	0
Non physic	0	0	818	1,165	520
Actual Investment	20,541	5,301	11,134	68,137	36,353
Mult Year Investment	29,105	216	728	47,148	96,632
Carry Over Investment		8,725	1,670	7,259	10,054
Total Investment	49,646	14,242	13,532	122,544	143,039

(million Rp.)

912. There is no available recent data on the details of IPC2 revenue, and Table 2.5-3 shows the past data.

Table 2.5-3 Details of IPC2 Revenue

(000,000RP)

	2000		2001		2002	
Vessel Service	289,124	29%	415,184	31%	389,496	28%
Piling Facilities	51,499	5%	62,170	5%	58,491	4%
Equipment	0	0%	31,674	2%	30,001	2%
Terminal Service	76,622	8%	66,673	5%	47,702	3%
Container Service	72,055	7%	100,603	8%	117,898	8%
Land building	38,403	4%	40,161	3%	66,675	5%
Special Berth Port	40,865	4%	38,575	3%	23,353	2%
Other Facilities	57,440	6%	66,556	5%	73,912	5%
Compensation from JICT	37,012	4%	53,113	4%	51,153	4%
Joint Operation (Koja)	141,268	14%	203,636	15%	208,000	15%
MTI	0	0%	0	0%	34,184	2%
Affiliated Company	78,669	8%	89,387	7%	103,465	7%
Revenue Reduction	-119,824	-12%	-140,126	-11%	-113,857	-8%
Royalty of JICT	78,750	8%	115,182	9%	110,393	8%
Profit Share from JICT	126,804	13%	175,162	13%	153,458	11%
Others	26,430	3%	6,520	0%	48,606	3%
Total	995,117	100%	1,324,470	100%	1,402,930	100%

913. As is shown in Table 2.5-3, about 30% of its revenue comes from the vessel services, which are not usually provided by the terminal operator. Vessel service such as pilotage and towage is a common service to the vessels using various terminals in a port and thus it is better to separate it from the terminal operator's business to avoid allegation of bias.

914. IPC2 is also playing the role of landlord as a conceding authority while it operates other terminals through joint operation contract and by its affiliated company. In the context of the royalty as the compensation for the business operation right in the port, it should be paid to the Port Authority which manages, controls as well as sales the port as a whole.

915. Another issue to be reformed is the practice of cross subsidies among the businesses under control of IPC. Each terminal should be operated with financial independence for securing fair competition among the operators.

916. It will be difficult to liquidate IPC without perspective on the financial and operational independence of currently operating departments including its affiliate companies. It is, however, necessary to provide the fair play ground for competition among the operators even with the state own companies.

917. For seeking the measures of soft-landing of liquidation of IPC, it is the first step to introduce independent accounting system for each business filed of IPC and Port Authority should supervise IPC's business conduct in the context of fair competition among the operators.

918. Second step to the liquidation of IPC is to separate the MTI and other affiliate companies operating port business except JICT and KOJA which are operated under concession agreement with authorized period of 20 years since 1999 and 2000 respectively. Until the expiration date of these agreements, IPC is maintained as the status of the entity to implement its rights and obligations specified in respective agreements and under supervision of MOSOC and MOT only for its implementation of these agreements.

919. Other branches of IPC could be separated from IPC as the independent operators with license from Port Authority.

2.6. Principle on Infrastructure Pricing

A. General Idea on Concession Fee

920. The concession fee mechanism typically has a fixed and variable component. The fixed component can be a fee equivalent to a rent paid by the operator to the port authority for the use of land and facilities/utilities provided by the public sector. This fee also incorporates profit sharing; i.e., the rental fee effectively includes an element to reward the conceding authority for permitting the operator to profit from the operation of the terminal.

921. The variable component of the compensation to the conceding authority can be a payment by the operator of a fee based on the level of activity. This includes a minimum traffic threshold that can be used to share the traffic risk and indemnify the operator if the level falls below the predefined threshold. This latter approach may be most appropriate when there is significant uncertainty about the potential traffic moving through the terminal and when conceding authority desires to impose tight technical and pricing regulations.

922. Experience shows that this fee level and any escalation clauses should be decided as part of the concession contract and should be based on traffic levels rather than the degree of profitability for the operator.

923. The port authority could choose to set the initial level for the fixed and variable components of fees. However, these levels represent the most frequently adopted financial criterion for judging bids and, therefore, preferably should not be set by the port authority, but left for the bidders to propose.

B. Criterion to Estimate the Probable Level of Fees

924. In order to know the acceptable level of fees, it is necessary to assess financial return from the project, though the bidders are required to propose their own business plan showing their estimate of marketability and financial return.

925. In estimating acceptable level of concession fees, it is necessary to conduct detailed market analysis, financial analysis and estimating financial contributions both to the government and concessionaire.

926. In the assessment of financial viability and developing business plan for the container terminal, most basic and important information is the potential market of container transport. Estimation of market scale which the port can expect considering the competitiveness in the region should be conducted as detail as possible in identifying transshipment, local cargo, FCL, LCL, empty container, since these characteristics of cargo influence the revenue of the port via different tariff levels with these characteristics.

927. Usually, this kind of estimation is conducted at the stage of feasibility study of the project. However, sensitivity analyses to the different level of tariffs, productivity, service level (custom clearance, pilotage and towage, etc.) are not conducted. However, in assessing business viability, more detailed sensitivity analysis should be conducted based on more realistic assumptions.

928. Especially, in the case that the concessionaire is a major shipping line, expected volume collected by the operator will have more accuracy based on the realistic strategy of the shipping line.

929. In the financial analysis, sensitivity analysis should be conducted on the basis of different scenario on tariff setting, terminal productivity, operating cost such as personnel costs, spare parts supplies and materials, fuel and utilities, depreciation, insurance, management service fee in case of outsourcing management, bad debt level, professional service cost, system and communication cost, office supplies, other general and administration cost and interest expenses based on the operational situation by the private entity.

930. Based on these realistic assumptions, financial estimation should be conducted for the whole period of concession. Estimation of financial viability should be conducted based on projected cash flow, projected net assets position, return on equity, dividend on equity invested on the basis of projected risk sharing scheme.

931. Possible level of concession fees are greatly influenced by the risk sharing scheme, especially of capital expenditure shares (investment share between conceding authority and concessionaire). Therefore, it is desirable to conduct financial assessment together with decision making of investment sharing scheme.

932. After the sensitivity analysis on financial viability, level of concession fee shall be decided based on the net present value of the profit during the concession period. It is desirable to set the concession fee comprised of fixed fee which is basically the lease rent of the land and facilities calculated based on the investment incurred by the conceding authority including interest payment of the loan, and variable fee which is basically called as royalty or good will and calculated based on the above mentioned net present value of the profit which is paid periodically certain percentage distributed over the concession period.

933. The study team proposes following financial indicators to assess financial viability of the projected risk allocation scheme, taking concession fee level and commercial factors including tariff level and throughput as variables.

- FIRRs of conceding authority and concessionaire: this is the indicator to assess the financial viability of the project. The FIRR is the discount rate that makes the discounted costs and revenue over the project life equal, i.e. the rate "r" that satisfies the following formula:

$$\Sigma (B_i - C_i)/ (1+r)^{i-1} = 0$$

Where B_i: Revenue in the i-th year
C_i: Cost in the i-th year
r: Discount rate

In this calculation, fund management income is excluded from the revenue and depreciation cost, repayment of the loan principal and interest on loans are excluded from the costs.
When the FIRR exceeds a certain threshold, the project is considered to be financially viable. The weighted average of the interest rates of various funds generated for the project is used as the threshold.

- Net Present Value (NPV) Ratio of Gross Profit to Turnover based on the assumption that the port is to be operated by the port authority itself. It is assumed that the operation by the concessionaire will be more efficient than the operation by the port authority and hence, the operation by the port authority is conducted at the higher tariff level with less amount of throughput.
- Return on Net Fixed Asset: This is the indicator to assess the profitability of the project and calculated by (Net operating Income)/ (Total Fixed Assets) x 100%. It is necessary to keep the rate higher than the average interest rate of various funds for investments, which have different interest rates.
- Operating Ratio = (Operating Expenses)/(Operating Revenues) x 100% and Working Ratio = (Operating Expenses – Depreciation Expenses)/(Operating Revenues) x 100 %. The Operating Ratio shows the operational efficiency of the organization as an enterprise, while the Working Ratio shows the efficiency of the routine operations. When the Operating Ratio is less than 70~75% and the Working ratio is less than 50~60%, the operation of the organization is assessed to be efficient.
- Debt Service Coverage Ratio = (Net Operating Income + Depreciation Cost)/(Repayment and Interest on Long-term Loans). This indicator shows whether the operating income can cover the repayment of both the principal and the interest on long-term loans. The ratio should be higher than 1.0 and is desirable to be higher than 1.75.

C. Principle of Investment Cost Recovery and Concession Price

934. Investment in unprofitable basic facilities of which user is difficult to specify and to decide the reasonable level of charges such as breakwater, channel, basin, navigation aids etc. is borne by the state either from its general budget or foreign loan.

935. Initial investment cost on conceded facilities is recovered from the fixed portion of the concession fee set to enable to repay the loan (principal and interest) according to loan condition. When it is from state fund, amount of the fixed portion of the concession fee is decided in the same manner as most favorable loan condition by international financing institutions.

936. A part of profit is paid to the Port Authority (for the necessary administrative expense of port authorities even from the investors like IPC other than Port Authority) through the variable portion of the concession fee as a royalty to operate the terminal through profit sharing system; the amount is decided based on the assessment of the financial viability of both the concessionaire and port authority and proposed business plan by the concessionaire.

2.7. Principle on Rules for Tender and Contract of PPP in Port Sector

937. In order to manage the port under the concession scheme, it is necessary for the Port Authority to provide a level playing field to all concessionaires and manage the concession contract to secure the implementation of rights and obligations of the parties of contract.

938. Most important issue for realizing a fair and transparent concession is to make clear the responsible organization and procedure for tender and evaluation to guide the Port Authority in DGST's official document.

939. Summary of the procedure for concession to be stipulated in the above document is shown in Figure 2.7-1 and Figure 2.7-2.

940. Sample documents to stipulate such procedure is shown in Chapter VI for implementation guideline for Government Regulation:

Bidding Evaluation : Guideline for PPP Promotion

(How to make a satisfactory Concession Contract with a preferable Operator: Micro-1)

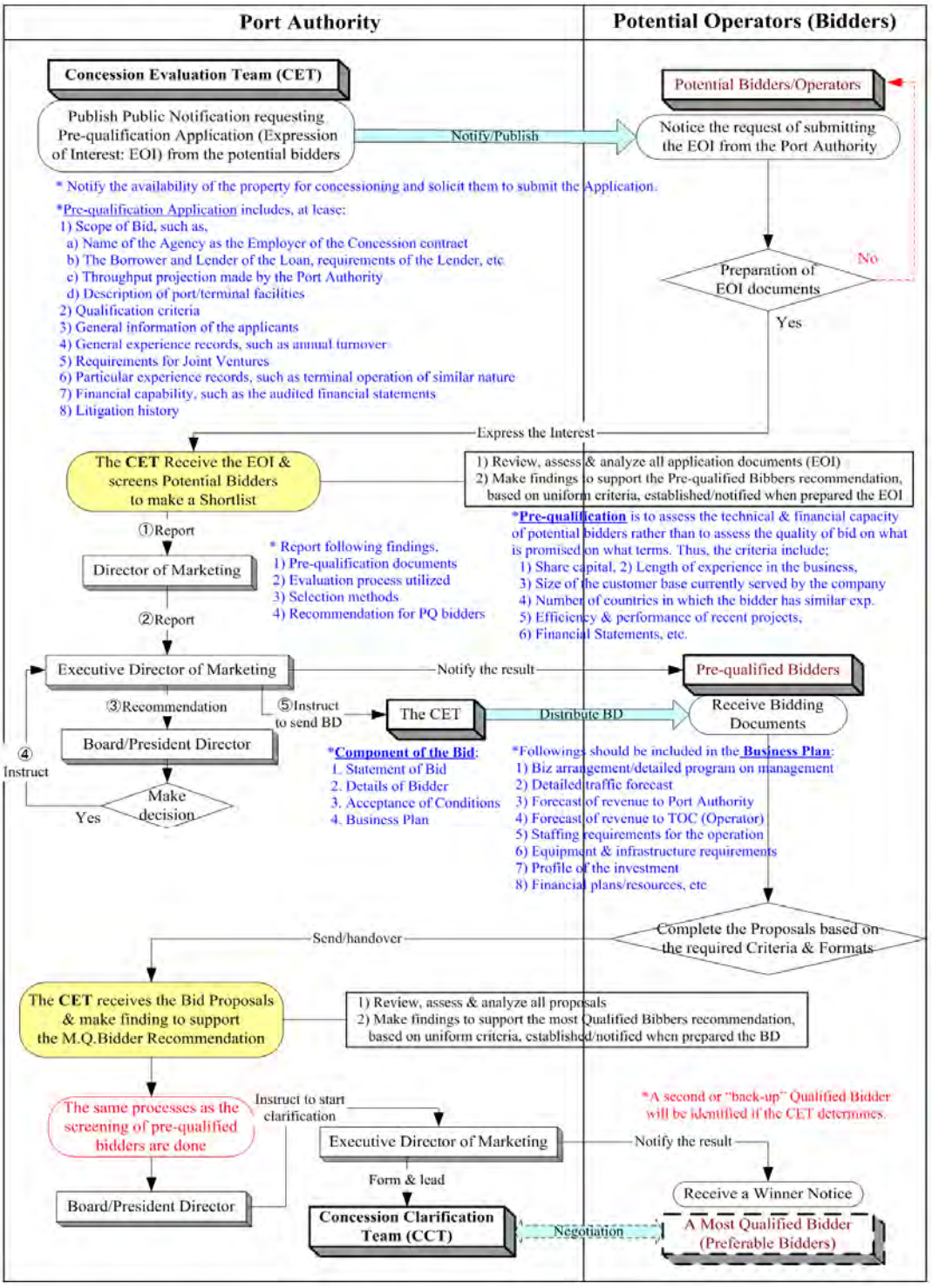


Figure 2.7-1 Bidding Evaluation

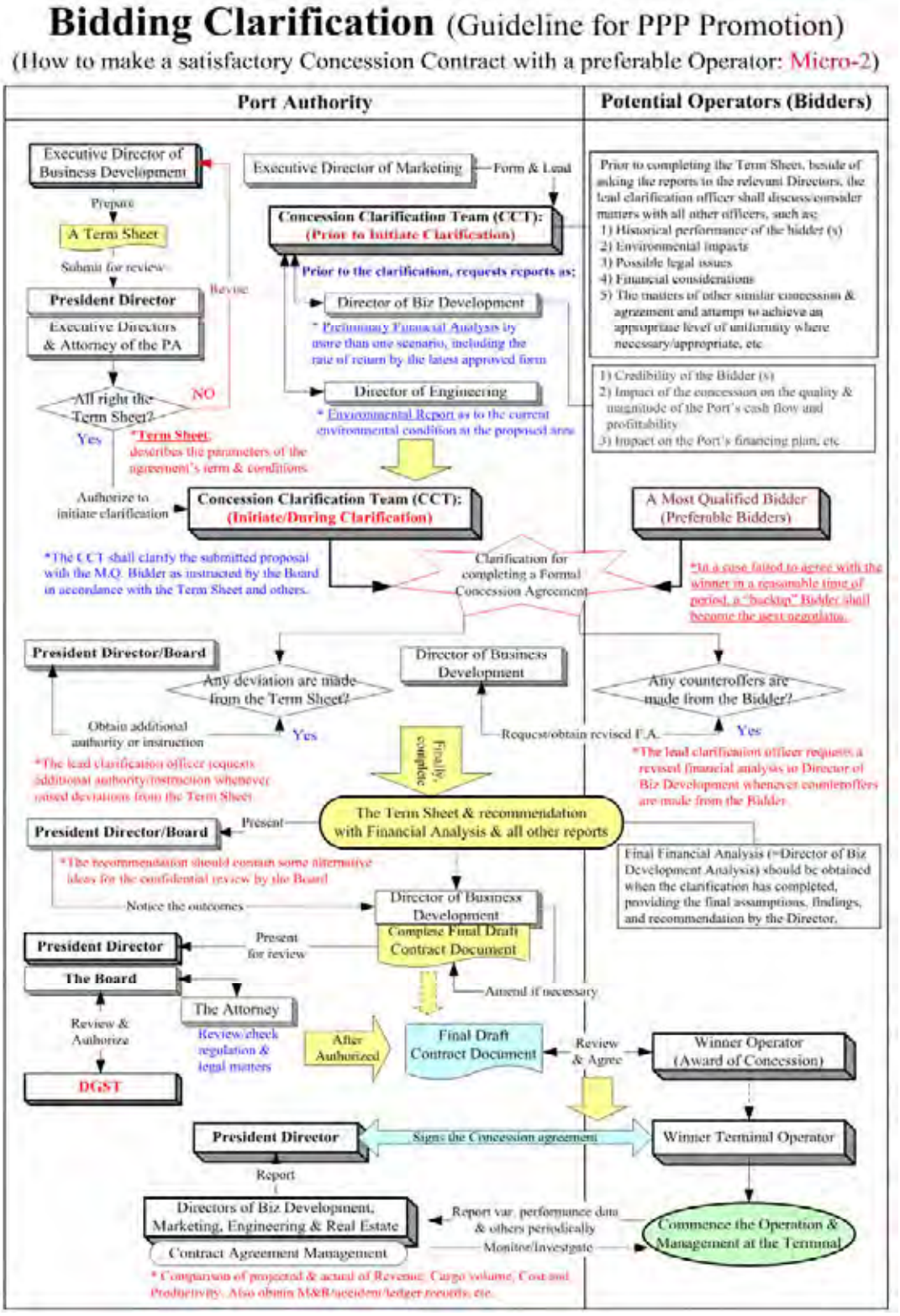


Figure 2.7-2 Bidding Clarification

2.8. Principle on Human Resource Development

941. Port labor -from crane and equipment operators to stevedores to harbor pilots is a key to success or failure in today's competitive port and international trade environment.

942. Over-stuffing, outdated and inefficient work rules, poor skills and training, inflated pay scales, and unreliability are among the most prominently cited problems contributing to high costs and inefficient operations. Outdated management practices can sometimes add to these problems by overlooking the benefits of more participatory approach to port management.

943. In numerous countries, existing port labor regimes, collective agreements, and management and labor practices are inflexible, outdated, and inefficient. Consequently, they hinder the development of the type of commercial and operating environments that ports require to respond to the increasing demands of customers and competitive markets. Governments, as a result, must appraise, in consultation with other port stakeholders, the extent to which labor regimes, collective agreements, and labor and management practices serve as a barrier to the achievement of the port's commercial goals.

944. In addition to the social aspects of the labor issue, there is another factor to make the non-state sector, especially foreign operator, hesitate to participate in the port service market. Regulatory system which is originally constructed in purely domestic labor environment often becomes inappropriate to the situation where the port services market is open to the foreign entities.

945. There is few cases in which the port labor issue is claimed by the customers so far in Indonesia, partly because current port operation is mostly conducted by the state own company, IPC. It is, however, acknowledged that Indonesian ports have a shortage of qualified professional port managers, engineers and supervisors as well as labors including stevedores to cope with the advanced and modernized port operation system.

946. Hence, this strategy provides also the basic direction of labor reform in the port management and operation.

A. System of Human Resource Development for Port Service

947. Port labor reform is a balancing act taking into consideration worker's rights and social equity, port users' and operators' commercial needs, the need to foster competition, and interaction between governments and port interests.

948. Establishing inter-port, intra-port, inter-union, intra-union, and non-union competition is a key to addressing shipping and port companies' needs for improved productivity and cost effectiveness.

949. In order to maintain a labor environment favorable to market oriented terminal operation, job security should be obtained by responding to market mechanisms. This creates a need for formal training programs, multi-skilling, willingness to accept new technologies and commonality of goals among port customers, employers and dock labor.

B. Establishment of Port Labor Law

950. In order to procure the necessary human resource in the port sector and balance the demand and supply of human resource, establishment of the port labor low/act for securing port skilled workers may be effective.

951. Substance of the port labor law is to secure skilled workers through improvement of employment environment and workers' capability and Government shall formulate a plan for sustainable employment.

952. The plan shall include;

- current status of employment condition
- target of supply and demand
- preparation for training course

953. For securing the implementation of the plan, port sector entities should secure employment opportunities and train manpower and Government should subsidize to private sector entities and train manpower.

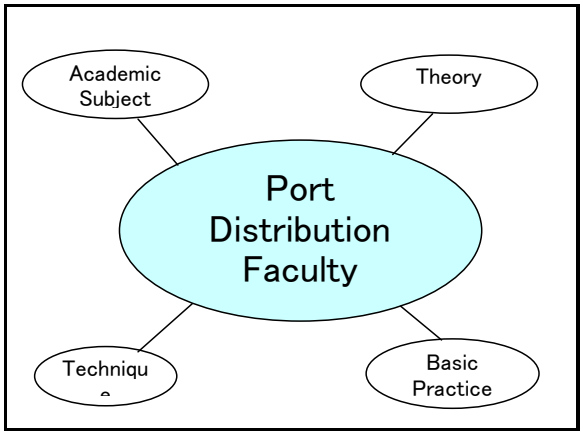
954. Some responsible organization to oversee compliance with the law by the private company/ public joint-stock company may be necessary.

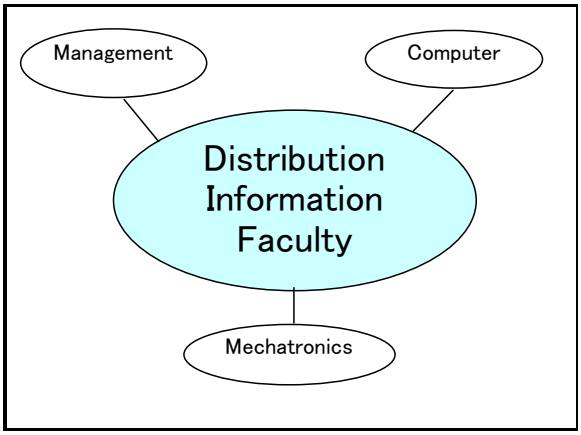
C. Establishment of Port Labor Training Institution

955. Although various maritime university and maritime schools are established to provide skilled human resource, it is said to be insufficient because most of them do not seem to have course specialized in port operation and management except STIP Jakarta which has port and shipping management faculty and also because of their wider coverage of training programs lacking concentrated training in skills and knowledge in the port sector. Necessary skills and knowledge for port labor are wide range even in the port sector, from management of port and trade to operation of port..

956. Hence training of port labor from management level to operation level needs trainers with various knowledge and skills, and special equipment to train laborers on the operation of various types of cargo handling machines and equipment. It is inefficient for each entity concerned with port management and operation to facilitate its own training tools.

957. Therefore, establishment of national port college to increase the number of skilled port workers may be another alternative. The port college should have two courses; port distribution faculty to train for the maritime frontier, second distribution information faculty to train for the logistics engineer.





(i) Port Distribution Faculty

958. Objective is for trainers to acquire knowledge on distribution of port cargo including custom clearance and technologies for the port operation including cargo handling.

(ii) Distribution Information Faculty

959. Objective is for trainers to acquire knowledge and skills on logistics management, mechatronics and computer operation for port operation.