PT PELABUHAN INDONESIA III (PERSERO)



39th ASEAN PORTS ASSOCIATION (APA) MEETING

GREEN PORT & CLEAN SEA

Past, Present & Future

12-15 November 2013

Discovery Kartika Plaza Hotel, Denpasar - Bali

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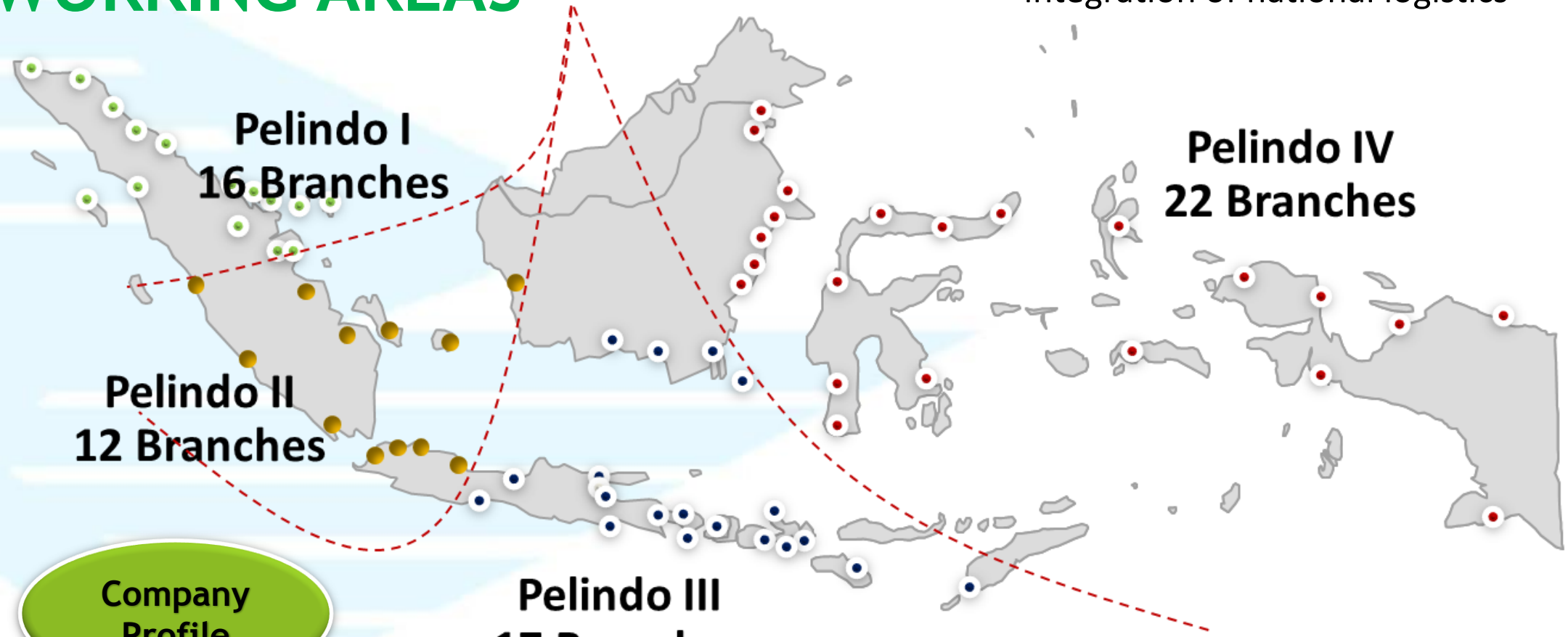
2. Pelindo's III Green Policy and Regulation
3. Effort Of Minimizing Environmental Impact In Port Operation
4. Port Environmental Protection Initiatives
5. Other Port Environmental Protection Initiatives

VISION

To be an excellent Port services provider and committed to drive integration of national logistics

WORKING AREAS



EAST JAVA
Surabaya
Gresik
Probolinggo
Banyuwangi

CENTRAL JAVA
Semarang
TPKS
Cilacap

BALI
Celukan Bawang
Benoa

WEST NUSA TENGGARA
Lembar
Bima

EAST NUSA TENGGARA
Maumere
Kupang

CENTRAL OF KALIMANTAN
Sampit
Kumai

SOUTH OF KALIMANTAN
Banjarmasin
Kotabaru

Company Profile

IMPLEMENTATION OF GREEN PORT AND CLEAN SEA

PELINDO's III GREEN POLICY

1. Commitment To Improve HSE Quality (Zero Accident)
2. Protect The Community From Harmful Environmental Impacts Of Port Operations.
3. Promote Sustainability Development And Compliance To Environtmental Regulation (Eco Port)
4. Employ Best Available Technology To Reduce Environmental Impacts (Green Technology)

COMPLIANCE WITH GOVERNMENT REGULATION OF ENVIRONMENTAL

1. Government Regulation No. 18/1999 : Hazardous Waste Management
2. Environmental Ministrial Regulation No. 03/2007 : Reception Facility (RF) in Port
3. The Law No. 32/2009 : Environmental Management and Protection
4. Government Regulation No. 27/2012 : Environmental Permit

GREEN PORT Concept

Is a concept in which the planning and operation of port should emphasize on environmental impact management on its port

The `Green Port' concept is gaining importance in various countries, including Indonesia

Ports Are Designed To Minimize The Overall Impact To Human Health And The Natural Environment By:

- ❑ Energy And Other Resources Consumption Efficiency
- ❑ Safety And Health And Improving Employee Productivity
- ❑ Reducing Waste, Pollution And Harmful Environmental Impact

In order to ensure environmental sustainability, PT PELINDO III implements an **ENVIRONMENTAL MANAGEMENT SYSTEM** (EMS) ISO 14001:2004.

PORT OF TANJUNG PERAK

PORT OF TANJUNG EMAS

CONTAINER TERMINAL SEMARANG

PORT OF BENOA

PORT OF BANJARMASIN

PORT OF TANJUNG INTAN

MINIMIZING ENVIRONMENTAL IMPACT IN PORT OPERATION

1. Provide Reception Facility (RF)
2. Using Green Energy By Converting Diesel Engine to Electric Motor (Electrification Programs) In Port Handling Equipment (CC, RTG)
3. Perform The Water And Energy Savings Innovation Steps Based On Energy And Water Savings Policy, For:
   - Lighting And Air Conditioning Of Office Building (LED Light 70% & VRF AC 40% Less energy consumption)

PROVIDE OPEN SPACE FOR GREEN BELT

Compliance with government regulations no. 26/2007 about Detailed Urban Planning explained at least 30 percent of total amount of the area is used as a open space

GREEN OPEN SPACE IN PORT OF TANJUNG PERAK

GREEN OPEN SPACE IN PORT OF TANJUNG EMAS

QUICK RESPONSE TO ENVIRONMENTAL IMPACT

According to EIA (Environmental Impact Assesment) document, environmental monitoring system has conducted monthly (sea water quality).
Each parameters which exceed the quality standard will be evaluated and handled.

Environmental monitoring

Using dispersant for oil spill on surface water

PERIODIC SOCIALIZATION FOR GREEN PORT AND CLEAN SEA

Socialization through partnerships and community development programs

Corporate Social Responsibility (CSR)
Bridge in Temporary Access to Accommodate Fishermen's Activity

PORT OF TANJUNG PERAK

RECEPTION FACILITES

Port of Tanjung Perak provides Reception Facilities to meet the requirements set out in the EIA document.
According to Environmental Ministrial Regulation No.03 of 2007 about Hazardous Waste Storage Facility Collection

WASTE MANAGEMENT SYSTEM IMPLEMENTATION

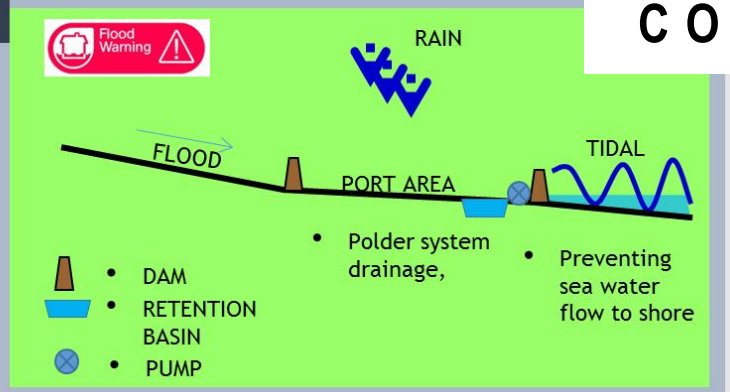
PORT OF TANJUNG EMAS & CONTAINER TERMINALSEMARANG

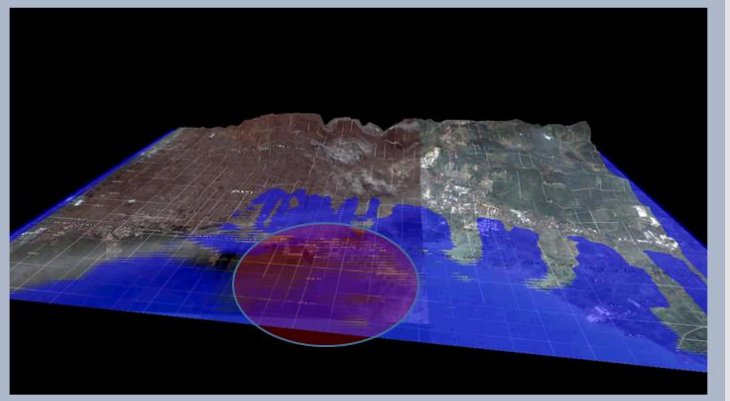
PT PELABUHAN INDONESIA III (PERSERO)

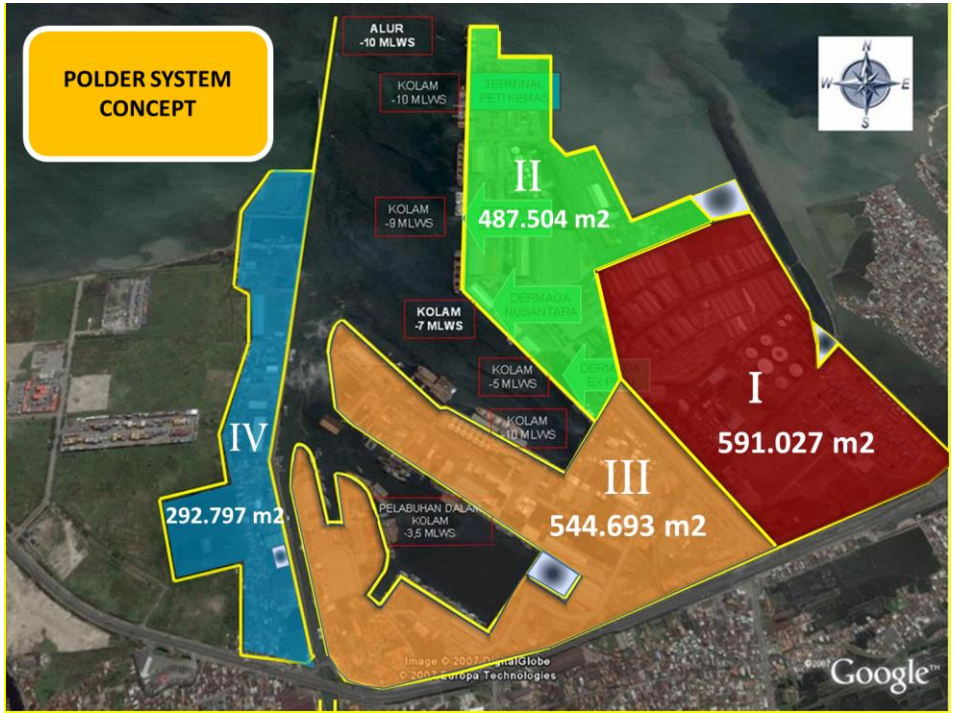
POLDER SYSTEM (SEMARANG)

To protect port facilities from damage due to sea-level rise and land subsidence.

Integrated with Flood Controlling System by Municipal of Semarang City.







Port Environmental Protection Initiatives

Container Handling Equipment

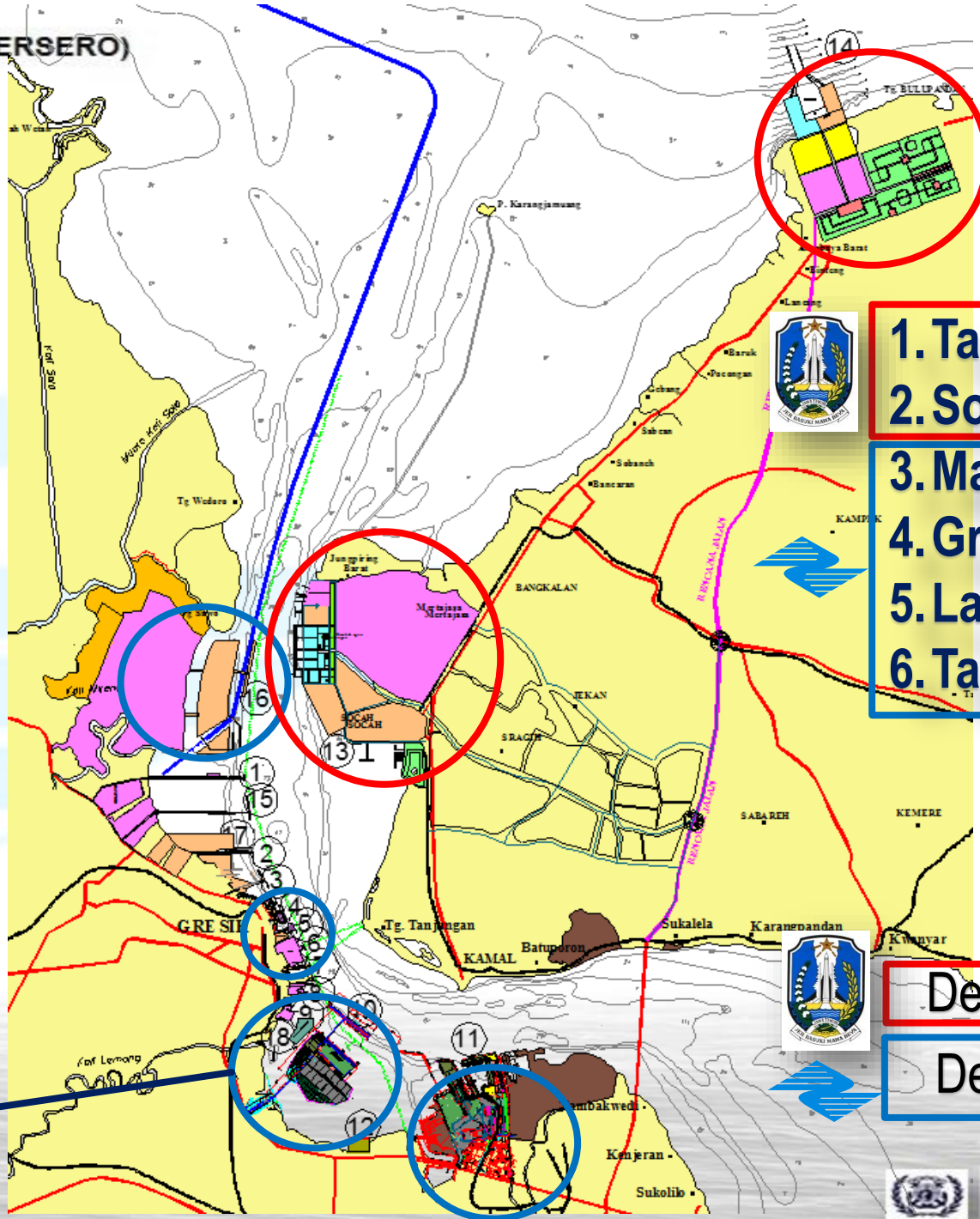
Programme Implementation at PELINDO III

- Variable Speed Generators (VSG) RTG in Semarang – Existing
  - Provide considerably better fuel economy as the engine runs at lower RPM level when idling
  - Automaticly optimized the engine's RPM according to power needed (lower fuel consumption)
  - Fuel saving up to 45%

- Electric RTG in Container Terminal Semarang (11 Units)
  - Improves energy efficiency, lowers costs by 65%
  - Eliminates SO2, NO2, particulate matter and black smoke
  - No engine noise
  - Eliminates engine maintenance; reduces disposal of lubricant, filters, engine components, etc.

MASTER PLAN OF TANJUNG PERAK PORT, GRESIK AND SURROUNDING

VIDEO TERMINAL TELUK LAMONG PHASE I



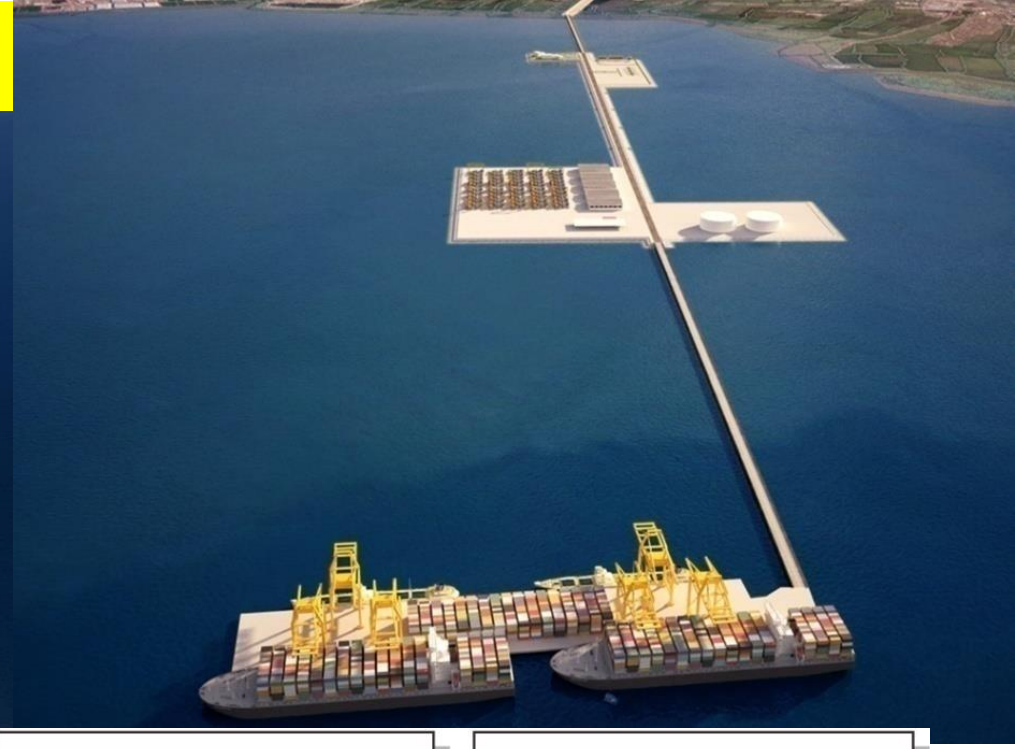
1. Tanjung Bulupandan Port
2. Socah Terminal
3. Manyar Port
4. Gresik Port
5. Lamong Bay Terminal
6. Tanjung Perak Port

Development by Goverment

Development by Pelindo III

Port Environmental Protection Initiatives

operation
2014



Gas power plants

Ship To Shore (STS)

Automated Stacking Cranes (ASC)

Straddle Carriers (SC)

Combined Terminal Tractor Trailers (CTT)

at Terminal Multipurpose Teluk Lamong (Lamong Bay Terminal) - Tanjung Perak

anning Bureau

http://www

Teluk Lamong Ultimate

ULTIMATE PLAN OF TELUK LAMONG TERMINAL

Description	Basin (-mLWS)	Wharf (m)	Yard (Ha)	On Shore Equipment (Unit)	Yard Equipment (Unit)	TERMINAL (Ha)	BACKUP (Ha)	Capacity (BOX & TON)
International Container	-14	1,280	16	10 CC	20 ASC	114	210	1.555.200
Domestic Container	-13	2,400	33	24 CC	42 ASC			3.110.400
Dry Bulk	-14	500	25	4 SHIP UNLOADER	CONVEYOR/WA REHOUSE	26	36	20.736.000

APPLICATIONS CONCEPT GREEN PORT & CLEAN SEA

1. CONSTRUCTION STAGE

a. MINIMIZE AIR POLUTION

- ❑ Dump Truck Cover
- ❑ Speed limitation max 20 km/ h
- ❑ Dust reducing by watering Access Road
- ❑ Reboisation

b. MINIMIZE BIOLOGICAL IMPACT

- ❑ Mangrove green belt at coastal area

c. MINIMIZE SOCIAL IMPACT

- ❑ CSR Programs:
  - ○ Bridge for fishermen activity
  - ○ Paving road
- ❑ Community empowerment

d. MAINTAINING SEA WATER QUALITY

- ❑ Bucket cover for dust prevention
- ❑ Making drainage channel

2. OPERATIONAL STAGE

a. MINIMIZE BIOLOGICAL IMPACT

- ❑ Mangrove planting 10,000 seeds at coastal area (3 hectares)
- ❑ Solid waste management
- ❑ Waste water & hazardous waste management

b. USE TECHNOLOGY ENVIRONMENT FRIENDLY

- ❑ Use of environmentally friendly materials (ex : LED)
- ❑ Environment friendly energy sources :
  - Solar cell (renewable energy)
  - PT PLN (Government-owned Corporation for Electricity)
  - Gas fuel and emission standards Euro 4
  - Electric power for Monorail (ACT)

EQUIPMENT AND SYSTEM IMPLEMENTED

(Container Handling Equipments)

I. SHORE EQUIPMENTS

- SHIP TO SHORE CRANE (Twin Lift and Single Lift) supplied by KONECRANES, FINLAND

II. YARD EQUIPMENTS

- AUTOMATED STACKING CRANE (ASC) supplied by KONECRANES, FINLAND
- STRADDLE CARRIERS supplied by KONECRANES, FINLAND

III. HORIZONTAL TRANSFER EQUIPMENTS

- AUTOMOBILE TERMINAL TRACTOR (ATT) supplied by GAUSSIN, FRANCE
- DOCKING SYSTEM supplied by GAUSSIN, FRANCE

IV. TERMINAL OPERATING SYSTEM, supplied by RBS, AUSTRALIA

SHIP TO SHORE CRANE

DESCRIPTIONS	INTERNATIONAL		DOMESTIC	
	2014	2016	2014	2016
Number of Crane (unit)	2	2 + 2	3	3 + 3
Type	PANAMAX (14 rows)		PANAMAX (14 rows)	
Container size (feet)	20, 40, 45			
Capacity under spreader	61 Tons (Twin Lift)	61 Tons (Twin Lift)	35 Tons (Single Lift)	35 Tons (Single Lift)
Rail Span (meter)	21	21	16	16
Speed (m/min) : a. Hoisting (load/no load) b. Trolley Transverse c. Gantry d. Boom Hoist (min)	60/120 150 45 5			
Drive System	Digital AC frequency converters			
Power source	Electricity, 3 phase, 6,600V, 50Hz			

MAIN SPECIFICATION

COMPARISON YARD CRANE

TABLE 1: A COMPARISON OF RTG, ERTG AND C-ASC CRANES

	RTG	ERTG	C-ASC	Comment
Investment	(+)	(-)	(-)	Depending upon crane price
Operating costs	-	-	+	Large reduction in labor
Cycle time	-	-	+	Higher trolley and gantry speeds
Yard utilization	-	-	+	More advanced stacking, more compact
Flexibility	+	0	-	Movement on rails for the CRMG
Civil works	+	0	-	Rails vs. concrete track
Infrastructure	+	0	-	HV – lines, remote, net-work
Maintenance	-	0	+	No tire changes, no diesel engine etc.
Environment	-	+	+	Electrically fed, no emissions, no rubber tire
TOS	+	0	-	More advanced
Service level LS/WS	-	-	+	Faster repositioning of cranes
Productivity	-	-	+	Better house-keeping, less dependence upon driver skills

YARD CRANE

WHY USING ASC ?

- ENVIRONMENT FRIENDLY
- HIGH CAPACITY YARD
- INCREASING SAFETY
- INCREASING PRODUCTIVITY

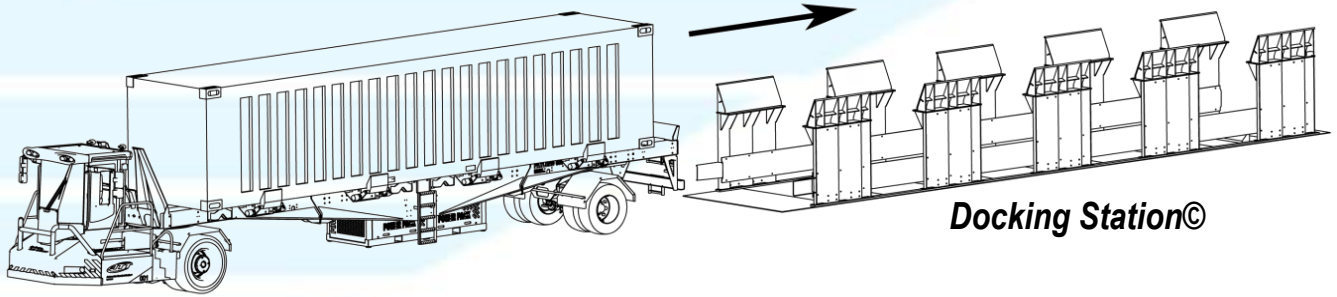
HORIZONTAL TRANSFER EQUIPMENTS (HTE)

WHY USING ATT LIFT + DOCKING STATION ?

Reduction of 30 to 50% in fuel costs, with the stop and Start technology, which programs the engine stops and start-ups without using keys and batteries.

Power Pack concept concentrating all the power supply in a removable container. Choice of power and type of motorization, with the use of the Power Pack.

Quick Move the Power Pack extraction system. Service availability ratio close to 99%.



AT LIFT©

Docking Station©

Combined Terminal Tractor Trailers (CTT)

- Very easy to use, robust, reliable with an availability ratio close to 100%.
- Autonomous, it can unload/load a container in the stacking yard without having to rely on other unloading equipment or “wait for the crane”.
- **Improves operational productivity while providing a safer working environment for employees and safer handling conditions for cargo.**
- **Economical, less cost of fuel, maintenance, tyres and labour.**

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Teluk Lamong (Lamong Bay) – Tanjung Perak Automated Container Transporter (Monorail)

WHY USING ACT ?

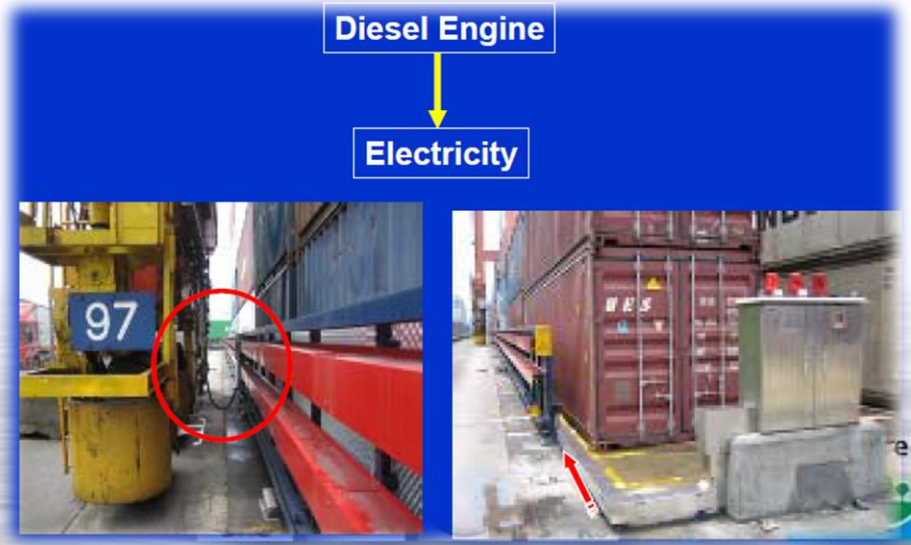
1. No burden to existing traffic (elevated)
2. Environtmental Friendly (reduce air pollution and noise)
3. Powered by electricity
4. Automation system, including headway setting
5. Easily integrated in the process of scheduling loading and unloading in the container terminal

http://www.pp3.co.id

Other Port Environmental Protection Initiatives

- SHORE PLUG
  - ✓ When moored ships don't need to keep their auxiliary engine running (cost reduction)
  - ✓ CO2 emission reduction

- ELECTRIFICATION
  - ✓ CO2 emission reduction



START THINKIN' GREEN !!

Thank You