



Sustainable Port Operations at Johor Port

























24 October 2024



ort[®]
Group

BACKGROUND

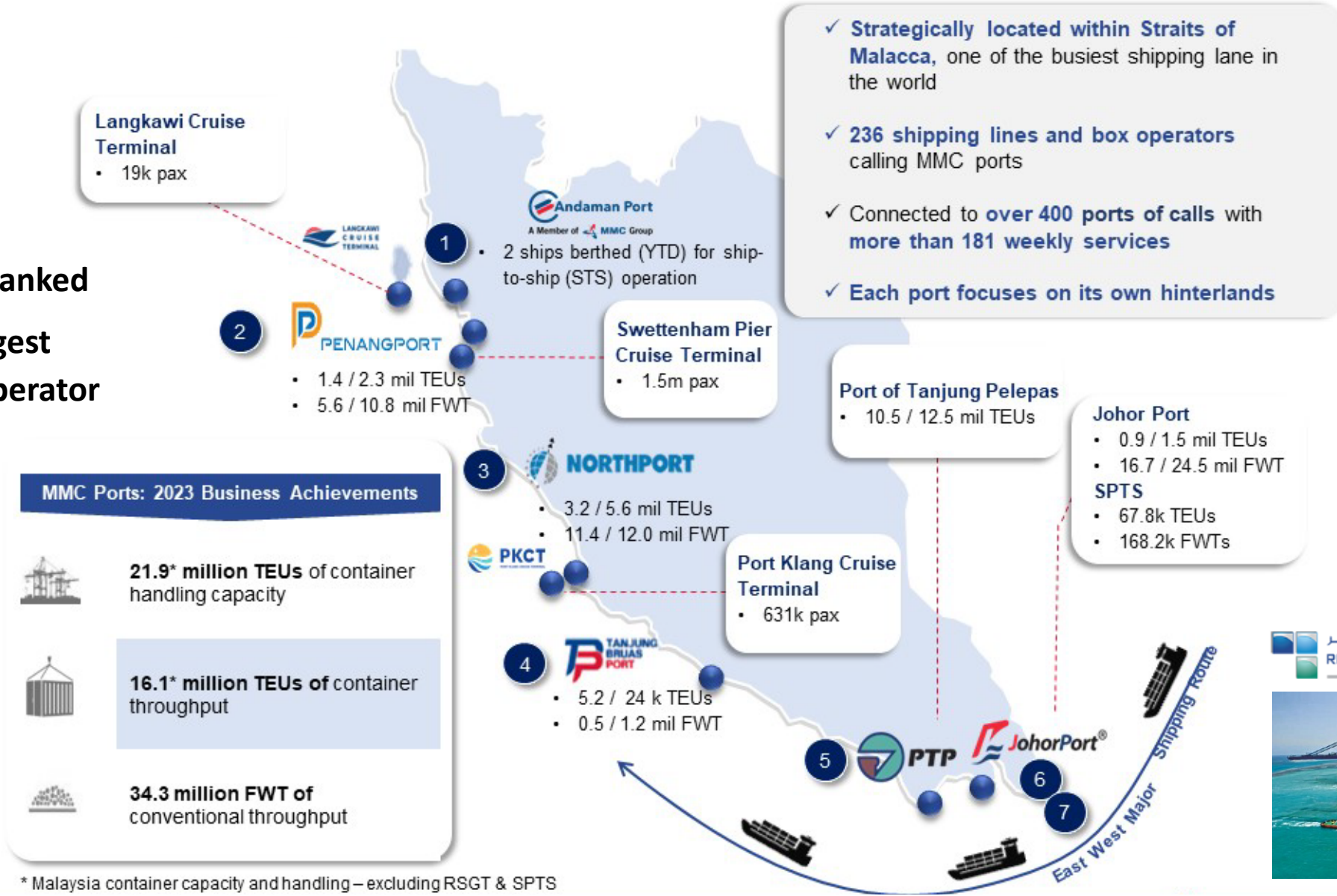
Malaysia's Premier Infrastructure Group

 PORTS & LOGISTICS	 ENERGY & UTILITIES	 ENGINEERING	 OTHERS
<ul style="list-style-type: none">  Port of Tanjung Pelepas <ul style="list-style-type: none"> • Transshipment Hub • 70% shareholding • 30% owned by APMT  Johor Port Berhad <ul style="list-style-type: none"> • Wholly-owned by MMC • A Multi-purpose Port  Northport (Malaysia) Bhd <ul style="list-style-type: none"> • 99% shareholding  Penang Port Sdn Bhd <ul style="list-style-type: none"> • 100% shareholding  Tg Bruas Port Sdn Bhd <ul style="list-style-type: none"> • 70% shareholding  Red Sea Gateway Terminal <ul style="list-style-type: none"> • 20% shareholding  Kontena Nasional Berhad <ul style="list-style-type: none"> • 99% shareholding 	<ul style="list-style-type: none">  Malakoff Corporation Berhad <ul style="list-style-type: none"> • Power and Water Generation co. • Associate - 38.45%* shareholding  Alam Flora Sdn Bhd <ul style="list-style-type: none"> • Solid Waste Management and Public Cleansing • Subsidiary of Malakoff, owned 97.37%  Gas Malaysia Berhad <ul style="list-style-type: none"> • Natural Gas Distribution co. • Associate - 30.9% shareholding  Aliran Ihsan Resources Berhad¹ <ul style="list-style-type: none"> • Wholly-owned by MMC • A Water Treatment Specialist 	<ul style="list-style-type: none">  MMC-GAMUDA <ul style="list-style-type: none"> • PDP for elevated and Main contractor for underground KVMRT Line 1 • Main contractor for entire package of KVMRT Line 2  SMART Tunnel <ul style="list-style-type: none"> • First of its kind, dual purpose tunnel • 50% shareholding  MMC Pembetungan Langat Sdn Bhd <ul style="list-style-type: none"> • Wholly-owned by MMC • Langat Centralized Sewage Treatment.  MMC Engineering <ul style="list-style-type: none"> • Wholly-owned by MMC • Langat 2 Water Treatment Plant 	<ul style="list-style-type: none">  Senai Airport Terminal Services Sdn Bhd¹ <ul style="list-style-type: none"> • Wholly-owned by MMC • Airport operations  MMC Land Sdn Bhd  Senai Airport City¹ <ul style="list-style-type: none"> • Wholly-owned by MMC  Seaport Worldwide <ul style="list-style-type: none"> • Wholly-owned by MMC  Northern Technocity¹ <ul style="list-style-type: none"> • Wholly-owned by MMC <p style="text-align: right; margin-top: 20px;">¹Financial contributions are reported in Others under the Group's financial reporting</p> <p style="text-align: right; margin-top: 10px;">* Excluding treasury shares</p>

MMC PORTS - MALAYSIA'S LARGEST PORT OPERATOR



Internationally Ranked
as the **8th** Largest
Container Port Operator



MULTI-PURPOSE PORT

- Regional Commodity Hub
 - World's single largest Palm Oil Terminal.
 - Designated as an approved LME location for hubbing of Non-Ferrous Metals.
 - One of the largest discharging point for Cocoa in Malaysia;
 - One of the biggest Terminal in Malaysia for Fertilizer; and
 - Southern Region largest Grain Terminal - discharging of Rice, Corn, Wheat, Soya Bean etc.
- Surpassed Container volume of 1 Mil TEUs.



GATEWAY PORT

- Connecting ASEAN to the Intra Asia Region
- Load Centre for Sabah & Sarawak
- Gateway for the Indonesian outports
- Excellent Feeder Connectivity

- Total area of 1,000 acres, 660 acres of which are in a Free Zone.
- 24 berths with a total berthing length of 4.9 km.
- Designed capacity of 40 million tonnes.





Container

Hinterland Port catering for Import & Export and Transshipment cargo (99% Gateway cargo & 1% Transshipment cargo).

Servicing over 28 Industrial Estates in Johor and the main catalyst for Pasir Gudang Industrial Area and Tanjung Langsat Industrial Complex.

Strong Intra Asia connectivity.



Conventional

Liquid Cargo - world's single largest Palm Oil Terminal.

Dry Bulk Cargo - one of the biggest Terminal in Malaysia for Fertilizer and Cement.

Breakbulk Cargo - designated as approved LME location in 2004. Largest discharging point for Rice and Cocoa in Malaysia.



OIMR & Warehousing

Offshore Inspection, Maintenance & Repair ("OIMR")

Provides comprehensive repair services to the O&G industries including Manpower, Mobilisation, M&R works etc. via its One Stop Centre.

Warehousing

> 2.5 mill sq ft of storage space for LME cargo, Conventional cargoes including Soft Commodities (Cocoa, Fertilizer, Rice) and Transit Cargoes.



Marine

Given the rights to provide full range of Marine Services to all facilities within Pasir Gudang Port Water Limit.

Servicing 26 Private Jetties including Pengerang Independent Deepwater Terminal, Tg Langsat, MMHE and Idemitsu.

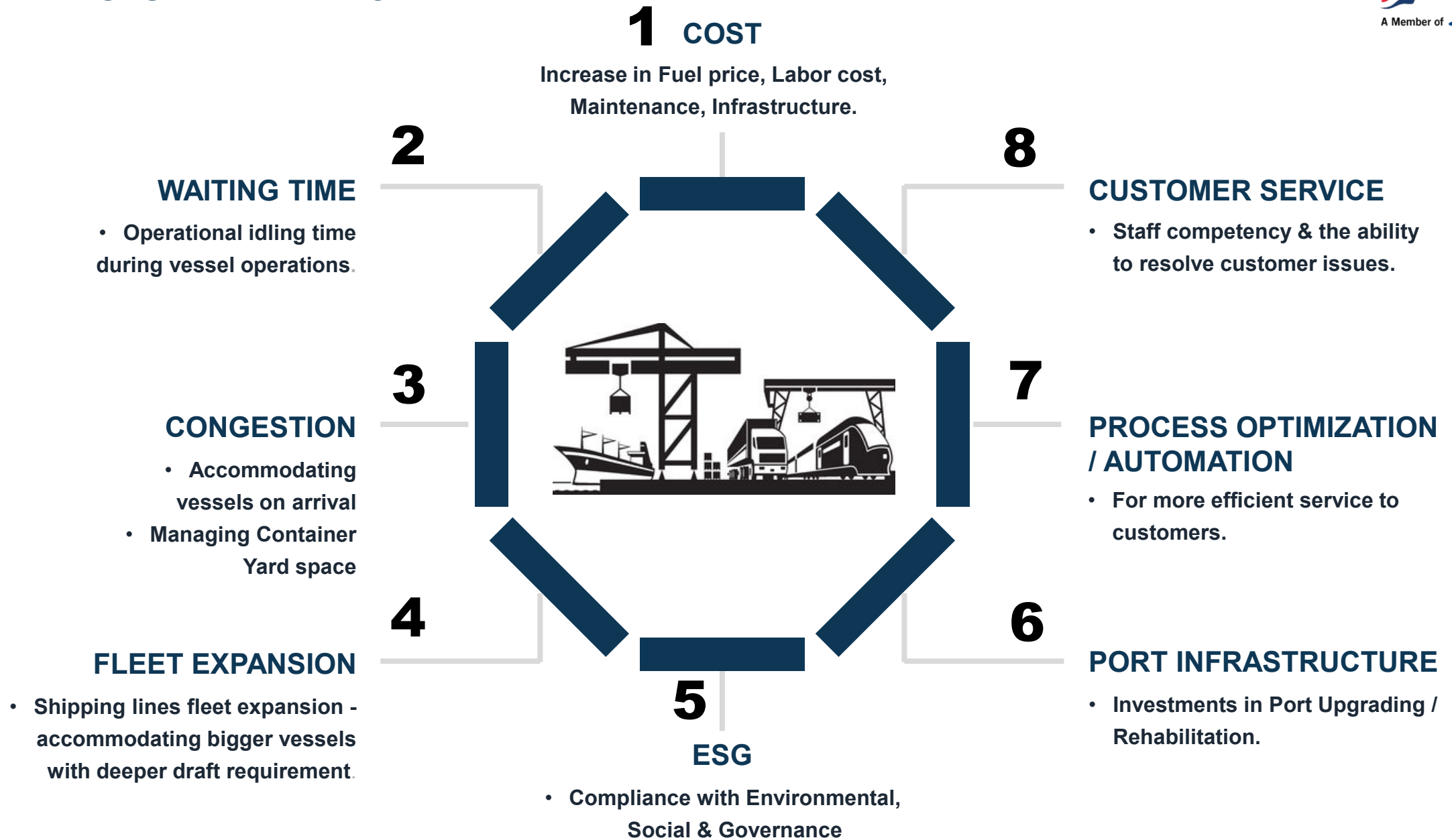
Provide Marine Advisory Services e.g. for VLCCs coming to the Independent Deepwater Terminal.





A Member of  MMC Group

SUSTAINABLE PORT OPERATIONS



Sustainable Port Operations are essential for improving service levels in the handling of Containerized and Conventional cargoes at Johor Port.

The COVID-19 Pandemic provides lessons to learn from when addressing future disruptions.

- The Pandemic accelerated the diffusion of new technologies, including digitalization, such as e-bills of lading, blockchains and smart logistics hubs, to drive efficiencies and overcome human contact required by sanitary controls and protocols.
- These measures have been useful in ensuring business continuity and keeping ports open and the Maritime Supply Chain working.

(UNCTAD Resilient Maritime Logistics).

Key Focus Areas



2024

Quarter 2

Paperless

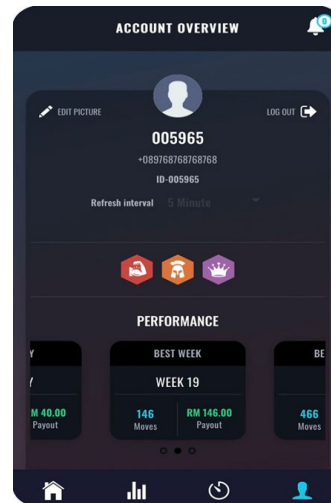
- Eliminate the usage of vessel files.
- All data and reports are kept in shared folders.



Quarter 3

Mobile Apps

- Operation staffs will get information such as individual performance, Box allowance and booking of POW.



Quarter 3

Unmanned Weighbridge System

- To manage and track the critical information created at the time of weighing in an easy and flexible manner.

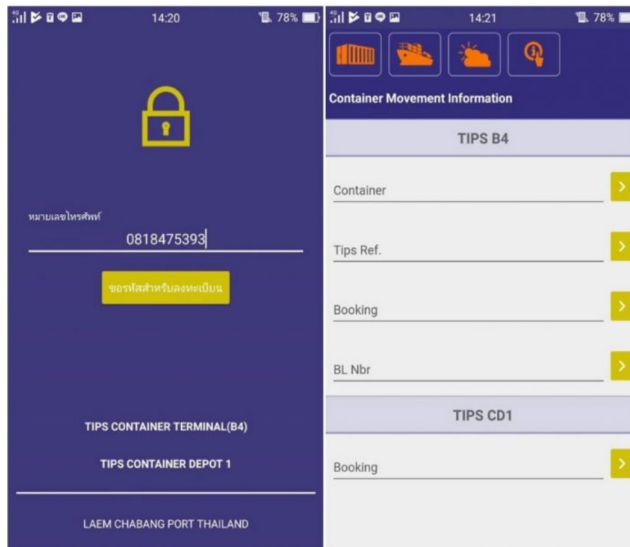


2024

Quarter 4

Mobile Apps

- Forwarding Agents / Hauliers can create pre Advise / pre Gate via Mobile apps.



Quarter 4

Weighbridge Networking Integrated

- To manage and automate the process of Weighing vehicles and cargo on weighbridges.



Quarter 4

Loadcell in Grabs

- To determine the weight and load in Crane and Hoist systems ensuring safety by preventing overloading.



2025

Quarter 1

Asset Digitalization

- Virtual mirror of complete Terminal. A real-time digital representation of all assets and associated systems.



Quarter 1

Digital Safety Signage

- Enhance awareness for Port Users inside Container Yard / Bulk Terminal.



Quarter 1

Vessel Apps

- Provides real-time visibility of container loading/discharging during port stay, with reliable estimated completion times for shipping lines.



2025

Quarter 2

Paperless

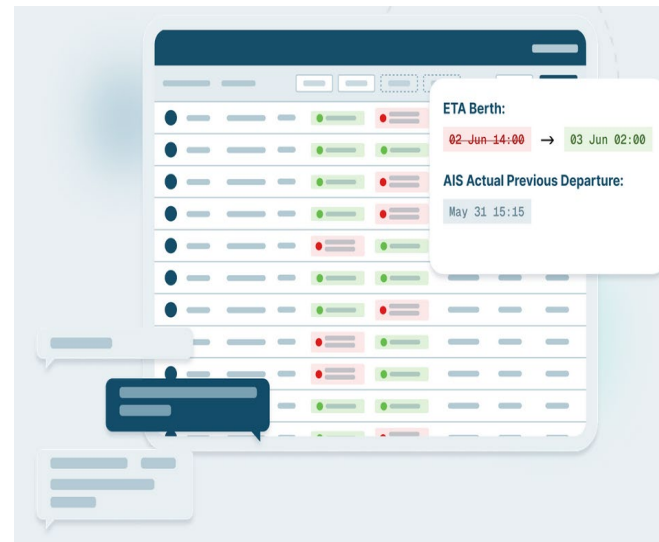
- On Wharf / On Board Clerk will use Tablet for Wharf operation instead of using printed paper.



Quarter 2

Berth Optimization Engine

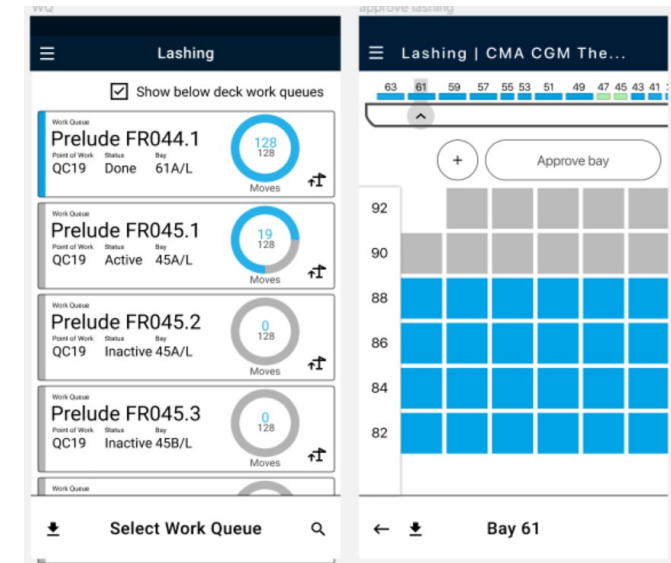
- To optimize Berth allocation and enable customer to monitor Berth status in real time.



Quarter 3

Lashing Apps

- To streamline Cargo Lashing activities for faster turnaround



2025

Quarter 3

GPS Trucking System

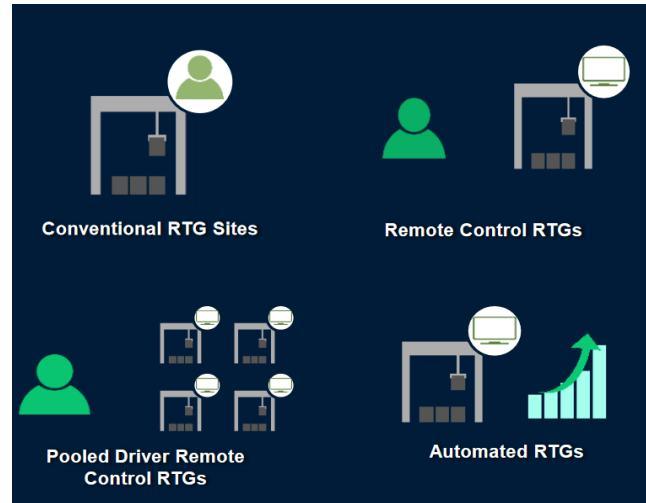
- To track and monitor Prime Mover activities in the Container Yard.
- To track and monitor Tipper Trailer activities at the Bulk Terminal.



Quarter 3

RTG Optimization

- Automate decision for RTG job, Block and Lane assignment.
- Increase RTG productivity by leveraging on TOS data.



Quarter 4

Gate Automation

- Improve Gate operations and monitor Terminal access.
- Reduce Gate interventions and increase Truck turnaround time.



e-Terminal Tractors

- A fully battery-powered unit to reduce Diesel consumption by 13,000 liters per month per unit or equivalent to 34,700kg of CO² removal.
- 35 to 42 units of existing Diesel-TTs are scheduled to be replaced with e-TT for a possible conversion of 546,000 liters of Diesel consumption or equivalent to 1,457,000 kg of CO² removal.
- The test unit is being deployed at the Port. The **expected delivery of the e-TT is by 2026.**

e-Container Reach Stacker

- 2 units of conventional CRS are scheduled to be replaced with e-CRS.
- The fuel consumption of an average of 10,000 liters per CRS per month would be fully converted into electricity consumption for a possible 26,700 kg of CO² removal per CRS per month.
- **The units are expected to be delivered in 2026.**

DECARBONISATION INITIATIVES



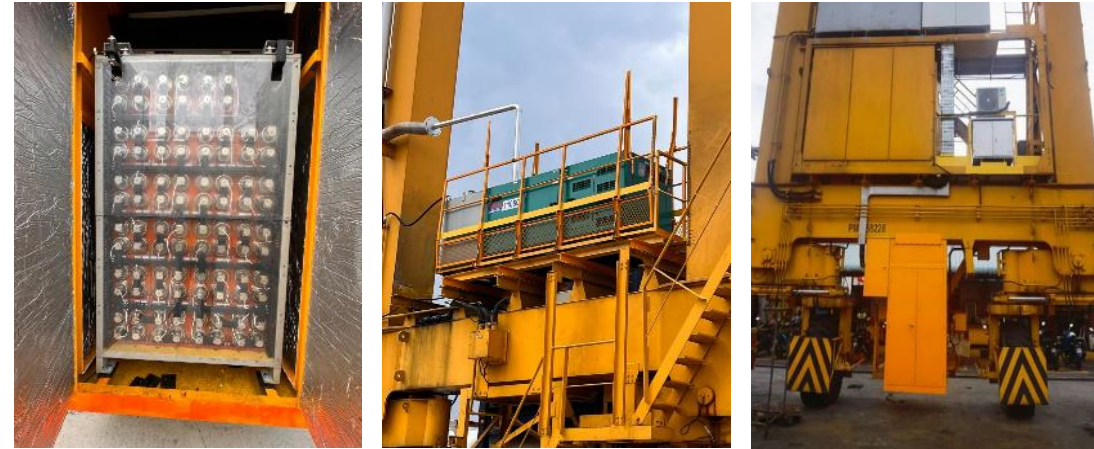
Hybrid Rubber Tyred Gantry Crane

- Conversion of the current engine to a hybrid system consisting of a high-capacity battery and a small engine to charge the battery. A physical trial is being carried out at our RTG no TC12.
- Preliminary results indicate a better fuel consumption i.e., 0.98L/TEU for pre-trial and 0.76L/TEU during trial.
- This saves 22% from the total fuel consumption of 198,000 liters for our fleet of RTGs per month; equivalent to the removal of 528,660 kg of CO² per month.

e-Rubber Tyred Gantry Crane

- 4 units of the conventional RTG are scheduled to be replaced with e-RTG.
- Fuel consumption of an average of 35,000 liters per RTG per month would be fully transferred to the electric power or equivalent to removing 373,800 kg of CO² per month for the 4 RTG.
- **The units are expected to be delivered in 2027.**

DECARBONISATION INITIATIVES



THANK YOU

