Decarbonisation of ports update!

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See us at:

During the MCO…

Blue Skies Ahead: Decarbonisation!

WHAT IS DECARBONISATION?

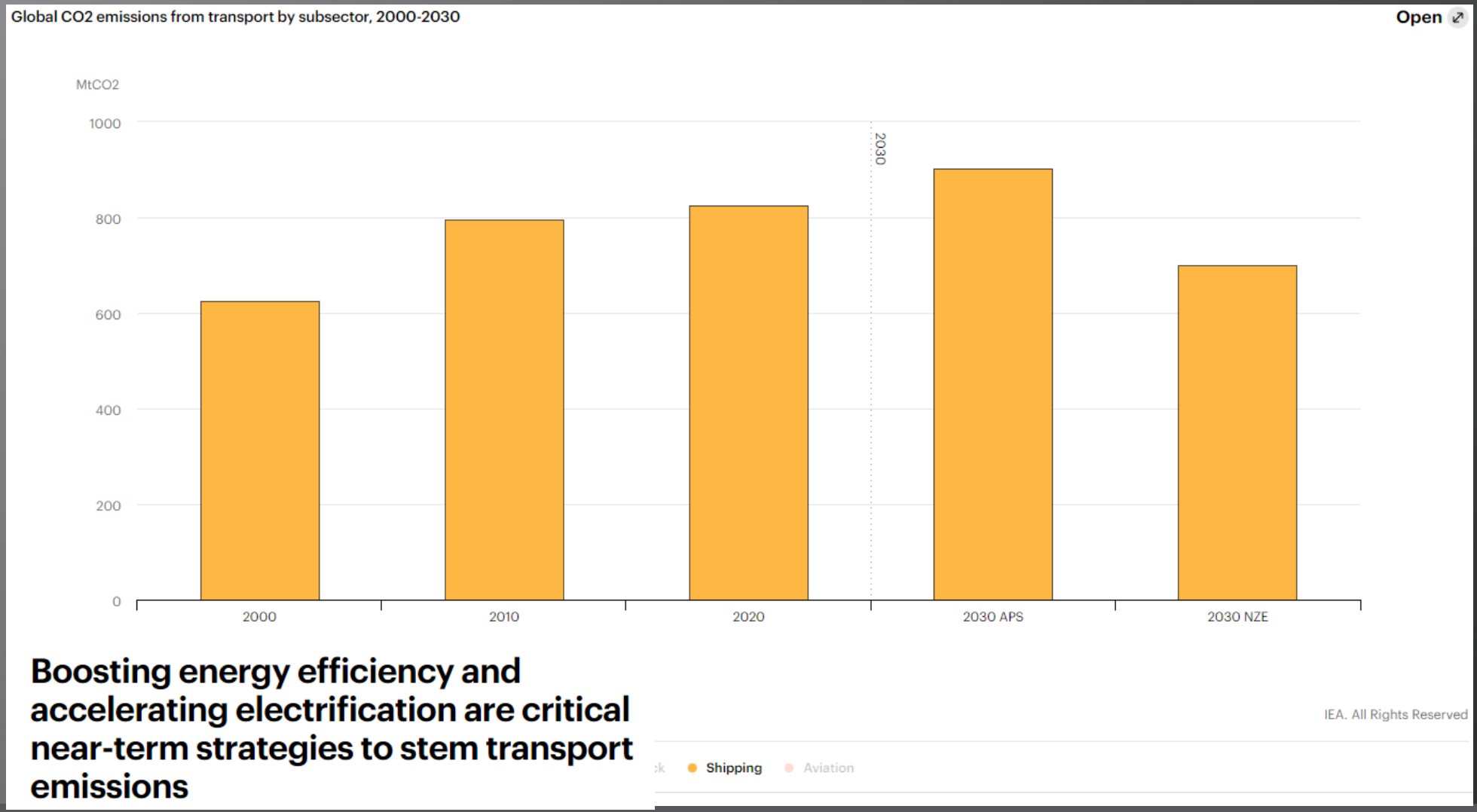
Decarbonisation refers to the process of reducing carbon dioxide (CO2) emissions resulting from human activity in the atmosphere. The goal - eliminate our carbon dioxide emissions.

IS MALAYSIA ON BOARD?

Outlined in the 12th Malaysia Plan forum - Prime Minister Datuk Seri Ismail Sabri Yaakob announced that Malaysia aims to become carbon neutral as early as 2050.

Additional - Renewable energy to account for 31% of Malaysia's total energy capacity by 2025

The International Energy Agency: Tracking Transport Report



South East Asia Ports Embrace it!

December 07 2021

Blog: 'Decarbonizing port logistics – the time is now!' – by COO, Keith Svendsen

Fighting climate change has become an imperative for all of us as individuals and as companies, and in APM Terminals we are fully committed to address this challenge and be part of the solution.

Connecting land and sea, our terminals act as a local heartbeat to the societies and customers we serve. However, in doing so for the past 20 years, we have also been part of the "challenge". Last year alone APM Terminals emitted the same amount of CO2 as an average European city with a population of around 120,000.

10 February 2021

- Port Klang's concerted efforts to transform the port industry towards adapting new practices which are environmentally sustainable has once again earned international recognition. Recently Port Klang has awarded the APSN (APEC Port Services Network) Green Port 2020 unification for the second time since 2017.

GREEN PORT POLICY

As a responsible port authority, Johor Port Authority (JPA) is very concerned on balancing physical development and environmental sustainability. The environment must not be sacrificed for the sake of development and economic progress.

We are currently formulating a roadmap that will lead us eventually to be a carbon-neutral port in the future. We target to unveil this strategy within two years. In the meantime, Westports has approved the installation of solar panels on two future warehouses. These panels will collectively generate 9.5 MW or up to 12 million kWh of energy each year for the port's consumption to reduce its carbon emissions. We are also evaluating other sources of energy that can contribute to a reduction in our carbon footprint.

NEW STRAITS TIMES

Search news or type a k

Port Klang Authority general manager Capt K. Subramaniam said the port administrator was supportive of the decarbonisation roadmap envisaged by the IMO.

"We work closely with shipping lines. We are on the right track and many operators embark on this plan to abide by the IMO's regulations such as on the reduction of carbon emission and to utilise energy efficiency of ships," he told the NST when contacted recently.

"In line with the theme chosen by the International Maritime Organisation for World Maritime Day 2022 — 'New technologies for greener shipping', it serves as an opportunity to reflect the need to support a green transition of the maritime sector for a sustainable future.

Minister of Transport Datuk Seri Wee Ka Siong

BICT Yard Equipment Running Diesel

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Energy & Data Transmission Systems

6 x Ship-To-Shore Crane – Total 4,711,020 KG C02

12 x Rubber Tire Gantry Cranes - Total 2,393,020 KG C02

TOTAL YEARLY CO2 EMISSIONS: 8,381,300 KG C02

24 Terminal Truck- Total 1,034,370 KG C02

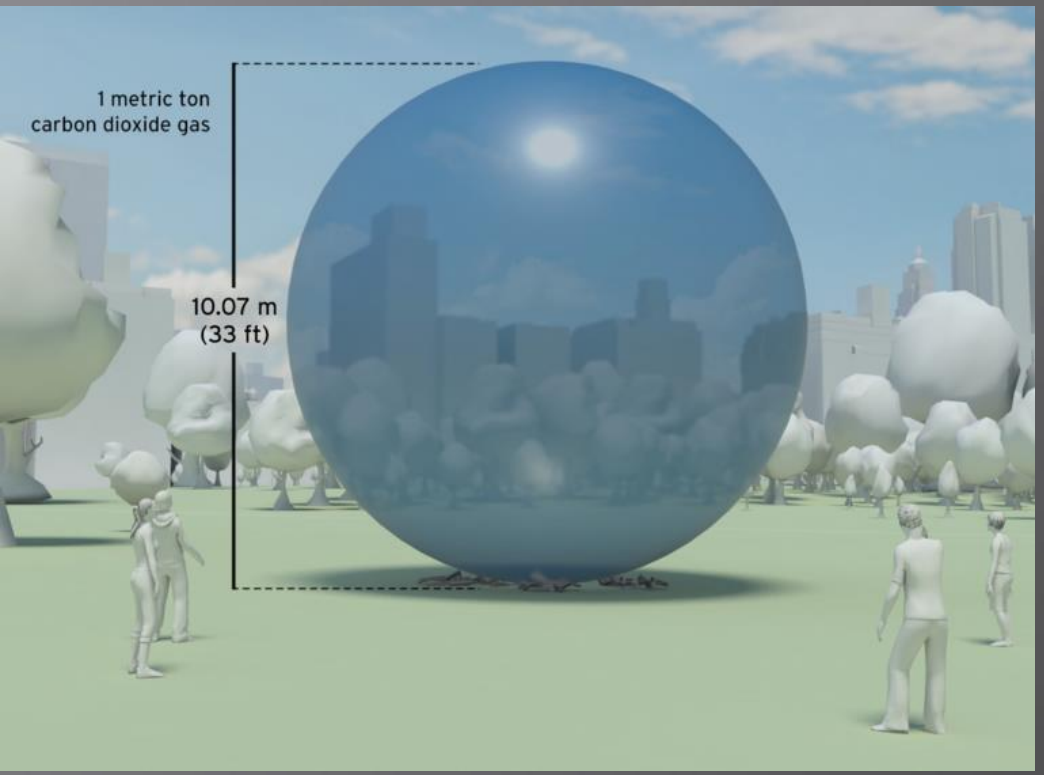
1 x Side Loaders - Total 59,120 KG C02

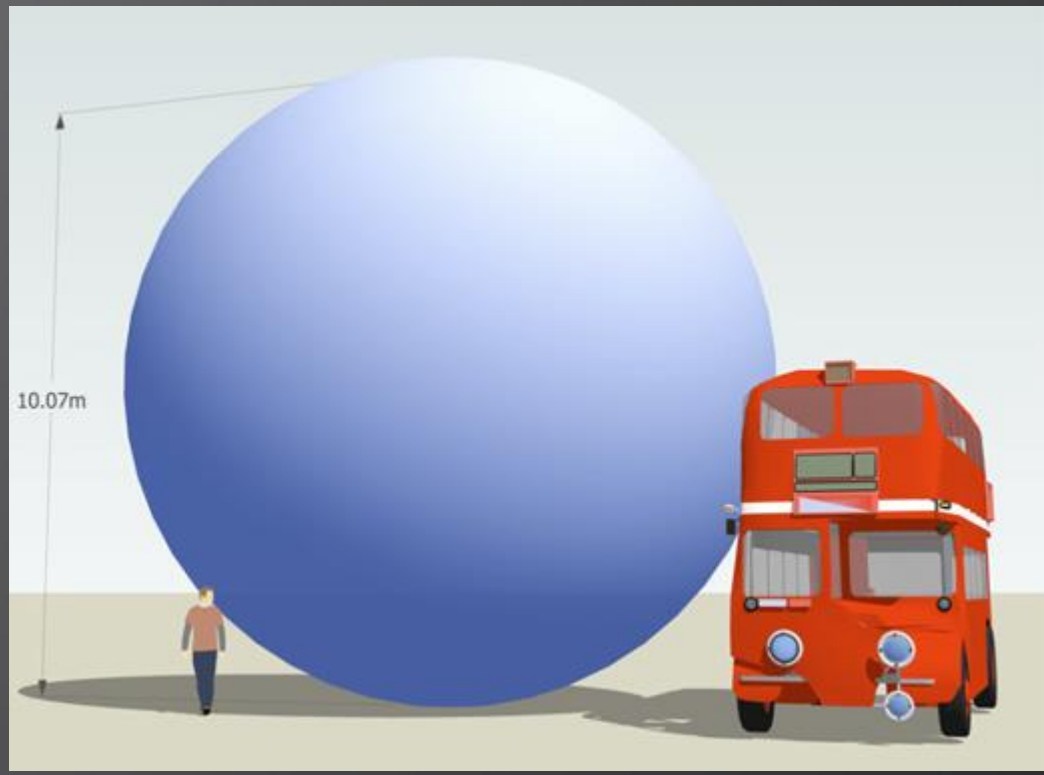
2 x Reach Stackers - Total 183,790 KG C02

International Journal of Technology 10(8): 1618-1625, November 2019.

To make it easier to understand..

1 Tonne of CO2:





Images thanks to Carbonvisuals.com

The evolution of CO2 in technology!

- Conventional RTG's are not very fuel efficient
- Fuel consumption examples:

Conventional RTG	Ecological RTG	Hybrid RTG	Electrified RTG's
21 l/h (55kg C02)	13 l/h (34kg C02)	7 l/h (18.3kg C02)	about 40 kWh/h

- Solutions:
  - Intelligent Generators can save up to 50% of fuel costs
  - Intelligent port planning and efficient RTG operation reduce costs
  - Electrification – fuel and maintenance cost reduction + low emissions

Not just for the environment…

The worlds governments implement carbon tax per tonne of carbon dioxide equivalent (tCOe). Currently 27 countries are active with this.

In September 2021, the Malaysian Prime Minister confirmed that a carbon tax is included in the 12th Malaysian Plan (2021-2025). The carbon tax framework hasn't been put in place yet.

The Penang Institute, in its 2019 proposal for carbon tax in Malaysia, proposed an introductory rate of RM35 per tCOe, before rising to RM150/tCOe by end-2030.

For our study of BICT, this means: MYR – 293,000 up to 1,275,000 Tax in 2030. BICT is a small terminal.

But also.. Customers demand it:

The business community has a strong focus on “Net Zero” targets to be carbon neutral. Not only for responsible business, but to avoid carbon taxes from their respective governments.

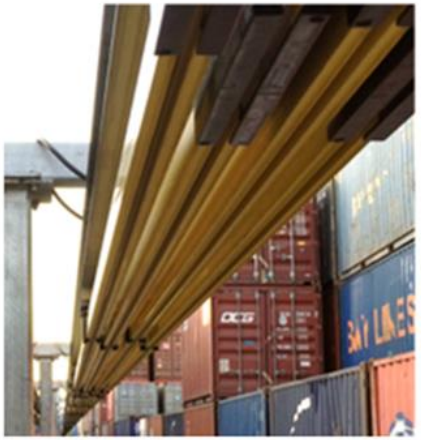
If the ports are not taking this seriously – it potentially can mean the loss of key customers and partners in the future.

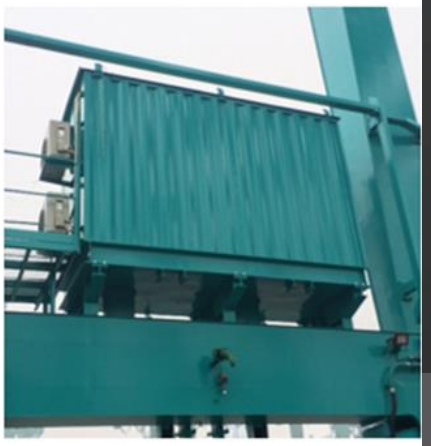
But there are strong positives also. The technology available saves in operating expenses (high fuel costs), reduces maintenance costs and can increase equipment uptime.

Electrification is the key…

Conductix Wampfler are specialists in reducing Carbon Emissions with it's Electrification technologies:

Motorized Cable Reel Solutions	Conductor Rail Solutions	Hybrid Solution	Zero Emission Solutions
✓ Manual or automatic cable connection to grid power	✓ Manual or automatic connection to grid power	✓ Hybrid with a big battery pack and a small onboard genset	✓ Full E-RTG ✓ Battery E-RTG ✓ Fuel Cell Battery E-RTG





Electrification of yard equipment

Conductix Wampfler HYBRID Solutions:

Battery housing mounted under sill beam

Battery modules inside the housing

Small diesel genset mounted under sill beam

HMI Touch Panel

- Equipped with a big battery pack powering **all** movements
- Small size Genset to charge the battery when needed (e.g. 100kW)
- Hybrid power pack connected to the DC/DC bus

Conductix Wampfler Hybrid

Benefits

- Up to 60% fuel saving compared with a conventional genset
- Energy efficiently recovered in the battery system e.g. during lowering operation
- Engine can be downsized to 100 kW
- Maintaining full operational flexibility in the yard
- Reduced maintenance cost and less refueling operations
- Independent from grid power availability
- Reduce environmental impact: Emission reduction of CO2, NOx, SOx, particulates + noise

How about upgrade for free?

- Conductix Wampfler has worked with Malaysia Green Technology Corporation to get the approval of government funding for Hybrid & Battery retrofit and new equipment using CXW Hybrid and Battery technology.
- What this means is the Malaysia Government allows the use of the Green Investment Tax Incentive program to pay for the equipment certified under it's scheme.
- We can upgrade your existing yard equipment or your new equipment with Government Funding – Reducing the costs of Carbon Tax and delivering lower overheads from Electric and hybrid technology.
- We would be happy to help explain this more to you and discuss how the Malaysian Government can fund your CXW Hybrid or Battery technology for Port Equipment.

MyHIJAU • MARK

This is to certify that

CONDUCTIX-WAMPFLER SDN. BHD. (678076U)

B-G-13
The Tube Dataran Prima, Jalan PJU 1/39
47301 Petaling Jaya
Selangor

has the rights to use the MyHIJAU Mark on the following item:

Item #	Item Name
MyHP00302/21-E001	Battery Pack for Hybrid RTG

In Summary

- Its our responsibility to conduct business in an Eco-Friendly manner.
- Not only does Hybrid and Battery technology reduce operating expenses of the yard equipment – it also reduces the impact of incoming carbon taxes.
- The Malaysian Government has a green inventive program that Conductix-Wampfler has been approved for. We can help enable that funding to drive your vision of lower emissions.
- Conductix Wampfler is here to help with your terminal yard equipment electrification needs.

Thank you and any QUESTIONS ☺

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MALAYSIA MyHIJAU

Focus Markets – Container Handling