# Engagement of port terminals in the energy transition: a competitive factor


Rotterdam 11-13 June 2024

Presentation by:

Leticia Astudillo, Deputy Director, Drewry Maritime Advisors E: astudillo@drewry.co.uk

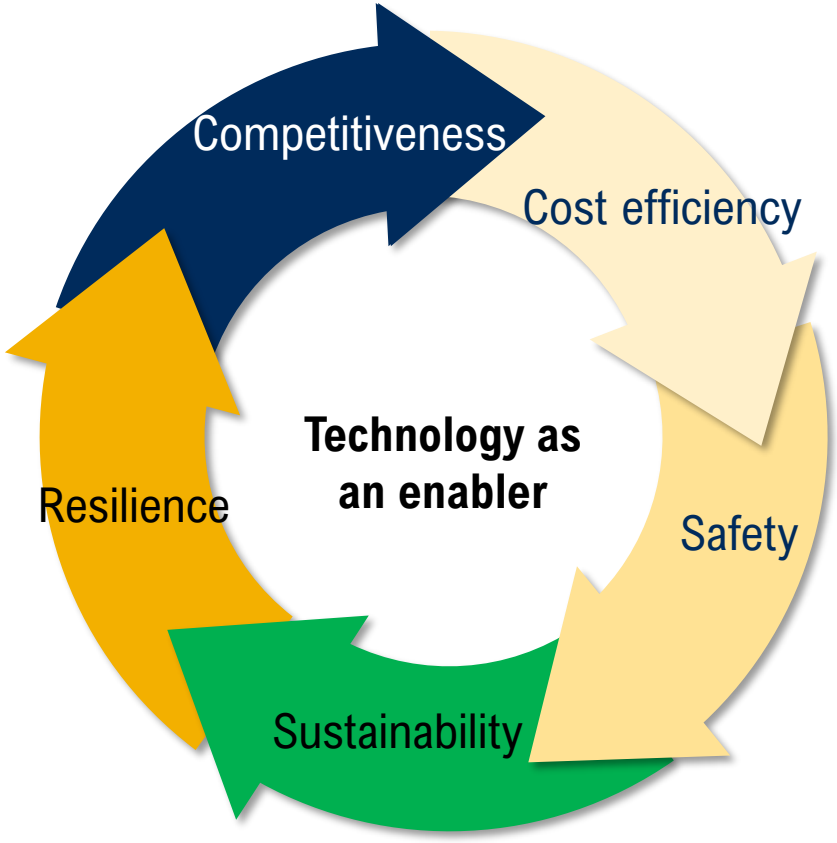
# Presentation Agenda

Engagement of port terminals in the energy transition: a competitive factor

1. Drivers of ports and terminals decarbonisation
2. Focus on terminal decarbonisation and key decarbonisation enabling actions
3. JIT as a key decarbonisation action
4. Resilience of the ports and terminals sector
5. Conclusion

# 1. Drivers of ports and terminals decarbonisation

# Decarbonisation of port terminals: Business drivers



# Decarbonisation drivers

## Shipping sector

**Regulatory push**

Push from IMO and EU to reduce vessel emissions

**Push from financial /charterers/insurers**

'Poseidon Principles' by Lenders

*'Sea Cargo Charter' by c*harterers

'Poseidon Principles for Marine Insurance' by marine insurers

**Push from end customers**

End customers demand to know the emissions related to cargo transported

## Ports and terminals sector

**Regulatory push**

Green Deal / Fit-for-55 / FuelEU Maritime: OPS in TEN-T ports, future requirement to electrify CHE / operate with new fuels

**Push from financial institutions**

Green financing for green port projects

Equator principles

**Push from end customers**

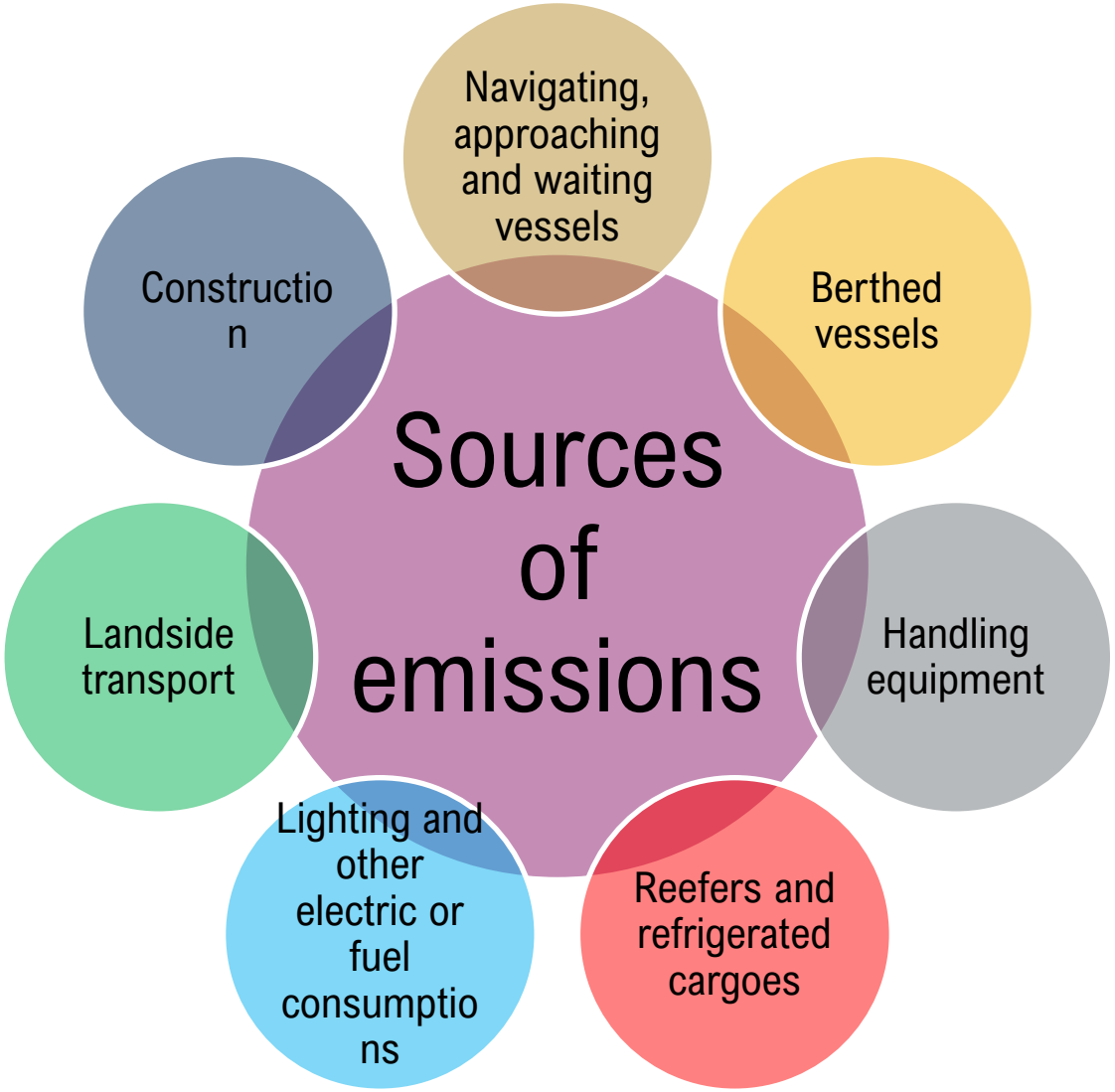
End customers demand to know the emissions related to cargo transported

**Push from shipping sector**

- New fuels (bunkering)
- OPS
- Emissions in the supply chain

# Ports are sources of emissions but also providers of solutions

**Emissions in ports**



# 2. Focus on terminal decarbonisation and key decarbonisation enabling actions

# Sustainability reporting of Global Container Terminal Operators

## GHG emissions reporting

The limited quantitative data we have found relates to GHG emissions reporting. We have homogenised the data to enable a comparison.

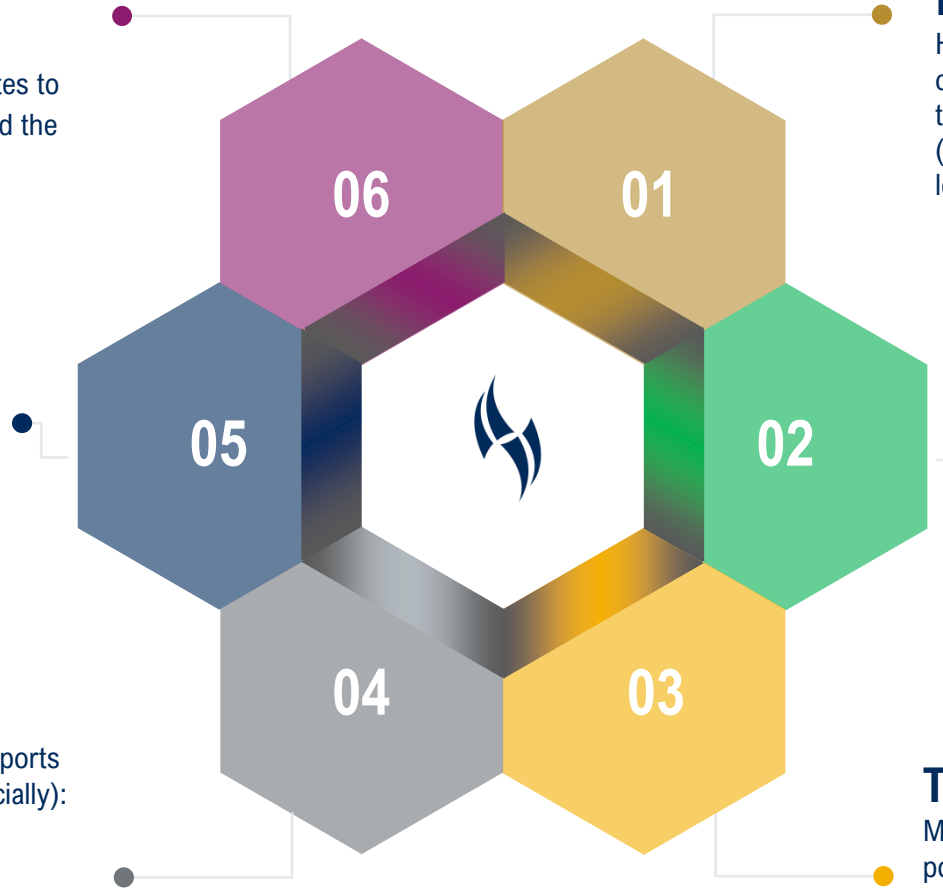
## Transparency and quantification

Quantitative analysis / reporting is minimum in GCTO sustainability reports. This lack of clarity prevents comparisons and tracking of progress. An obligation to report does not imply a good sustainability performance.

## Main GRI themes

Majority of GCTO sustainability reports using GRI covered (albeit superficially):

- Energy consumption
- Direct (Scope 1) GHG emissions
- Indirect (Scope 2) GHG emissions
- Management of H&S
- Work-related injuries




## Heterogeneity

Heterogeneous and lack of consistent criteria → difficult to compare sustainability performance of GCTOs. Mix of types of terminals (containers, dry bulk) and business activities (shipping business or intermodal business or supply chain logistics). Structure, content and detail of reports varies widely.

## GRI

Most GCTOs claim to follow GRI standards (Global Reporting Initiative) and all make reference to the UN SDG.

GRI is based in self-assessment and GRI interpretation is somewhat subjective → GRI guidelines specific to the ports and terminals sector would be an excellent first step to enable a meaningful comparison (ongoing efforts by PIANC and IAPH)

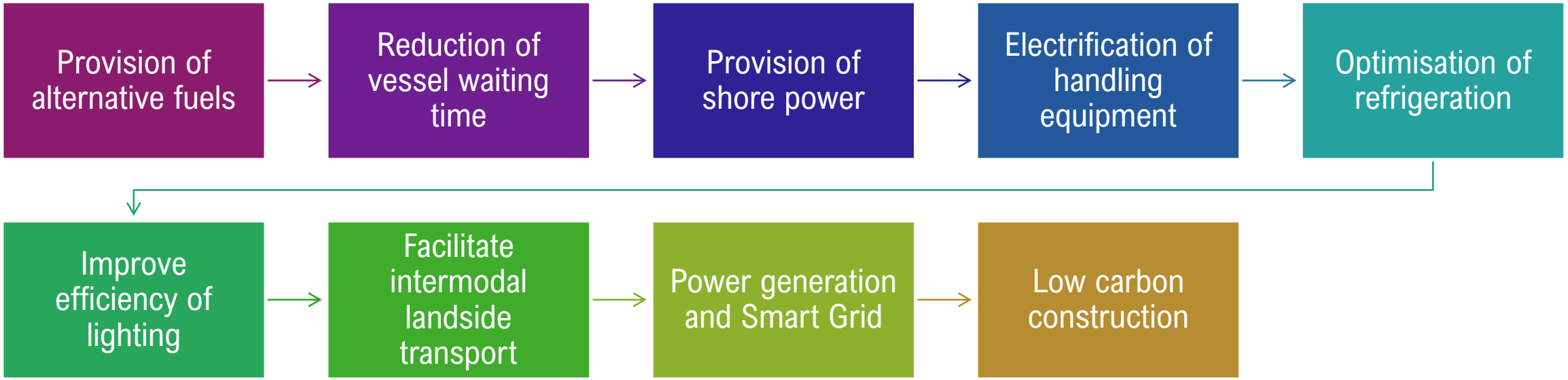
## The terminal is critical

Many global sustainability initiatives are focused either on ports (ESPO, Green Ports, GPAS) or on global terminal operator portfolios but oversees the critical terminal-focused analysis.

# Drewry's initiative: decarbonisation of terminal operations

1. Focus on the terminal
2. Focus on energy transition engagement
3. What cannot be measured cannot be improved → aim at measuring specific steps that terminals take to decarbonise / adapt to the energy transition
4. Park the emissions quantification element

## Enabling actions



# 3. JIT as a key decarbonisation action for ports and terminals

# JIT as a key decarbonisation action for ports and terminals

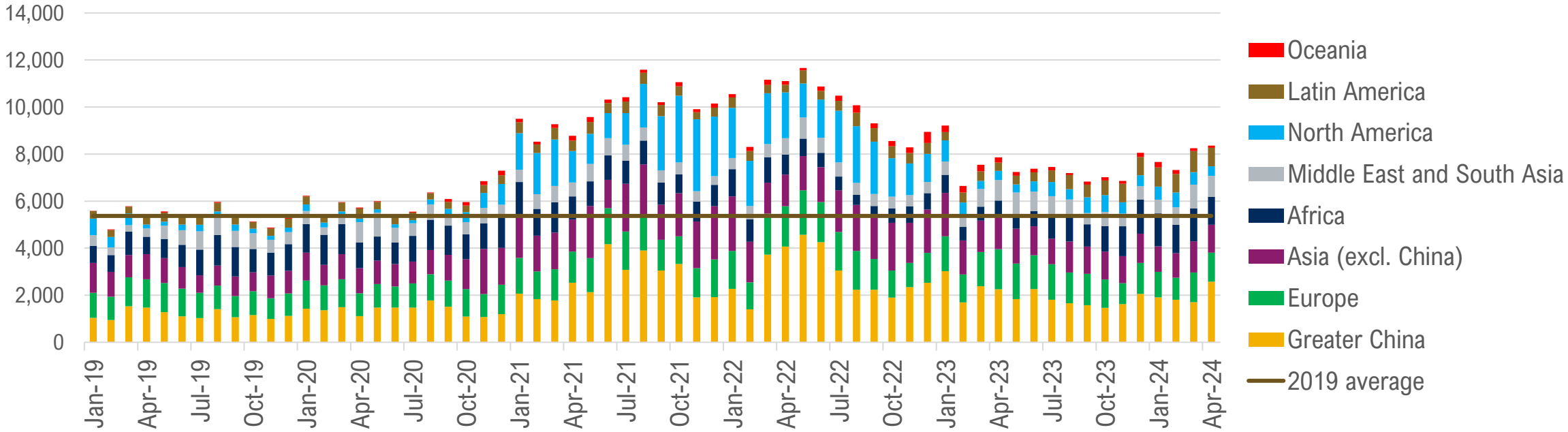
- Navigating, approaching and waiting vessels are one of the key sources of emissions in ports so any initiative to reduce it is crucial
- With regards to the decarbonisation enabling actions that a port can take to tackle this emission source:
  - ✓ Port incentives / reduced port dues for ships with lower emissions, for example IAPH's ESI (currently c. 6,400 ships registered and 74 ports worldwide)
  - ✓ The use of JIT vessel arrival systems / port call optimisation. Using smart port technologies to facilitate JIT has the potential to reduce emissions significantly
- In terms of guidelines, IMO Strategy on reduction of GHG emissions from ships (Resolution MEPC.304(72)), the IMO-Norway GreenVoyage 2050 project with GIA: Ship-Port Interface Guide and JIT arrival guide
- Drewry has analysed vessel waiting times across more than 190 ports to assess where implementation of JIT vessel arrival systems could have maximum impact

# JIT as a key decarbonisation action for ports and terminals

## Waiting time is wasted time

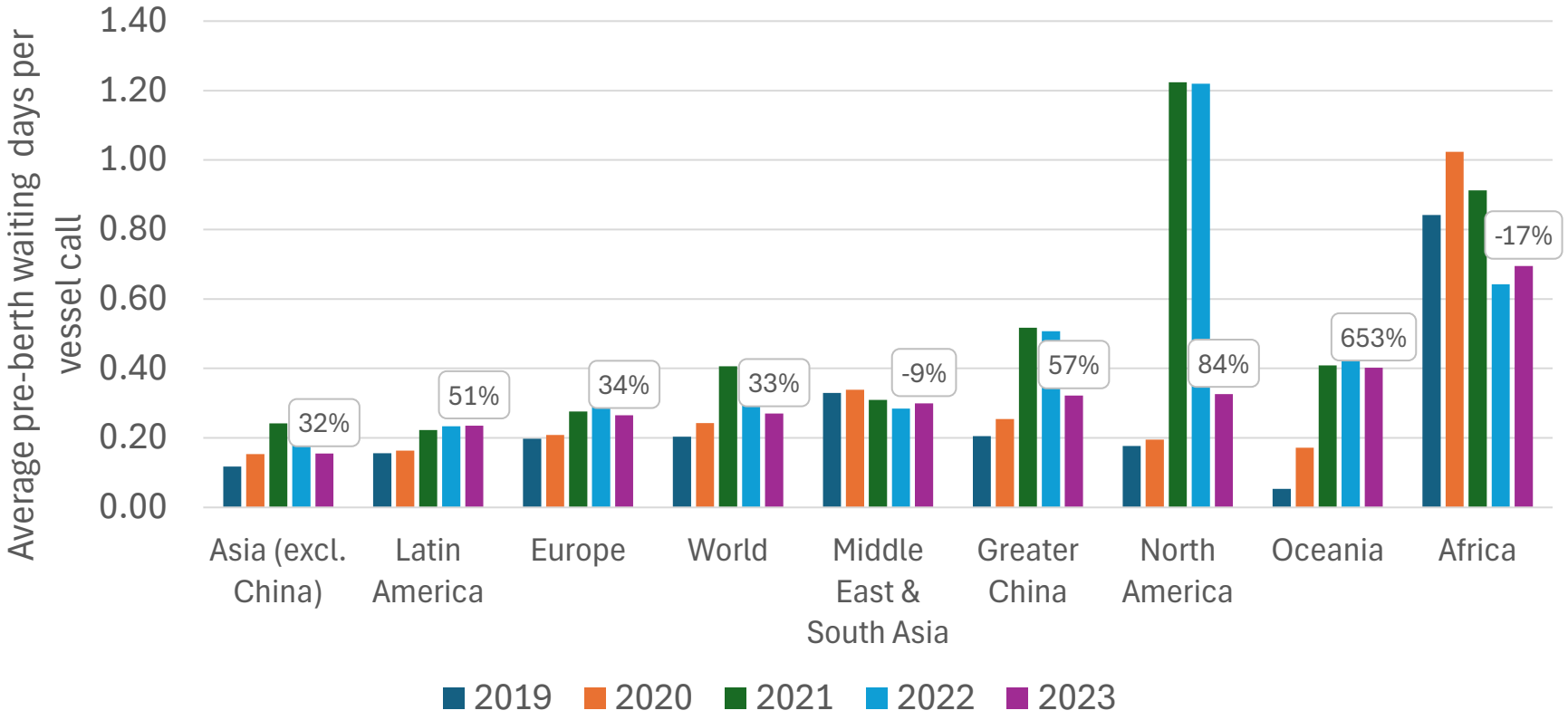
Drewry uses its proprietary AIS model to monitor the performance of over 190 container ports across the globe, which together handled 743 mteu in 2023 - over 85% of global container traffic. These ports received almost 331,000 container vessel calls in 2023, but in doing so incurred more than 89,000 days of pre-berth waiting time – an average wait of 6.5 hours per port call.

## Total pre-berth waiting time at a sample of global ports, January 2019- April 2024

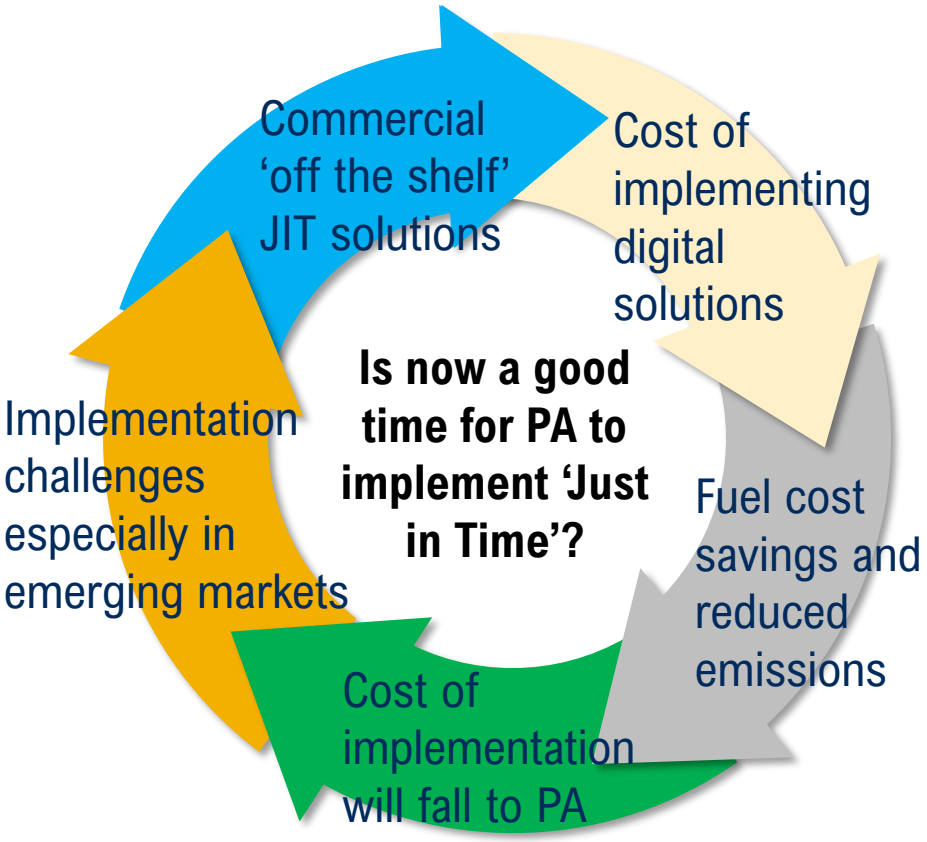


# JIT as a key decarbonisation action for ports and terminals

## Average pre-berth waiting per call by region, 2019-23



# JIT as a key decarbonisation action for ports and terminals




JIT does not address the underlying causes of the waiting time, such as low berth productivity

JIT should not be implemented in isolation, but instead as part of a comprehensive package of technology and other measures that address the underlying causes of port inefficiency

**JIT arrivals systems has the potential to contribute to the decarbonisation of shipping**

**Investment max impact: towards ports with a disproportionate amount of waiting time**

**AIS data provides a quick, simple and useful means to estimate the magnitude of emissions savings available via JIT**

# 4. Resilience of ports and terminals

# Resilience of ports and terminals: a competitive factor

# Resilience of ports and terminals: a competitive factor

## CURRENT

**2M Alliance**

MEDITERRANEAN SHIPPING COMPANY

MAERSK LINE

**Ocean Alliance**

CMA CGM

COSCO SHIPPING

EVERGREEN

**THE Alliance**

Hapag-Lloyd

HMM HYUNDAI MERCHANT MARINE CO., LTD.

ONE OCEAN NETWORK EXPRESS

YANG MING

## FUTURE

**MSC**

MEDITERRANEAN SHIPPING COMPANY

**Gemini Cooperation**

MAERSK LINE

Hapag-Lloyd

**Ocean Alliance**

CMA CGM

COSCO SHIPPING

EVERGREEN

**THE Alliance**

HMM HYUNDAI MERCHANT MARINE CO., LTD.

ONE OCEAN NETWORK EXPRESS

YANG MING

## Gemini Cooperation

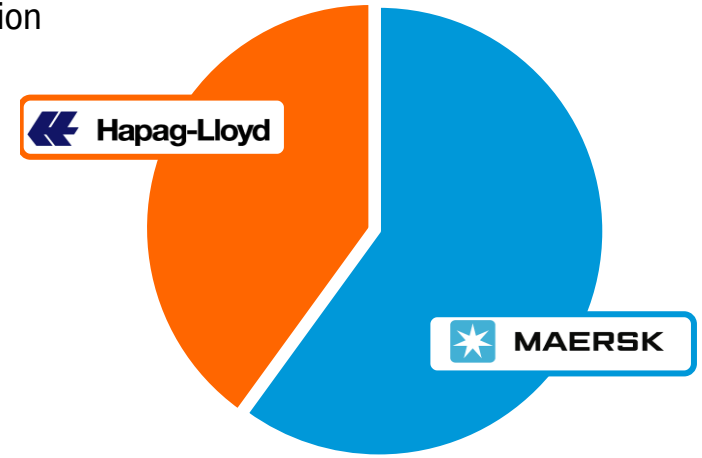
Joint complementary terminal portfolio

Larger eco-friendly fleet.

Focused on “best-in-class: schedule reliability + competitive transit times + reduced carbon footprint

Planned network: fewer mainline port calls and high-capacity shuttle services linking regional hubs with other gateway ports

Capacity contribution




Drewry

# Resilience of ports and terminals: a competitive factor


- Gemini focus on eco-friendly fleet: terminals to adapt to new types of visiting vessels
- Gemini to focus on schedule reliability: terminals to adapt by performing fast efficient operations
- Gemini to focus on reduced carbon footprint: terminals to adapt by offering decarbonised terminal operations

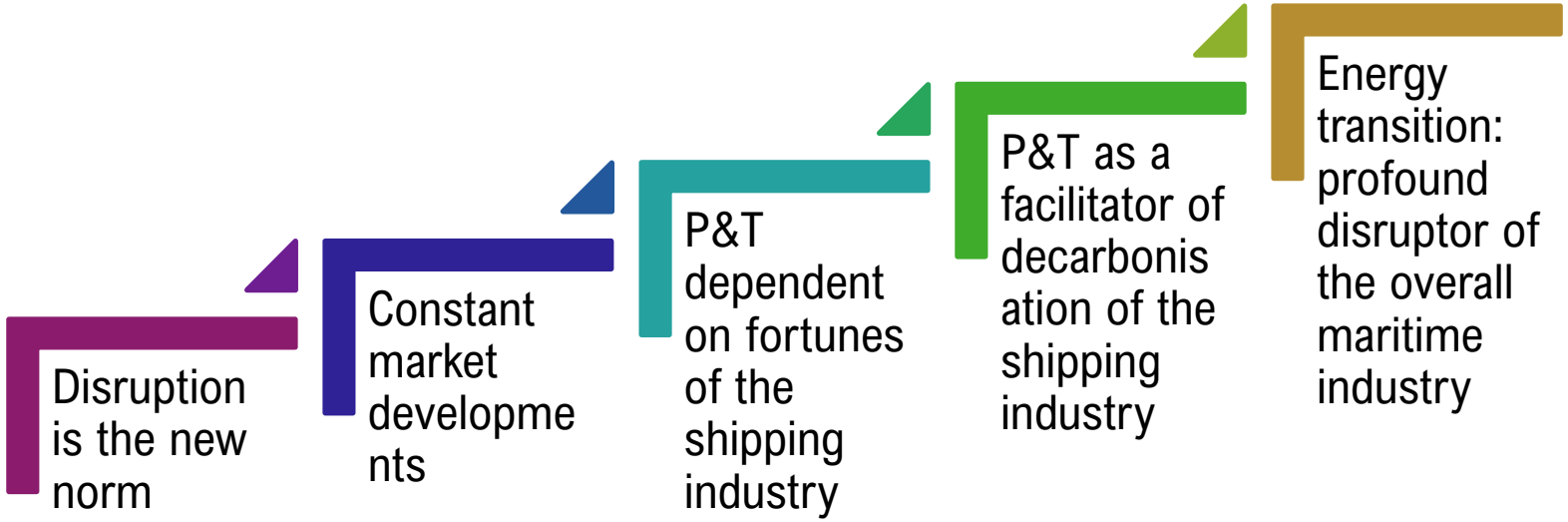
**TERMINAL CARBON FOOTPRINT AS A SOURCE OF COMPETITIVENESS**

- Market resilience: adaptability to shocks / structural changes
- Energy transition resilience

Drewry

# 5. Conclusion

# Conclusion




**Resilience of the ports and terminals sector is key**

**Fast green and smart as a competitive advantage**


LONDON DELHI SINGAPORE SHANGHAI