



LR

An introduction to shipping decarbonisation and ongoing key initiatives

**How to reduce carbon emissions
from maritime transport?**

Climate Action Accelerator Webinar

11th June 2024

Decarb HUB



MARITIME DECARBONISATION HUB

Who we are

A not-for-profit organisation.

An independent decarbonisation centre
formed in 2020 with a grant from Lloyd's
Register Foundation

More than a decade of expertise and research
on shipping decarbonisation

**Facilitator, connector, and knowledge
partner** focused on working with other
stakeholders to deliver impactful outcome

Group



Classification
society

Foundation



Global Charity

Maritime
Decarbonisation
Hub

Independent
decarbonisation
centre



MARITIME DECARBONISATION HUB

Our mission

To accelerate the **safe and sustainable decarbonisation** of the maritime industry.

3 Strategic Goals



safe adoption of sustainable zero carbon marine fuels.













Increase uptake of sustainable zero carbon marine fuels.



Influence the appropriate and effective policy and regulations.

Our Team

	Safety and Risk	Fuel First Movers Program	Zero Carbon Fuel Monitor	Strategy & Communications
 James Forsdyke Managing Director	 Andy Franks Senior Decarbonisation Risk Specialist	 Carlo Raucci Director, Sustainable Fuels and Strategy	 Ahila Karan Senior Lead, Green Initiatives	 Natassa Kouvertari Project Manager
	 Amelia Hipwell Innovation Manager	 Charlie McKinlay Fuels & Technologies Lead	 Tan Hanqiang Intern	 Andrew Keevil Strategy Development Manager
				 Magdalene Tan Marketing & Communications Manager

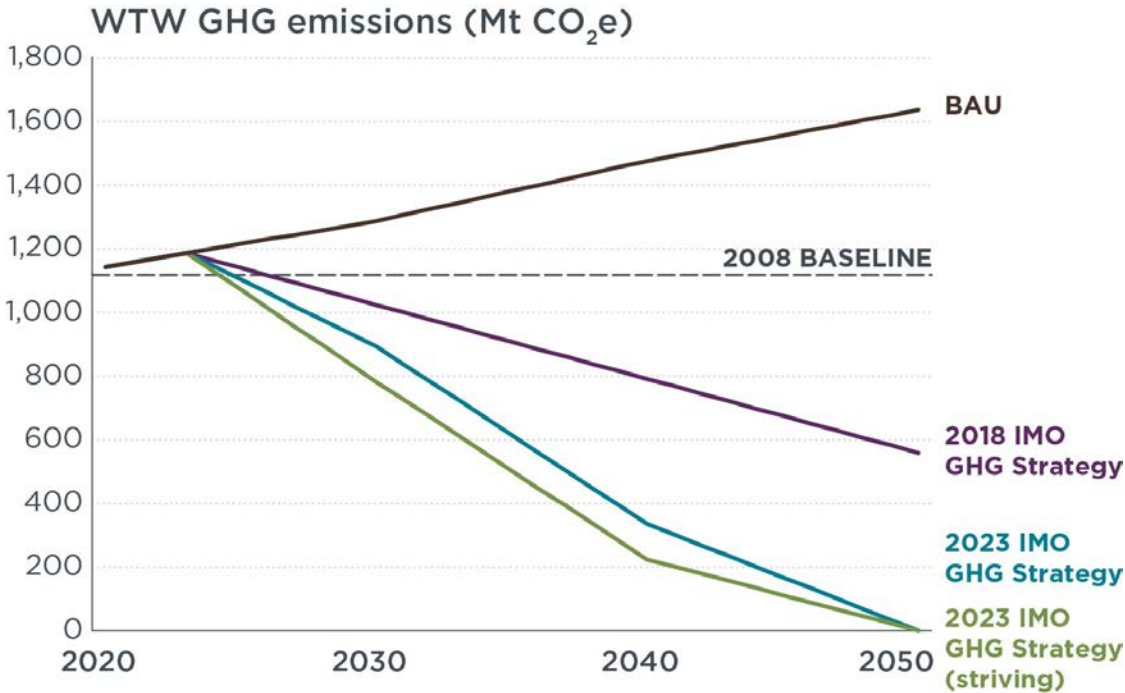
Why we need Shipping Decarbonisation

- Shipping today produces emissions equivalent to those of a country like Japan, which is among the top 5 countries with the highest emissions.
- The yearly emissions account for approximately 3% of the total global CO2 emissions.
- If no action is taken, **the proportion of emissions from shipping could increase significantly** as other sectors transition to decarbonisation.



Photos credits: from the web

A policy-driven transition



Adapted from ICCT



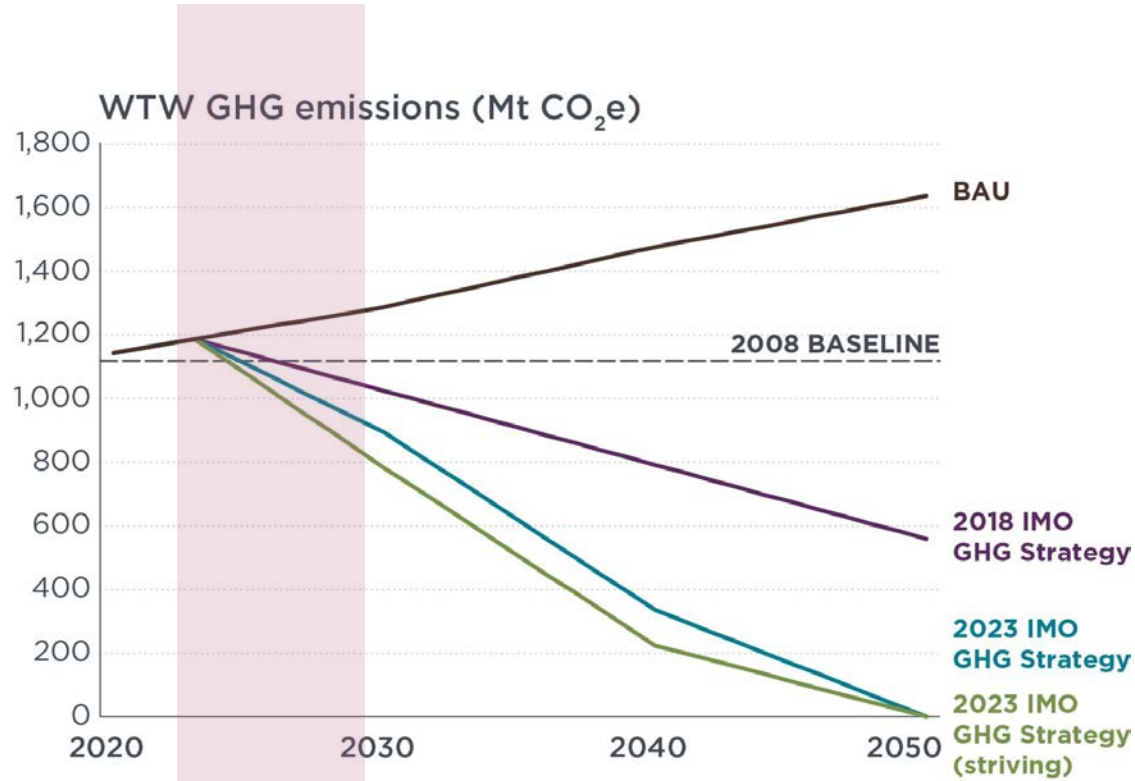
Source: lloydslist.com/



Source: IMO website



A policy-driven transition



Adapted from ICCT

The timeframe when we need to see a change in trend

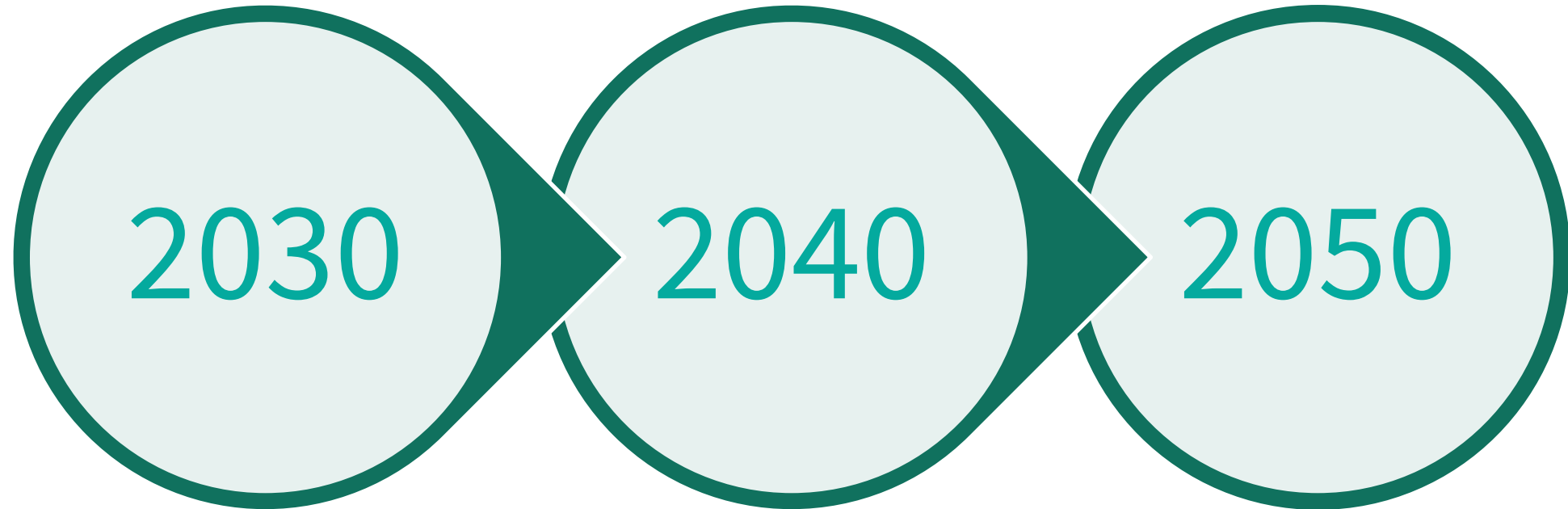


Source: lloydslist.com/



Source: IMO website

IMO GHG Strategy Targets



- 40% reduction of CO² per transport work
- 5% uptake of zero emissions fuels
- Checkpoint: 20% reduction of total GHG emissions, striving for 30%

- Checkpoint: 70% reduction of total GHG emissions, striving for 80%

- Net-zero GHG emissions by or around 2050

Zero/near zero carbon fuels are critical to reach the targets

Operational interventions

Up to 20%

- Speed reduction
- Utilisation
- Just in time arrival

Technical energy efficiency interventions

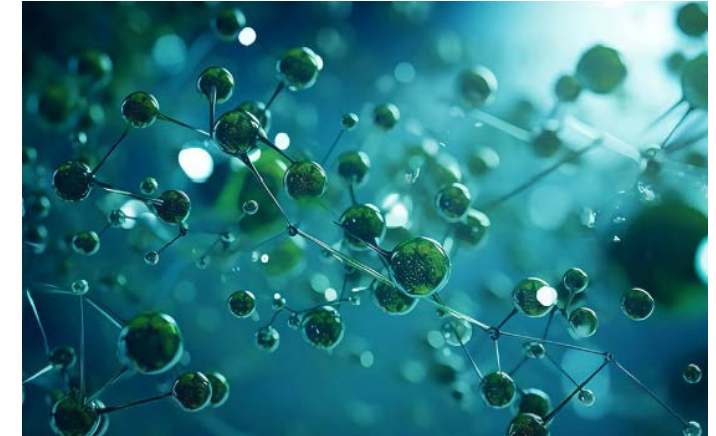
Up to 20%

- Hull coating
- Hull optimisation
- Air lubrication
- Cleaning
- Waste-heat recovery
- Hybrid
- Fuel cells

Fuel switch

Up to 100%

- Biofuels
- Methanol
- Ammonia
- Methane
- Hydrogen
- Wind power
- Nuclear
- CCS



Different potential with different types of contribution, however, interconnected to each other

Critical window for change

- Enable the change in trend
- Pave the way to long-term solutions and regime shift
- Accelerate uptake of sustainable fuels (zero /near zero carbon fuels)



Source: justhourglasses

Zero Carbon Fuel Monitor

The Zero Carbon Fuel Monitor (ZCFM) is a tool that monitors the readiness levels of different decarbonisation solutions

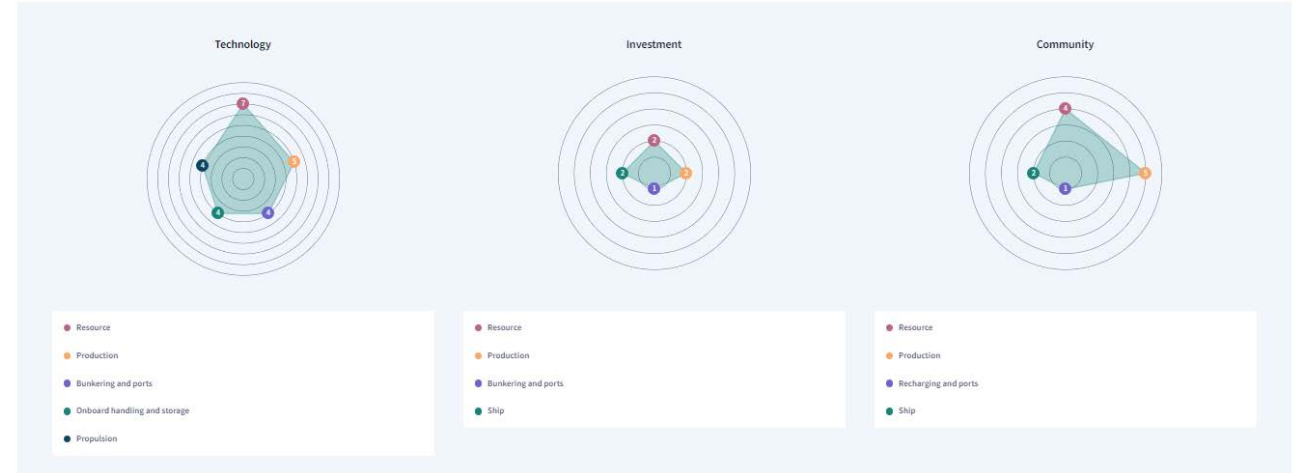
It provides an overview of the current status and highlights potential areas of interventions

[Zero Carbon Fuel Monitor - Examine data on marine fuels | LR](#)

Ammonia	Blue ammonia
Biodiesel	Biodiesel (FAME)
Electrification	Electrification (batteries)
Hydrogen	E-hydrogen
Hydrogen	Blue hydrogen
Methane	Liquified bio-methane
Methane	Liquified e-methane
Methanol	Bio-methanol
Methanol	E-methanol
Nuclear	Nuclear (PWR)
Nuclear	Nuclear (Micro-reactors)
Nuclear	Nuclear (Molten salt)
Nuclear	Nuclear (LMCRs)
Nuclear	Nuclear (HTGRs)

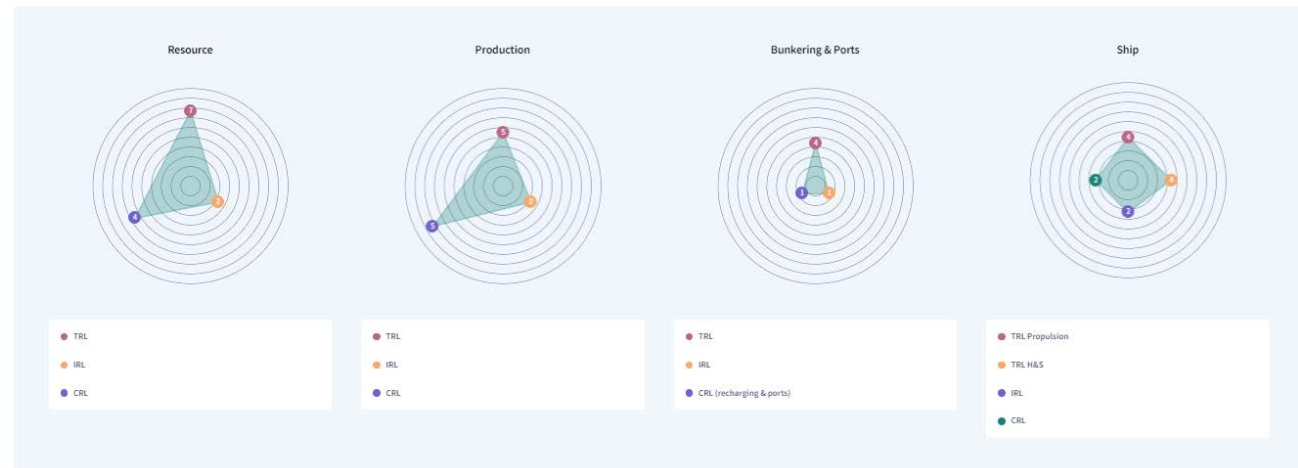
E-ammonia

View data by: Readiness Level Supply chain Current state Readiness over time



E-ammonia

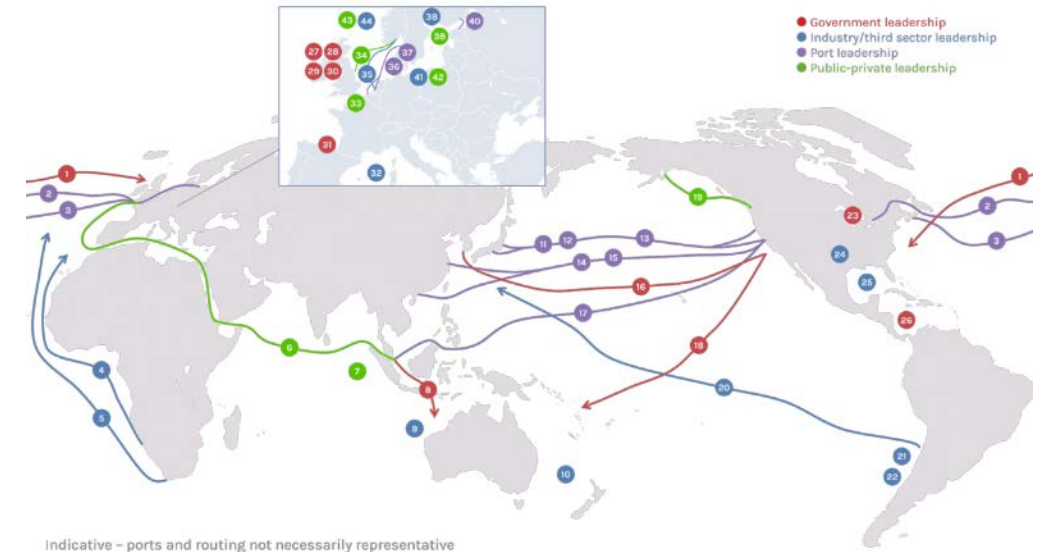
View data by: Readiness Level Supply chain Current state Readiness over time



More than forty Green Shipping Corridors are active today



Progress Report on GSC 2023 GMF



The key purpose of green shipping corridors is to initiate the uptake of sustainable fuels in shipping

The Green Corridor Cluster – the Silk Alliance



The Silk Alliance Green Corridor Cluster focuses on a regional fleet operating across the Indian and Pacific Oceans with the potential to bunker in Singapore in future. The regional cluster approach is designed to create a scalable and stable demand signal to drive the development of regional fuel supply and bunkering infrastructure.



10 million
CO₂^e tons



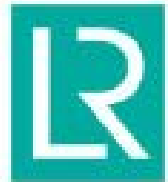
3 million
HFO^e tons



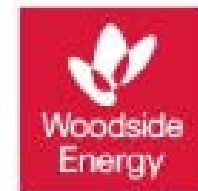
The green corridor is an A-to-A route. (Singapore-to-Singapore)



The Green Corridor Cluster – the Silk Alliance



Centre for
Maritime Studies



Silk Alliance's achievements in the past 2 years



2022

2023

2024

2025



Launch of The Silk Alliance

May 2022



Onboarding new members

April 2023



Launch of website and logo

October 2023



Released Implementati on plan



Workshop in April to discuss execution

April 2024



Oct 2022



Zero Emissions Maritime Buyers Alliance



- Accelerate commercial deployment of zero-emission (ZE) shipping solutions
- Enable economies of scale for freight buyers and suppliers
- Help cargo owners maximize emissions reduction potential beyond what any one freight buyer could accomplish alone

Round 1

September – November 2023:
RfP open

*20+ members sought 600k+ TEU
complying with ZEMBA's LCA
guidelines and ZE Fuel definition*

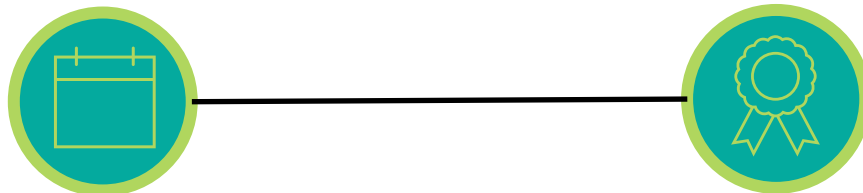
April 2024

*Winner announced
more than a dozen ZEMBA
members have collectively
committed to purchase the
environmental attributes*

ZEMBA members: including Amazon, Patagonia, and Tchibo alongside Bauhaus, Brooks Running, DB Journey, Green Worldwide Shipping, lululemon, Meta, New Balance, Nike, REI Co-op, and Sport-Thieme

Winner Carrier: Hapag-Lloyd

Fuel: Bio-methane



Zero Emissions Maritime Buyers Alliance



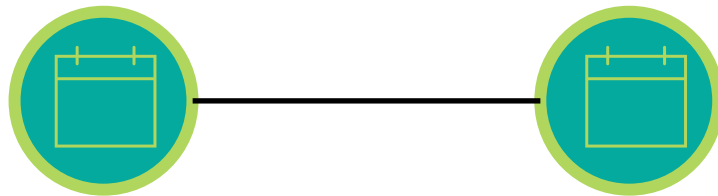
Round 2

- The LR Maritime Decarbonisation Hub continues to join forces with ZEMBA to deliver the second tender
- ZEMBA is seeking information on the development of zero emission fuels and technologies – particularly e-fuels

May – June 2024:
RfI open

Late 2024
RfP

Seeking information to shape the
second tender



- The survey is live as of, May 30th, and will be open through June 21st.

Request for Information Surveys



[ZEMBA Request for Information \(RfI\) for Maritime Fuel Suppliers \(google.com\)](#)



[ZEMBA Request for Information \(RfI\) for Ship Operators \(google.com\)](#)



Regional synergies and access to public and private funds are key enablers for developing the market for sustainable fuels

- Foster collaboration across regional stakeholders and public and private actors
- Provide recommendations and drive commitments from governments and key industry stakeholders



Progress & Next Steps

- **Launch at Singapore Maritime Week, April 2024** -- roundtable held with energy and transport ministry and departmental representatives
- **Launch (TODAY) Summary Statement** -- with key takeaways from first roundtable & commitments from ministries
- **Roundtable 2** -- with private and ministerial reps across energy & maritime (Sep 2024)
- **Future Dialogues** -- continued high-level ministerial roundtables at flagship regional events and COP29

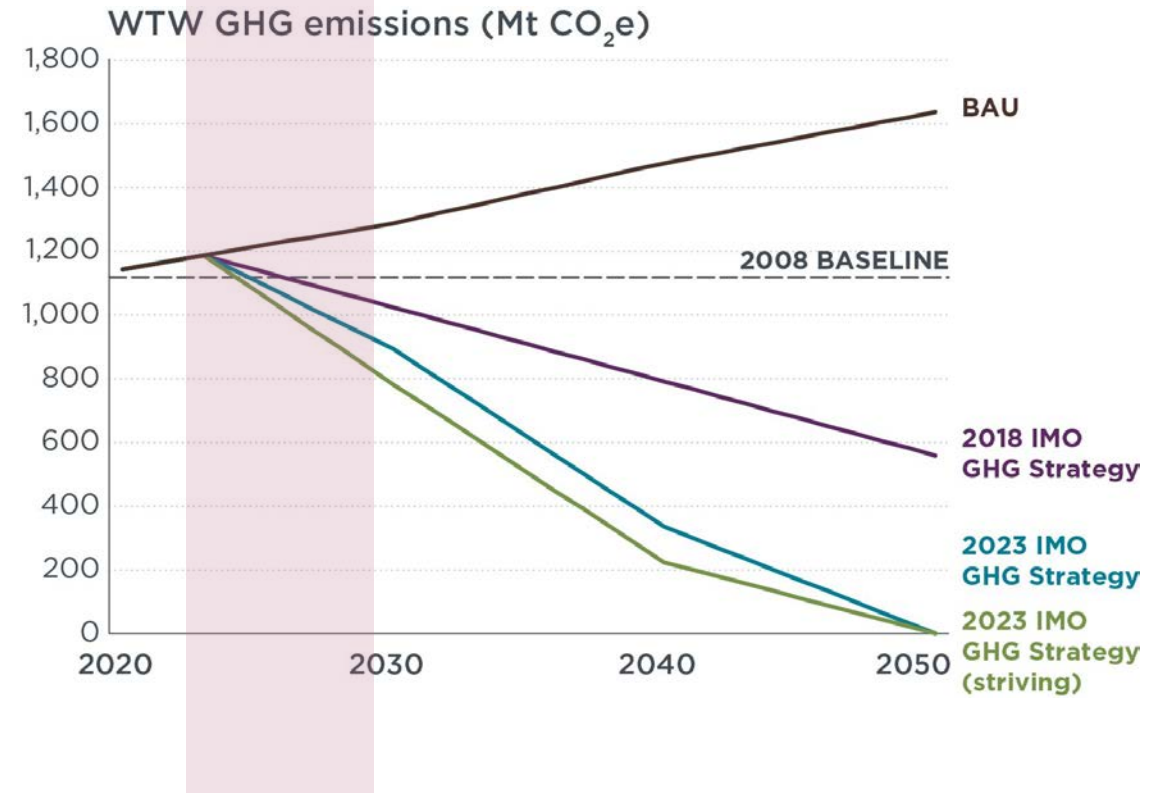
A Common denominator



Maritime
Fuel Supply
Dialogues

Within this timeframe, policy and voluntary actions will shape the course of the transition.

A collaborative effort is the key to all first movers' initiatives



What actions can you take today?

- ✓ Consider to pay a green premium
- ✓ Evaluate the decarbonisation strategies of your partners, and establish collaborative effort where strategies can be shaped together across the entire supply chain (e.g. join alliances)
- ✓ Be creative in exploring new business models, and procurement practices based on a vertically integrated approach
- ✓ Follow policy debate at IMO, EU and national level
- ✓ Promote long-term solutions and communicate externally your expectations

Maritime Decarbonisation Hub



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Sustainable Fuels and Strategy

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