

Decarbonization Change and Shifting Fundamentals

Maersk Broker Advisory Services

Vancouver - 2021



MAERSK BROKER
ADVISORY SERVICES


The Maersk Broker universe

THE MAERSK FAMILY




MAERSK BROKER
SHIPBROKERS SINCE 1914

MAERSK BROKER IS A PRIVATELY OWNED, EXPERIENCED
AND INDUSTRY-LEADING SHIPBROKER



A.P. MOLLER
FOUNDATION



A.P. MOLLER
HOLDING



**A.P. MOLLER -
MAERSK**

- MAERSK Line
- APM Terminals
- DAMCO
- Svitzer
- MAERSK Container Industry
- MAERSK Supply Services
- MAERSK Training



**MAERSK
TANKERS**



**OTHER
COMPANIES**

- A.P. Moller Capital
- Maersk Product Tankers
- Maersk Drilling
- Danske Bank

The Maersk Broker organisation



+110 years of experience



16 offices in 14 countries



+250 brokers/advisors & staff



In-house advisory and research



**OUR HERITAGE, GLOBAL REACH AND PRESENCE IN ALL MARITIME SEGMENTS
EXPLAIN WHY WE ARE KNOWN AS THE SHIPBROKERS THE WORLD TRUSTS**



MAERSK BROKER ADVISORY SERVICES

Consultancy



Valuations



Research



Decarbonization



Capital



Corporate Finance



MAERSK BROKER SHIPBROKING SERVICES

Container



Crude & Product



Offshore



Sale & Purchase



Dry Bulk



Chemical & Specialized



LNG/LPG



Newbuilding



How are we positioned in this transition

STARTING POINT

NAODAN
CHARTERING

MAERSK BROKER
SHIPBROKERS SINCE 1914

MAERSK BROKER
BULK CHARTERING

MAERSK BROKER
ADVISORY SERVICES

OUR ENGAGEMENT

- SUPPORT THE SHIPPING INDUSTRY AND ITS STAKEHOLDERS IN THE GREEN TRANSITION
- FIRST BROKER SHOP TO BECOME MEMBER OF 'GETTING TO ZERO COALITION'
- SIGNATORY OF THE 'CALL TO ACTION' STATEMENT



OUR CONTRIBUTION

- WE HAVE ENTERED A PARTNERSHIP WITH MCKINSEY TO DEVELOP AN OPTIMIZATION MODEL THAT PROVIDES A TAILOR-MADE ROADMAP FOR COST-EFFECTIVE DECARBONIZATION OF ENTIRE FLEETS.



MAERSK BROKER
ADVISORY SERVICES


McKinsey
& Company

Jesper Bo Hansen – Managing Director

WORK EXPERIENCE

2017	DK	Managing Director	Maersk Broker Advisory Services	
2014	US	Vice Chairman Maritime	Cerberus	
2013	US	Managing Director	Heidmar	
2005	DK/US	Reg. Managing Director	Torm	
1997	DK/HK	General Manager	Maersk Broker	
1991	DK	Management Trainee	A.P. Møller - Maersk	

EXECUTIVE BOARD EXPERIENCE

2020-2015	DK/US	Board Member	Team Tankers	
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WORK ON THE GREEN TRANSITION



Together with Maersk Broker, Jesper has spent the last 18 months developing knowledge and opinions on decarbonizing the maritime industry



Contributing to the development of a ship fleet decarbonization tool with Mckinsey & Company



Established decarbonization partnerships with, among others, 'Getting to Zero coalition'



Initiated decarbonization reports tailored for clients on e.g.:

- Alternative fuels
- Economics of different fuel options
- Commercial thoughts on future fuels



AGENDA

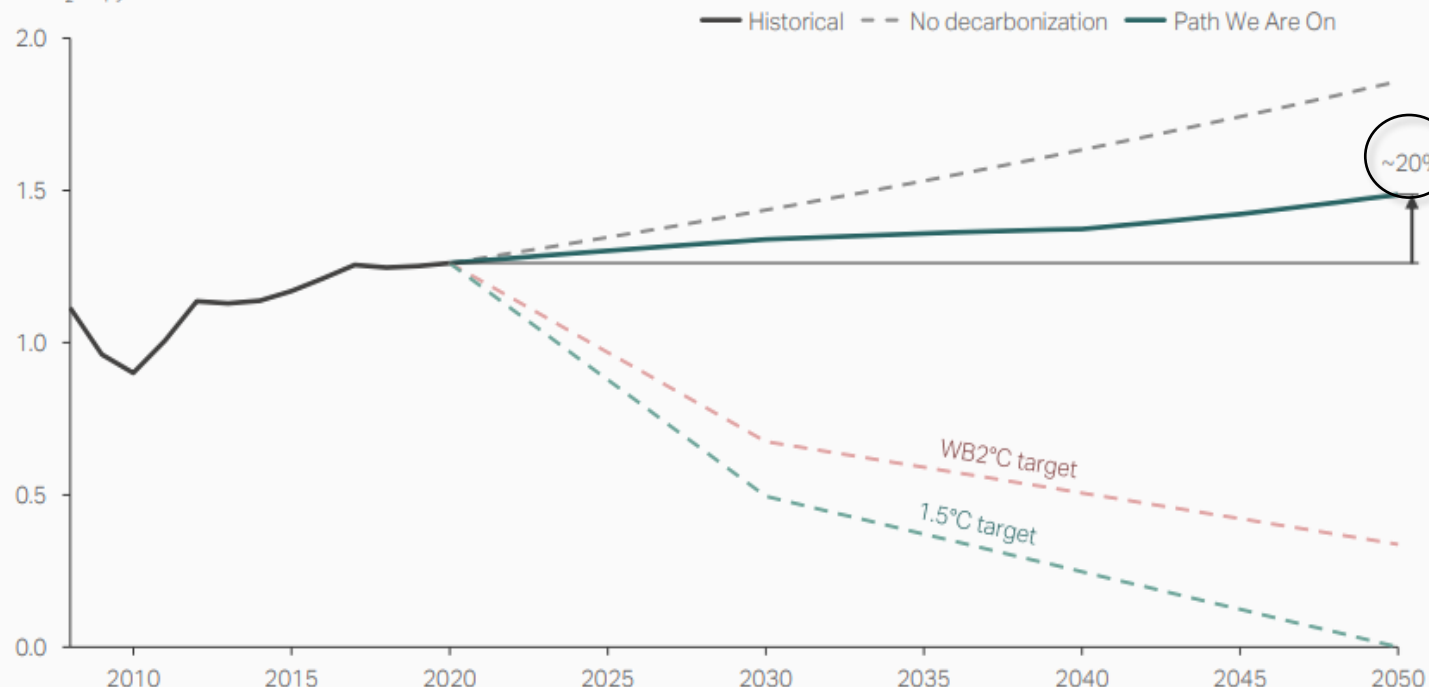
What initiatives are pushing the decarbonization agenda initiatives

The initiatives in a tomorrow's context

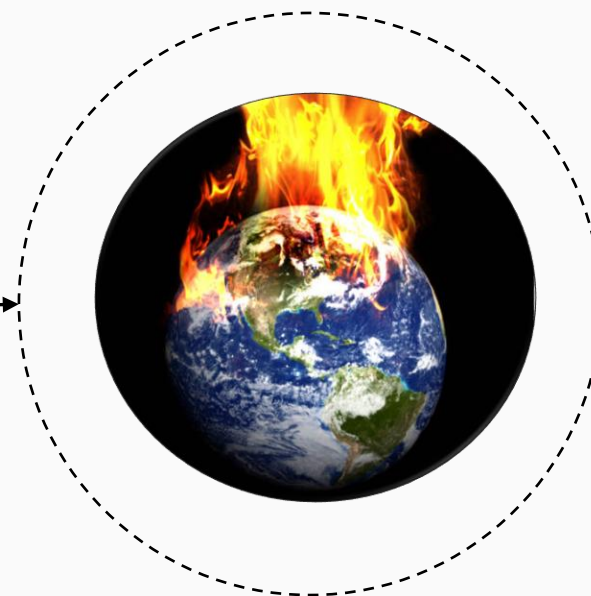
We are heading for an increase in maritime GHG emissions despite current industry-wide efforts

Current decarbonization efforts are outplayed by growing trade and large fuel cost differences

WTW Maritime emission pathways¹
GtCO₂-eq/year



CURRENT MARITIME ABATEMENT ACTIONS ARE INSUFFICIENT



An **ideal 1.5°C target**: ~45% emissions reduced by 2030 and reaching net zero by 2050

A **well below 2°C (WB2°C)** above pre-industrial levels"; targeting ~25% emissions reduction 2010-2030 and reaching net zero by 2070

Update from COP26

The main take aways relevant for shipping was...

1 Increasing focus on shipping

- For the first time, the shipping industry was a separate agenda point at COP26
- A significantly pressure by policy makers and industry stakeholders was put on IMO to raise its ambitions and speed up the process

2 Zero emissions by 2050 – Policy makers

DECLARATION ON ZERO EMISSION SHIPPING BY 2050

CLYDE BANK DECLARATION
• Green corridors

DHAKA-GLASGOW DECLARATION
• 1.5 C

3 Green push – Industry stakeholders

FIRST MOVERS COALITION
• Only use zero emission fuels in 2040

JUST TRANSITION MARITIME TASK FORCE
• Protect and educate seafarers on green transition



MEPC 77

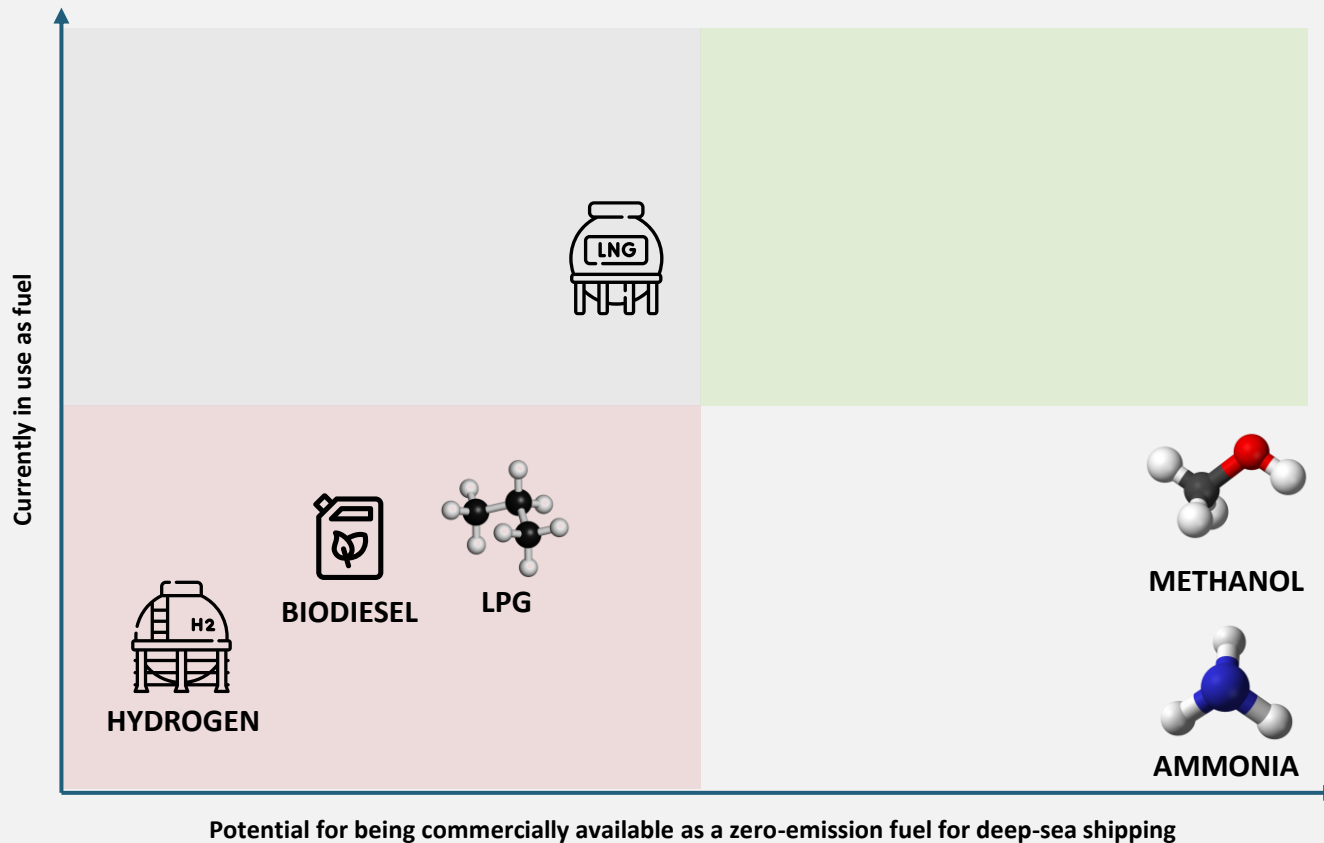


Several alternative fuels are in play

Improved operational efficiency will not be enough – the industry will need zero-emission fuels

To reach IMO's emission reduction target, zero-emission vessels and by association **zero-emissions fuels are a requirement** since improvement in energy and operational efficiencies – while critically important – is not enough.

The answer will probably have to be a mix of energy efficiency and new fuels – but there is no clear answer to which fuel will be the preferred one.



For illustrative purposes

Methanol: Most methanol produced today is made from coal or natural gas and methanol as a fuel is only used for methanol carriers. (NB orders of non-methanol carriers with Methanol DF engines are placed)

Ammonia: Engine and fuel tank technologies will not be ready before at least 2024 and currently most ammonia is produced from natural gas.

LNG: LNG is commercially available but is not a zero-emission fuel unless it is replaced by biomethane or synthetic methane. There is large uncertainty of cost and availability of these.

Biodiesel: Diesel is a complex molecule and can therefore be difficult to produce and scale-up at a competitive rate.

LPG: Currently only used as a fuel on LPG carriers. It has no clear way to being zero-emission unless seen as an intermediate step towards ammonia

Hydrogen: High cost of handling and storing liquid hydrogen and extensive space requirements on board due to low energy density.

Others:

- **Batteries** as primary propulsion will be too heavy for Deepsea shipping
- **Fuel cell** technologies are currently not ready for application

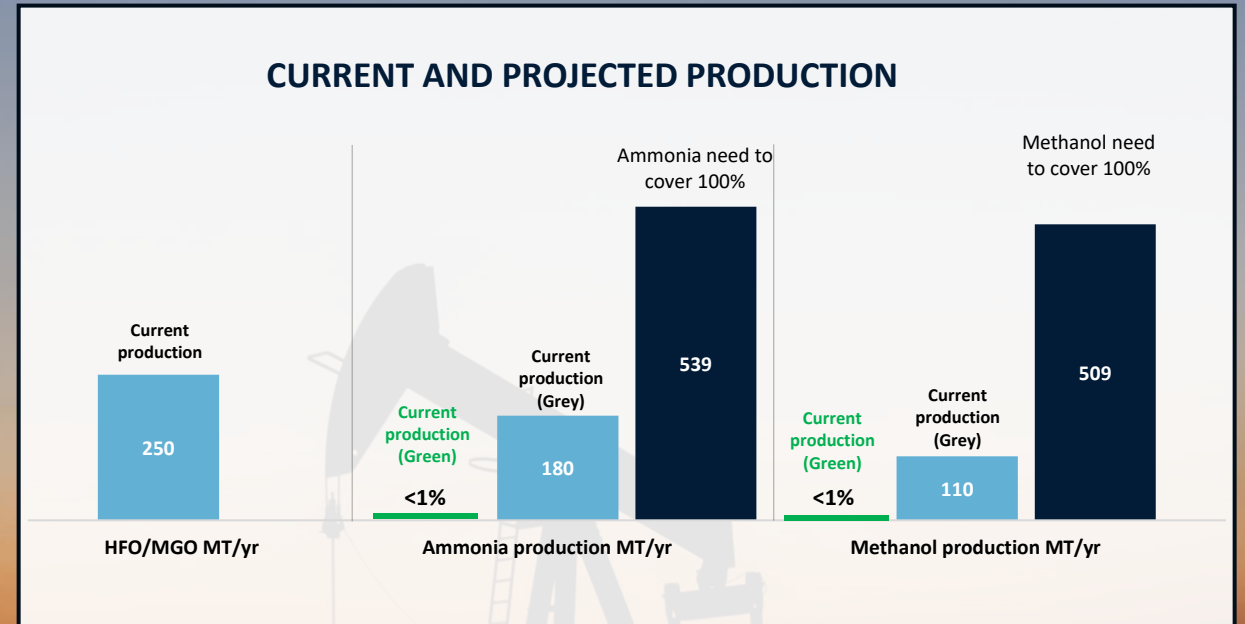
The two most promising green fuels... Currently

GREEN AMMONIA:

- Zero emitting fuel when produced using only water, renewable energy and air.
- Considered as the most scalable fuel option in the long-term
- A commoditized product with a current infrastructure in place.
- Easier to handle than hydrogen and LNG

GREEN METHANOL:

- Proven technology with ease of use throughout the value chain
- Lower retrofitting or newbuilding cost
- Easy to repurpose existing infrastructure and leverage on established infrastructure



Initiatives pushing the industry to decarbonize



REGULATIONS



FINANCING



POSEIDON PRINCIPLES

... ?



CHARTERERS



SEA CARGO CHARTER



... ?



COST OF CARBON



AN EMISSION TRADING SCHEME (ETS) SYSTEM ...

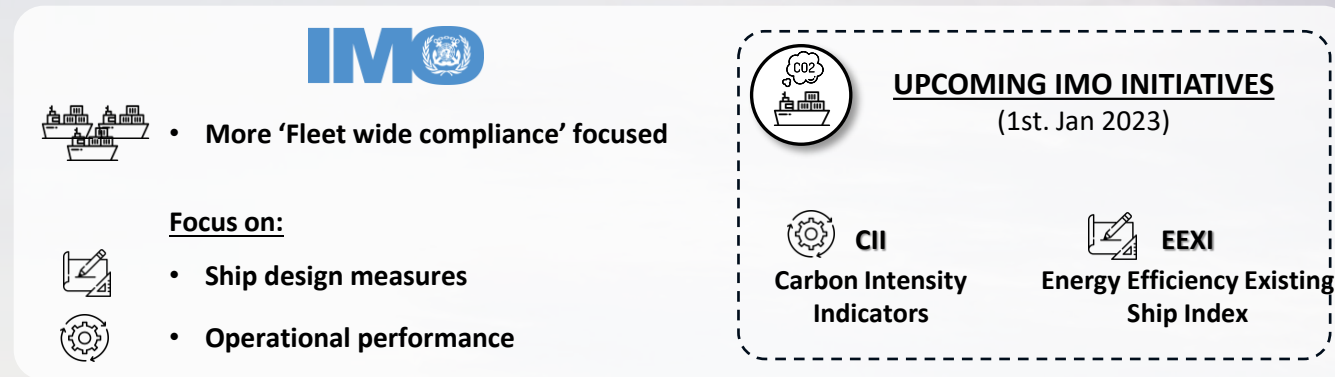
... ?



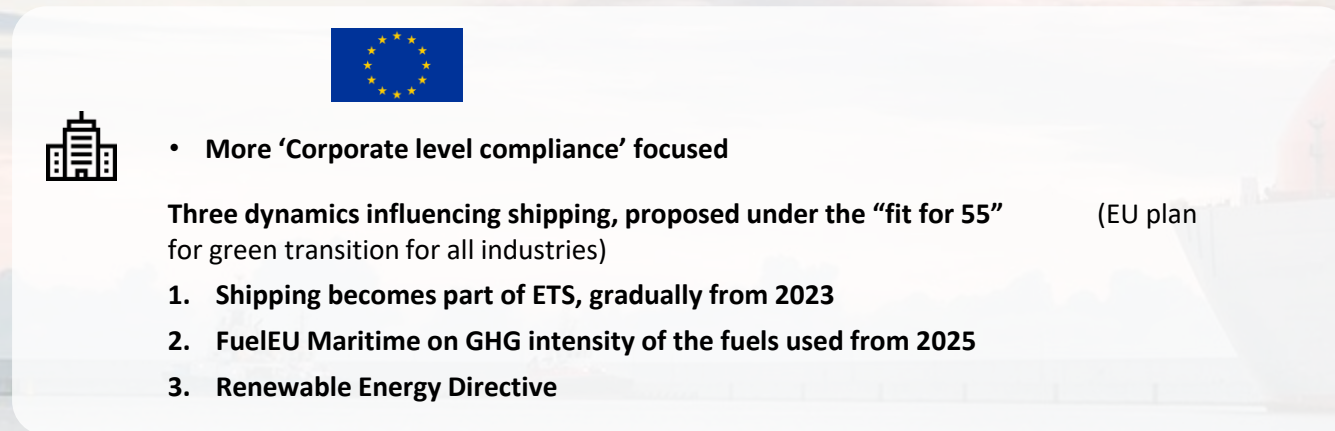
A CARBON LEVY ...

The regulative landscape shows sign of decentralization

IMO'S LACK OF PROMPT ACTIONS AS A GLOBAL AUTHORITY . . .



. . . HAS INITIATED OTHER AUTHORITIES TO IMPLEMENT OWN INITIATIVES TO DECARBONIZE THE SHIPPING INDUSTRY



Relevant movement within financing of shipping



WHO

The Poseidon Principles are a global framework for assessing and disclosing the climate alignment of financial institutions' shipping portfolios. They establish a common, global baseline to quantitatively assess and disclose whether financial institutions' lending portfolios are in line with adopted climate goals.



AMBITION

- Along with IMO's 50% reduction of emission from 2018 levels
- However, It is highly expected they will change trajectory to NET ZERO by 2050



IMPACT

Poseidon Principles constitutes **28 leading banks with a total lending of \$185 billion to shipping**



WHO

A coalition of the world's biggest investors, banks and insurers that commit to use their capital to decarbonize all lending and investment activities. This initiative makes limiting climate change central focus of most major financial decisions. GFANZ is anchored in ensuring credibility and consistency where firms' net-zero commitments must use science-based guidelines and cover all emission scopes, and commit to transparent reporting and accounting in line with Race to Zero criteria.



AMBITION

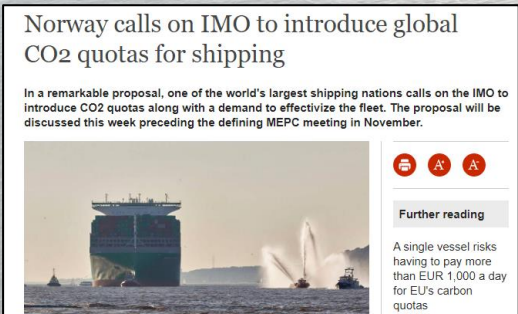
Net-zero in their investments by 2050, cover all emission scopes, include 2030 interim target settings



IMPACT

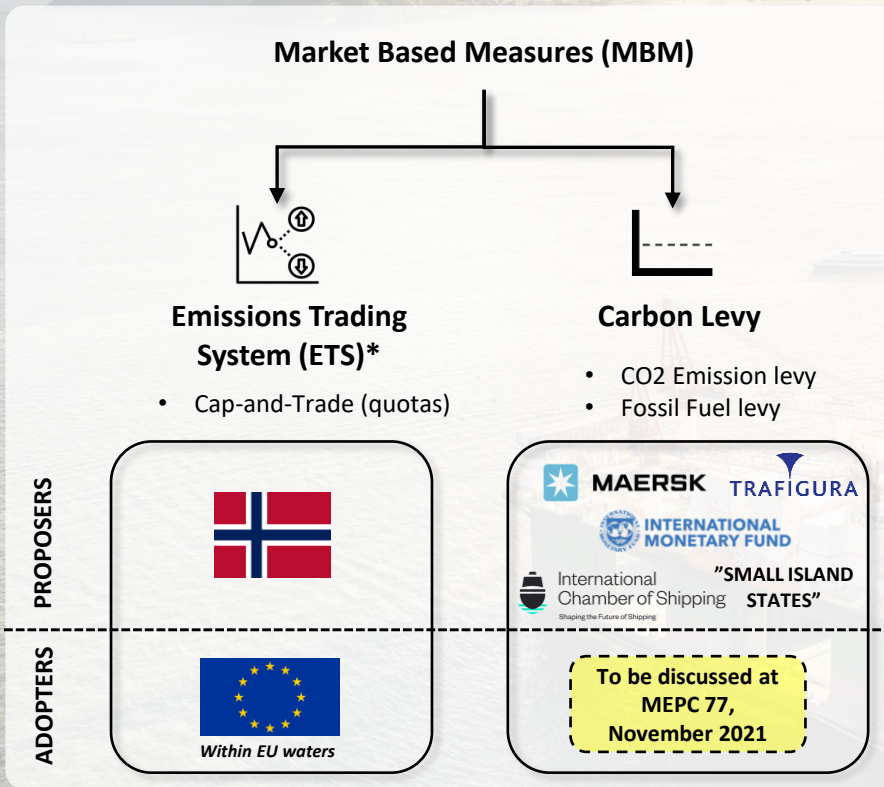
The United Nations Glasgow Financial Alliance for Net Zero, is **made up of 450 banks, insurers and asset managers in 45 countries and collectively control \$130 trillion**

A cost on carbon can catalyze the transition, but no clear path



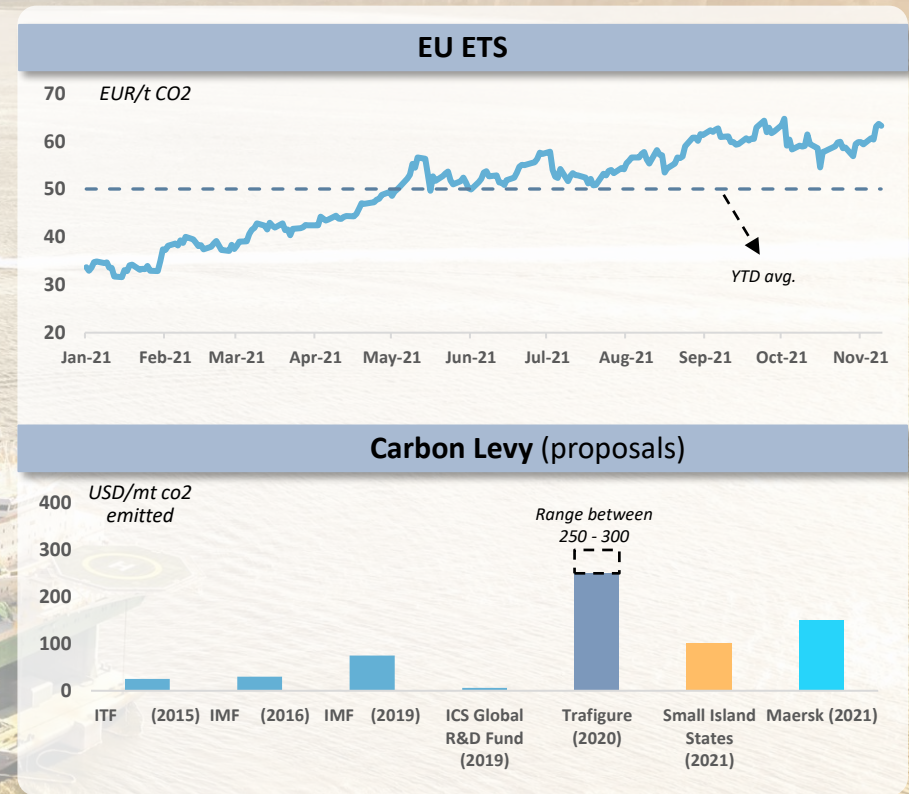
OVERVIEW

IMO has agreed on implementing market-based measures (MBM) to reduce carbon emissions. There are two main proposed MBMs which provides financial incentive and options to nudge the shipping industry towards sustainable alternative fuels



CONSIDERATIONS

The implementation of the two measures can also be combined with other initiatives such as: A carbon levy combined with progressive reduction targets, for the purpose of having control with actual emissions



Collective initiatives get charterers & tonnage providers to initiate their decarbonization efforts – Though, confusion rises



By 2040 ocean freight services powered by scalable zero-carbon fuels



Group of cargo owners have formed the group 'coZEV2040'



Only use zero-carbon ocean freight by 2040

9 founding cargo owners*



First Movers Coalition

Consistent with the Paris Agreement and aligned with 2040 target and zero-carbon fuel criteria set by coZEV



Carriers: At least 5% of their deep-sea shipping will use zero-emission fuels by 2030.



Cargo owners: At least 10% of the goods shipped internationally will be on ships using zero-emission fuels by 2030, on the way to 100% by 2040.

Selected signatories

34 Total Signatories*



SEA CARGO CHARTER

IMO's 50% emission reduction by 2050



Global framework assessing and disclosing emission



Chartering activities aligned w. adopted climate goals

Applicable to all bulk charterers as well as the disponent owners and all charterers in a charterparty chain.

23 signatories*



SELECTED DECARBONIZATION INITIATIVES



Help ocean freight carriers/shippers track and benchmark their environmental performance



Methodology for CO2 calculations



Become global standard for container shipping measuring



Enables shipping customers to review and compare carrier's environmental performance

Selected Shippers



Selected carriers



Selected Forwarders



Sustainable shipping demands come closer – BMW case



BMW CASE

BMW Group has now set emissions reduction targets per vehicle for 2030...

- 20% in its supply chain including transport logistics
 - Further 80% from production
 - 40% in the vehicle usage phase
- ... from a base year of 2019.

Selected links in the supply chain

**Energy Supply for
Production**



**Transportation of
Raw Materials**



**Transportation of
Components**



**Car
Transportation**



CHARTERERS



AGENDA

What initiatives are pushing the decarbonization agenda initiatives

The initiatives in a tomorrow's context

These initiatives push towards a 'Ticket-to-Play' scenario



Before complying and decarbonizing your fleet, you need to understand your position to map your cost-effective strategy

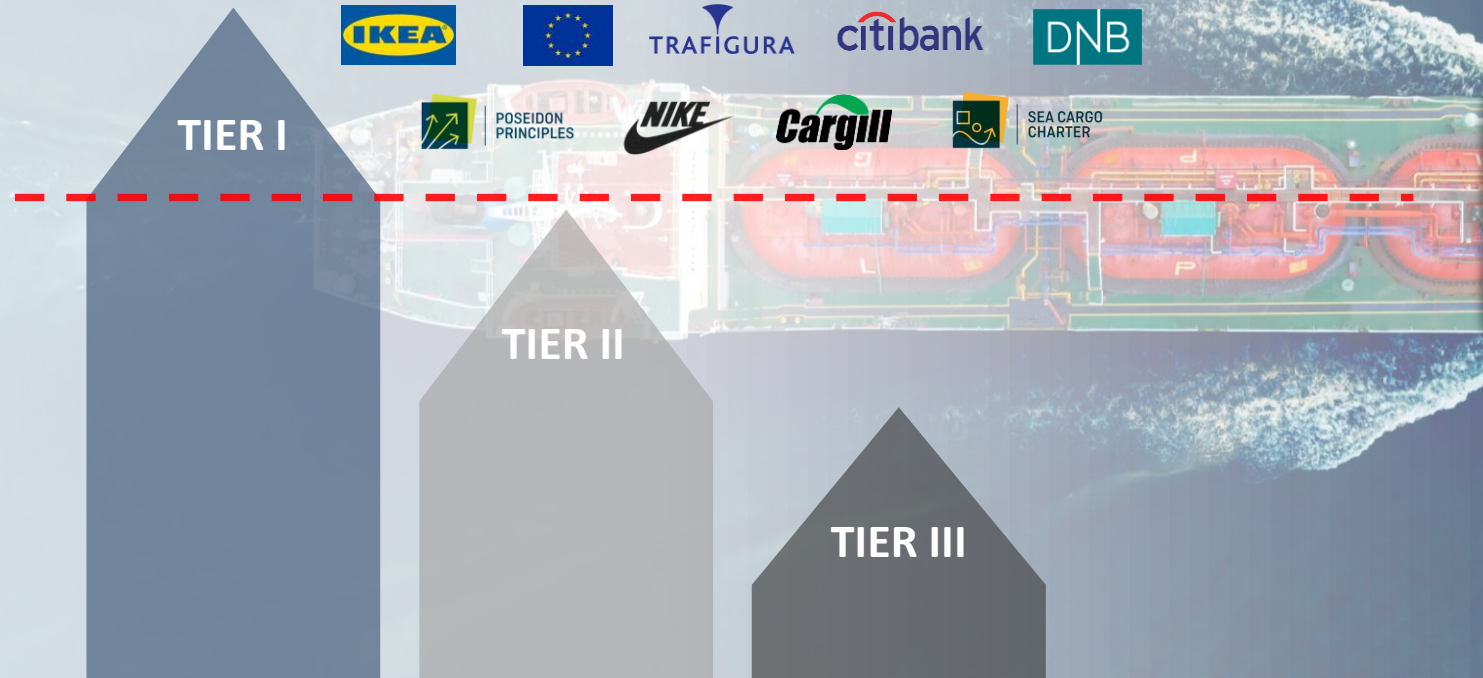


Complying and exceeding regulations will become a "ticket-to play"

A tiered market based on decarbonization engagement

... development of a tiered market on chartering or financing could lead to lower earnings, less favorable financing terms & lower asset prices

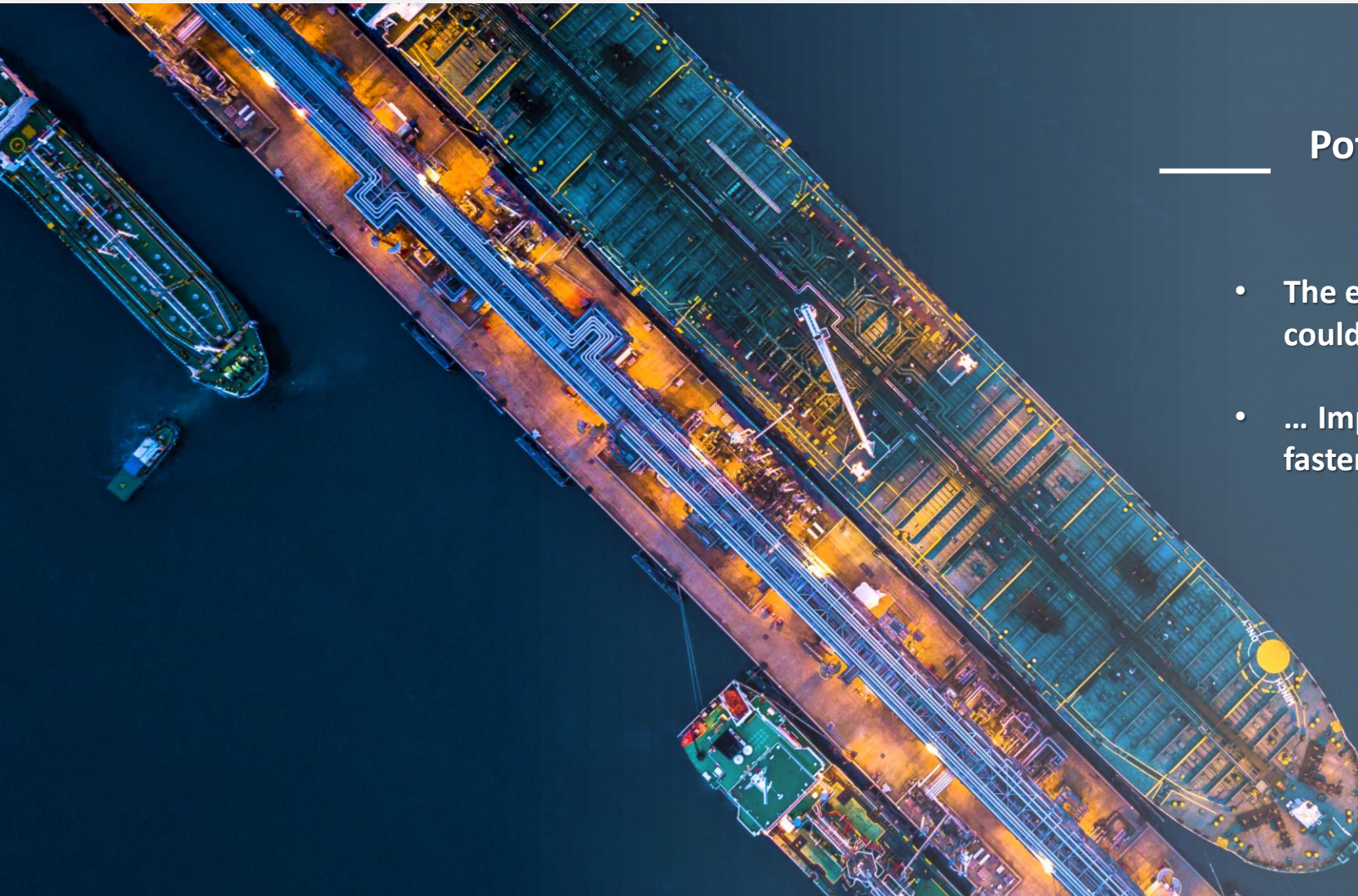
DECARBONIZATION
ENGAGEMENT



Major names could at some point exclude doing business with companies that do not have a decarbonization roadmap or can not comply with the financial or regulatory institutions.



We should all aim to be on the right side of history



Potentially some parallels to an OPA 90 scenario:

- The effects of decarbonization demands could happen faster than expected ...
- ... Implying that client's ambitions can change faster than new vessels can be built

DEMAND



SUPPLY



The importance of developing a decarbonization roadmap

Develop a roadmap of your company's fleet decarbonization trajectory to show:

- You understand the regulations
- You comply with the regulations
- You have a clear strategy on this matter



SHAREHOLDERS



PARTNERS



EMPLOYEES

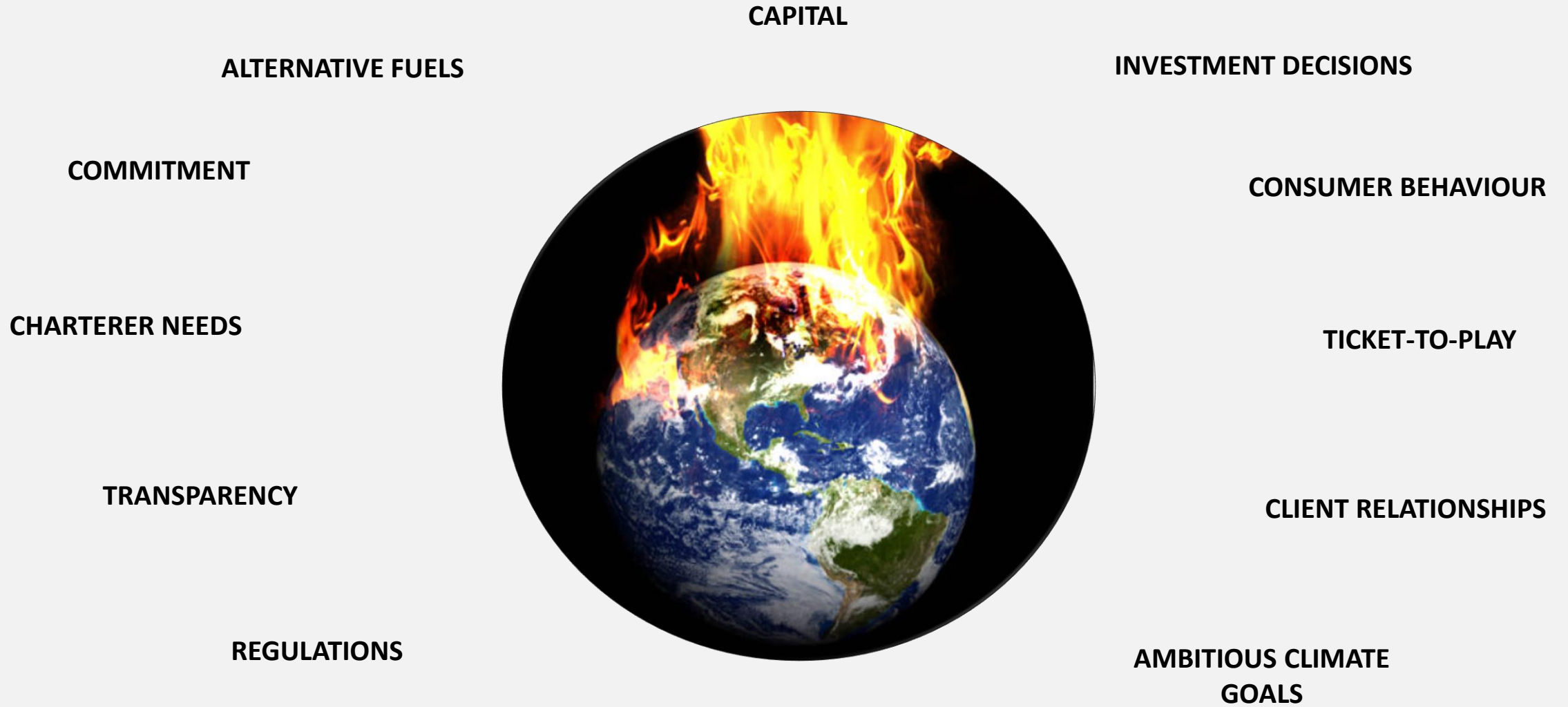


CLIENTS



INDUSTRY STAKEHOLDERS

Action is needed – NOW!





THANK YOU!

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