WHEN TRUST MATTERS

Decarbonization in Shipping – Drivers and Solutions

Norwegian Business Association China

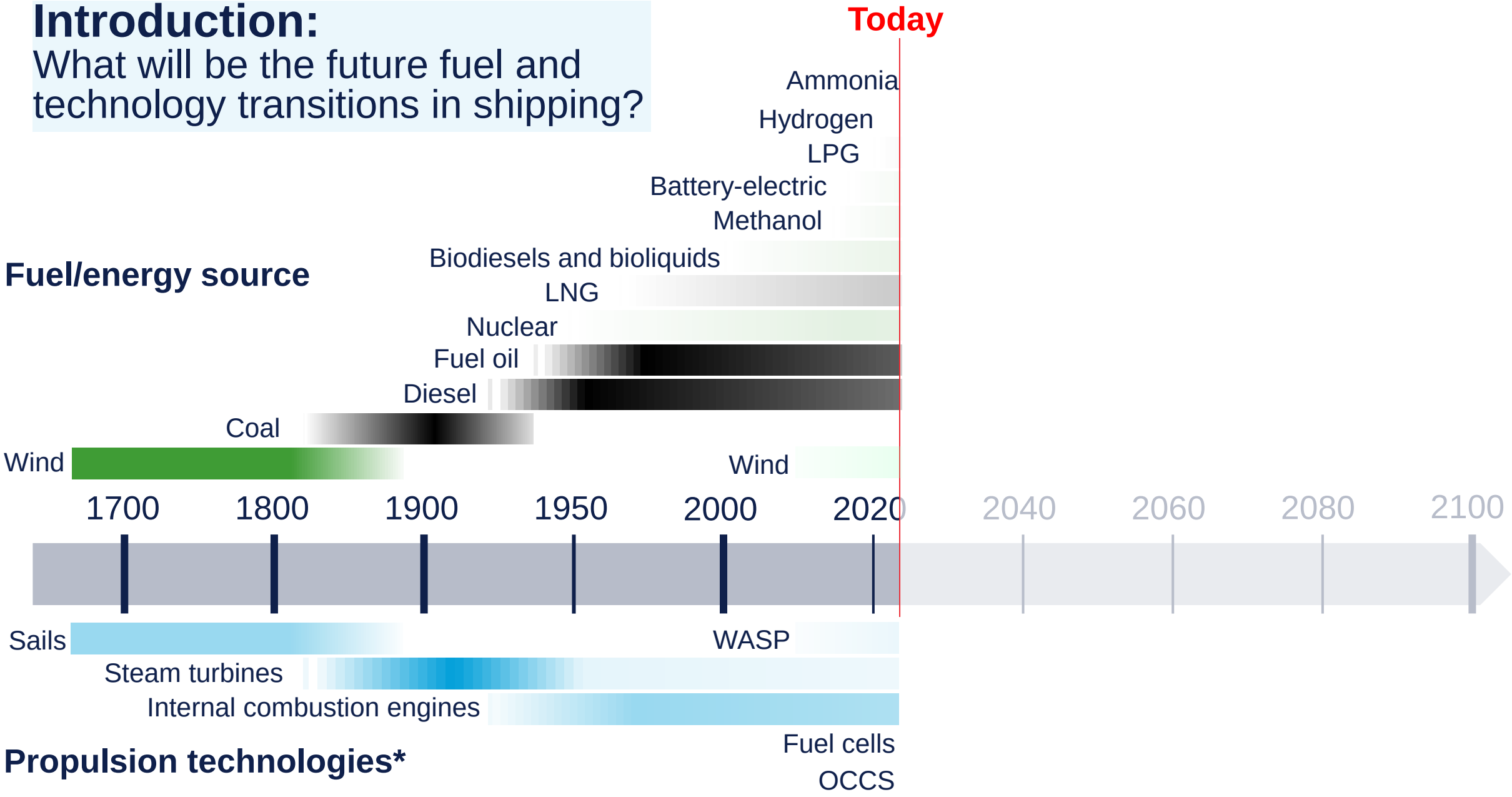
Øyvind Sekkesæter, Maritime Advisory China

2023-06-20

Agenda

1. Introduction to technology and fuel transitions in shipping
2. What are the key drivers?
3. What are the potential solutions?

Introduction:
What will be the future fuel and technology transitions in shipping?



WASP: Wind-assisted propulsion

LNG: Liquefied Natural Gas

LPG: Liquefied Petroleum gas

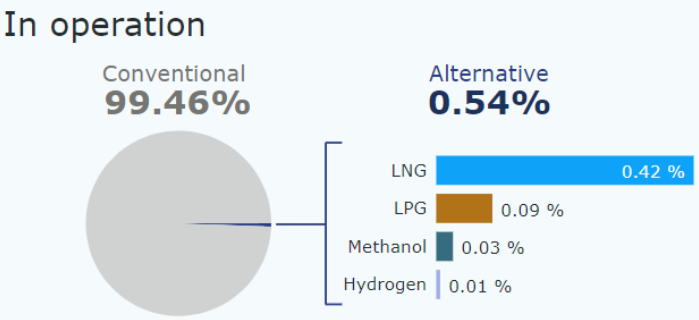
OCCS: Onboard Carbon Capture and Storage

*and OCCS

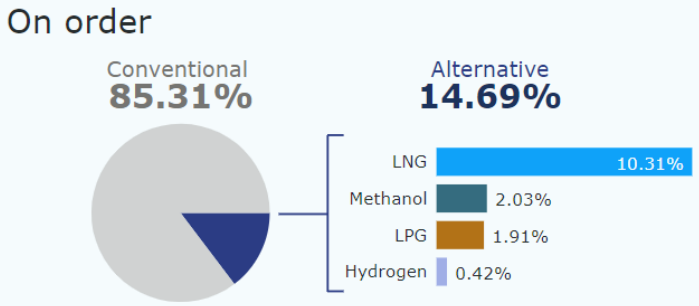
Is a fuel transition taking place?

In terms of number of ships

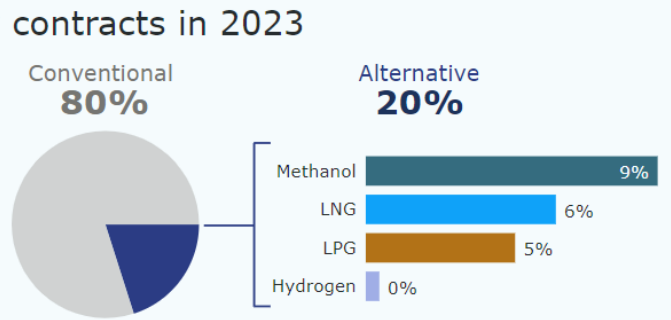
In operation



On order

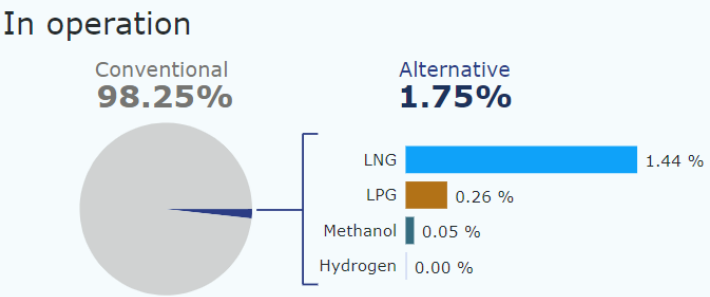


New contracts in 2023

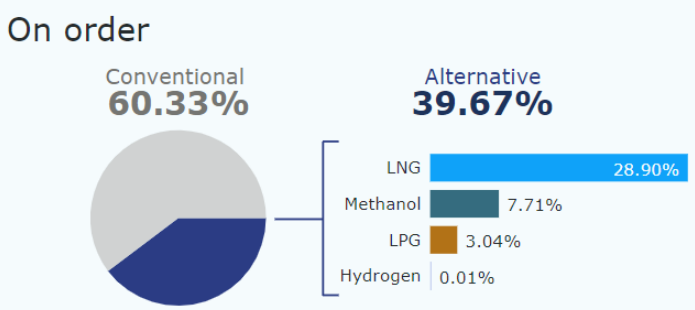


In terms of GT

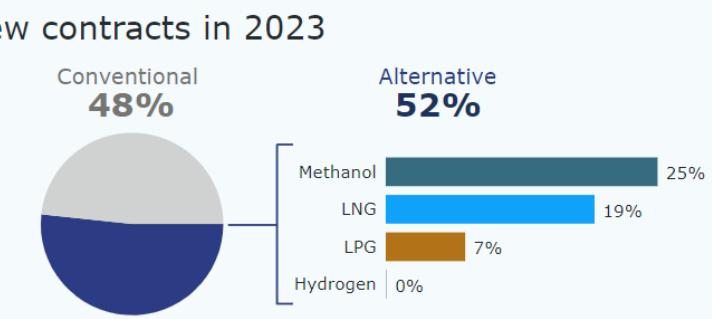
In operation



On order



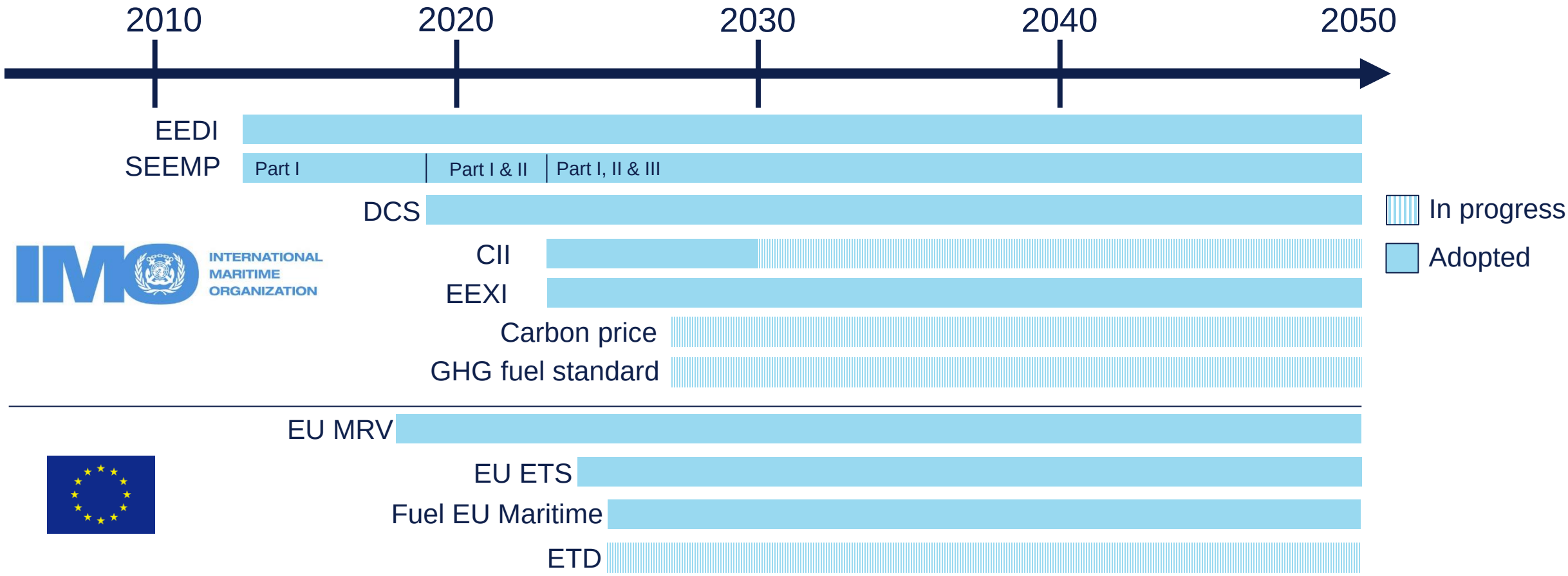
New contracts in 2023



Source: DNV's Alternative Fuels Insight platform: afi.dnv.com, status as of 2023-06

What are the drivers for decarbonization?

Decarbonization regulations



EEDI: Energy Efficiency Design Index

SEEMP: Ship Energy Efficiency Management Plan

DCS: Data Collection System

EEXI: Energy efficiency existing design

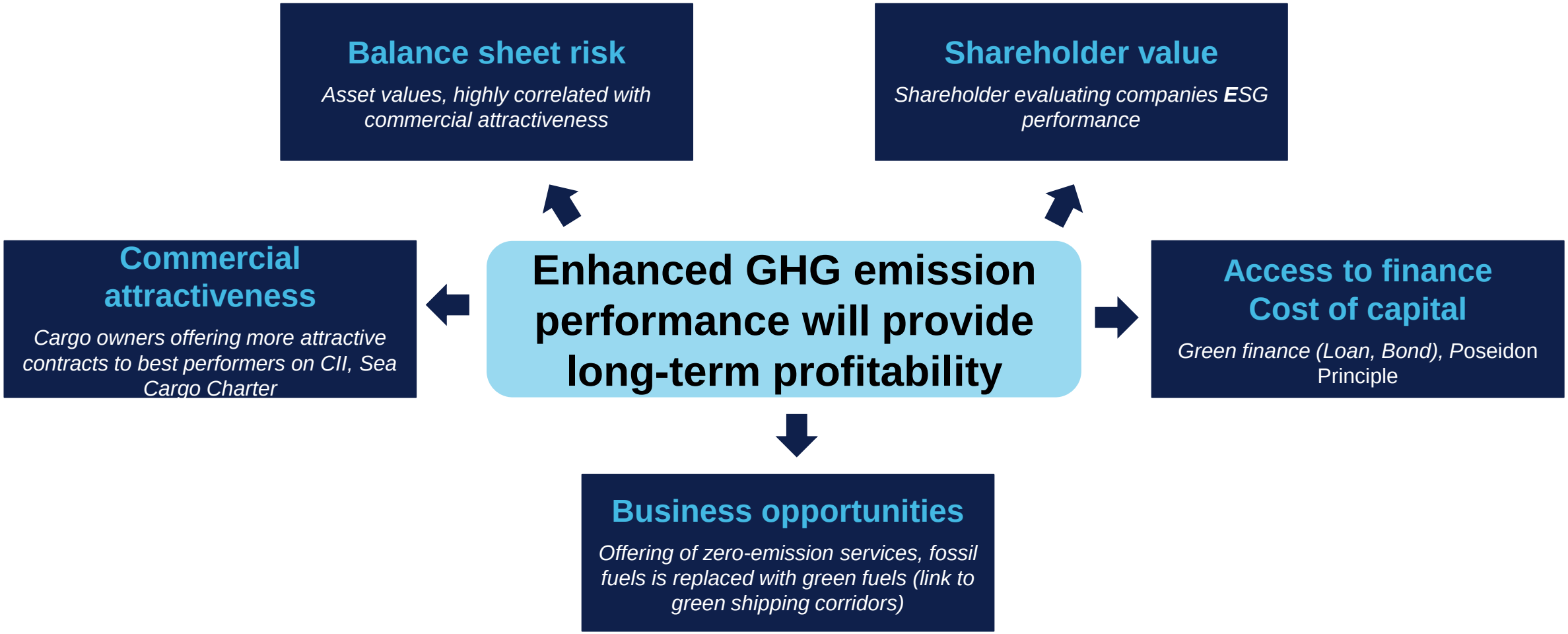
CII: Carbon Intensity Indicator

MRV: Monitoring, Reporting, and Verification

ETS: Emission Trading System

ETD: Energy Taxation Directive

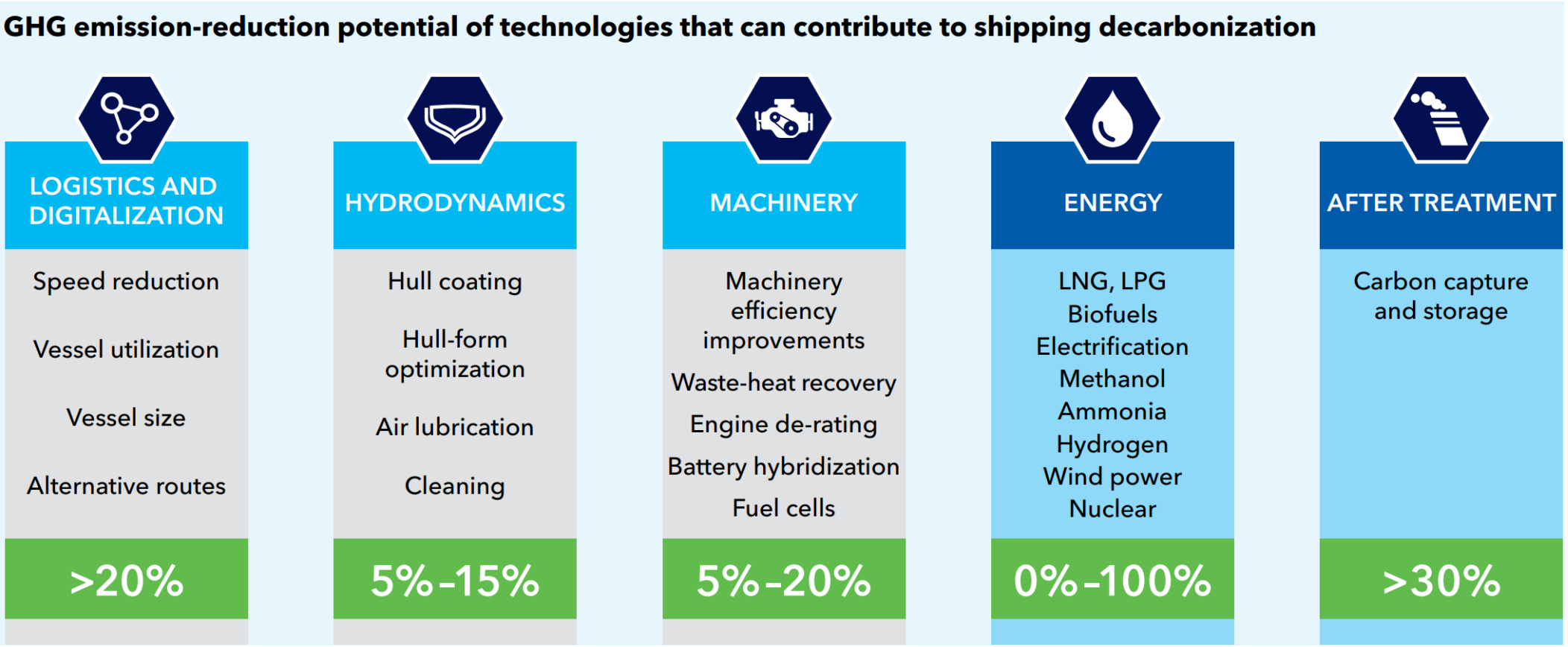
GHG emission performance will have a business impact beyond regulatory compliance



What are the potential solutions?

Options for reducing GHG emissions

GHG emission-reduction potential of technologies that can contribute to shipping decarbonization



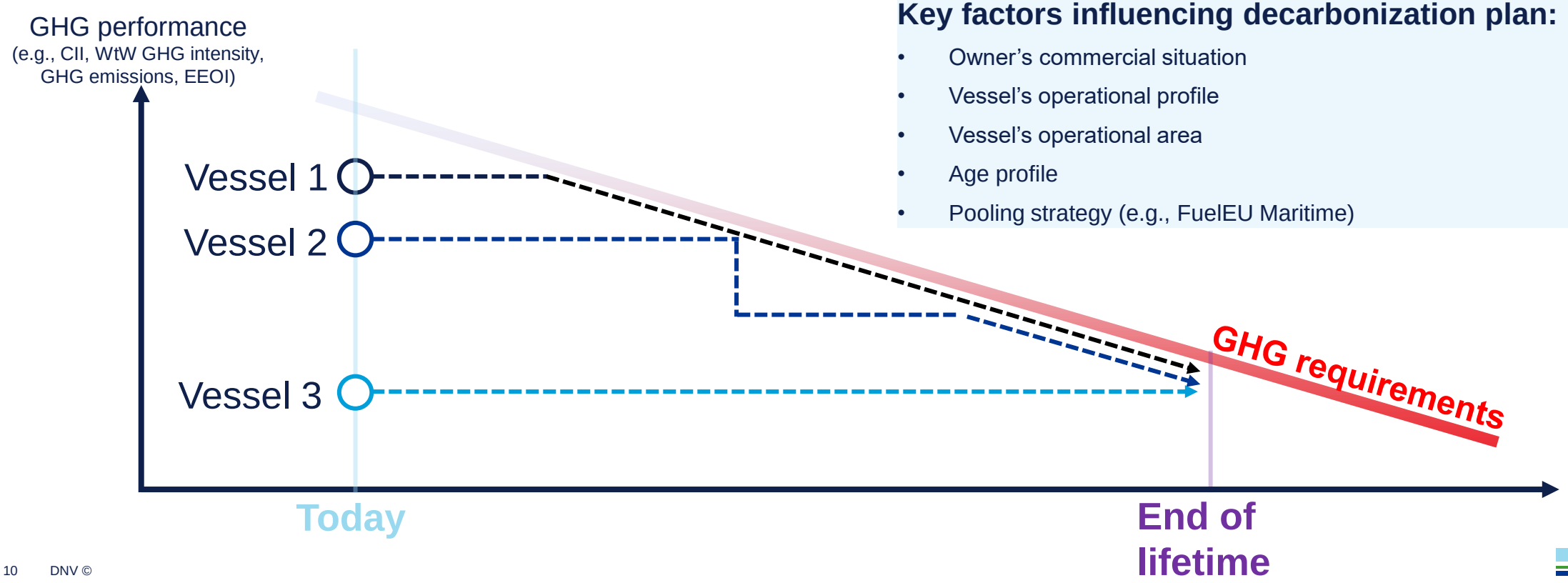
The fuel transition must go together with greater energy efficiency of ships, requiring re-thinking both operationally and with an intensified uptake of proven energy-recovery and energy-efficiency technologies

A carbon risk framework for vessels can help reduce risk

1. Define baselines, set GHG target trajectories and GHG price strategy
2. Assessment of decarbonization and fuel strategy
3. Impact on design
4. Create a decarbonization plan
5. Monitoring of decarbonization plan

Key factors influencing decarbonization plan:

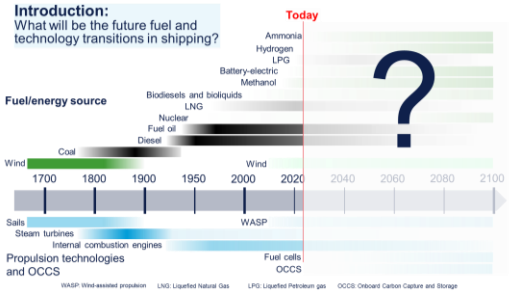
- Owner's commercial situation
- Vessel's operational profile
- Vessel's operational area
- Age profile
- Pooling strategy (e.g., FuelEU Maritime)



Concluding remarks

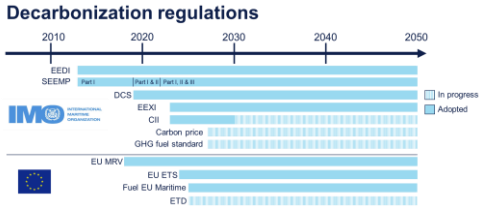
1

Historically, there has been several fuel and technology transitions in shipping. This time though, the rate of change, and drivers, are materially different from earlier transitions



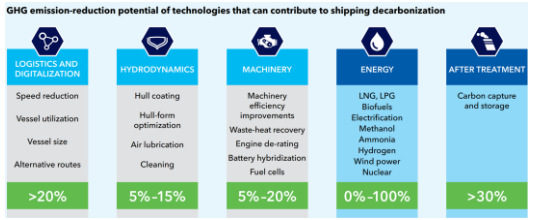
2

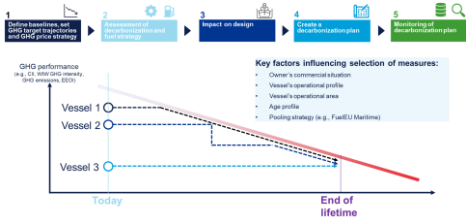
There are several drivers for decarbonization in shipping. Regulations are key, but drivers exist beyond regulations



3

Several measures exist for GHG reduction exist, but there is no “one-size-fits-all” solution. A carbon-risk framework can help reduce risk





Thanks for listening!

Øyvind Sekkesæter, Maritime Advisory China

oyvind.sekkesaeter@dnv.com
+8615121170783 | +4790980317

www.dnv.com