



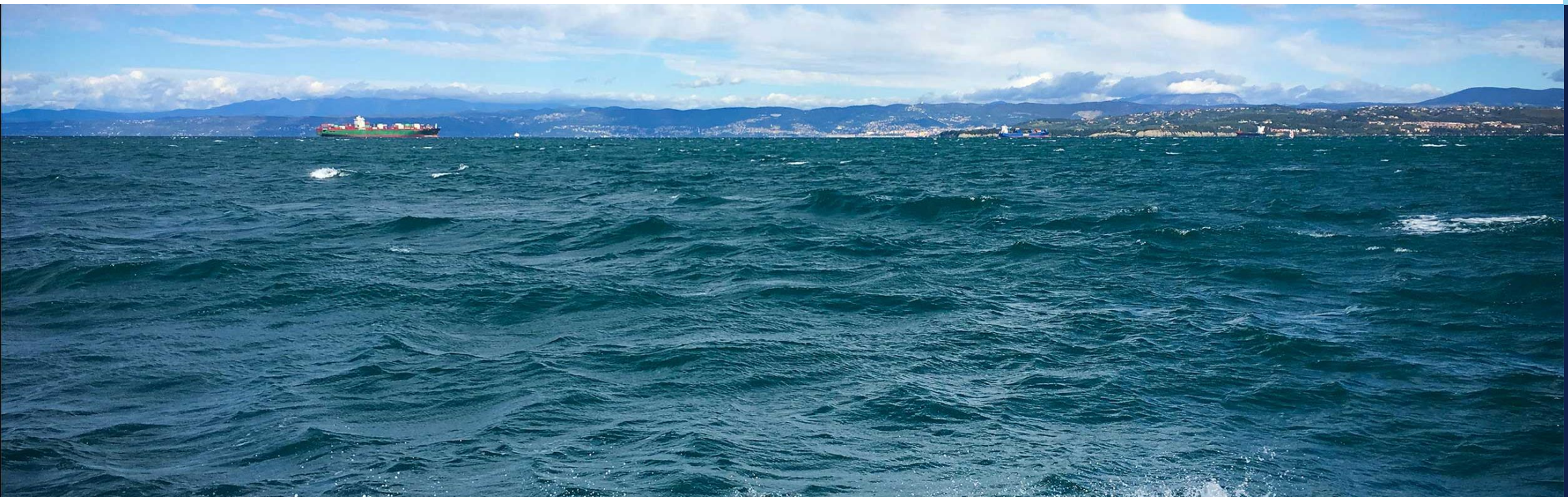
WHEN TRUST MATTERS

IMO og EU strammer kravene Status og oppdatering

GSP miniseminar

Tore Longva – Decarbonization director

08 August 2023

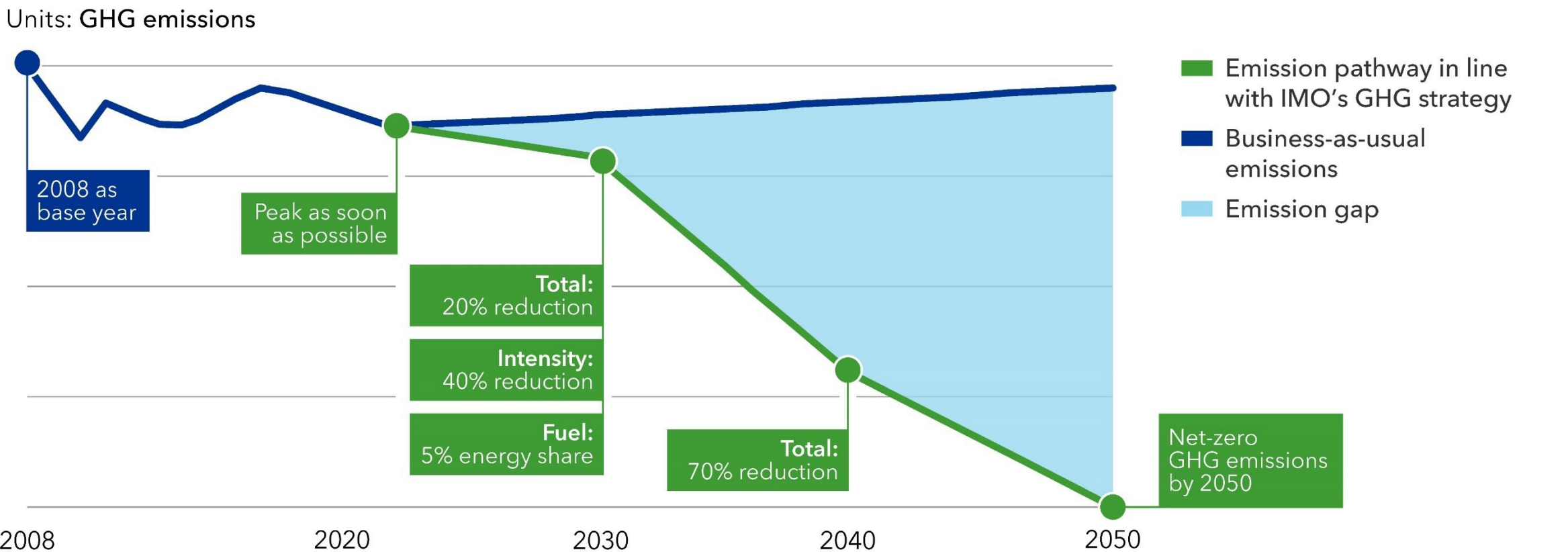


IMO





Strengthened IMO strategy on GHG reductions

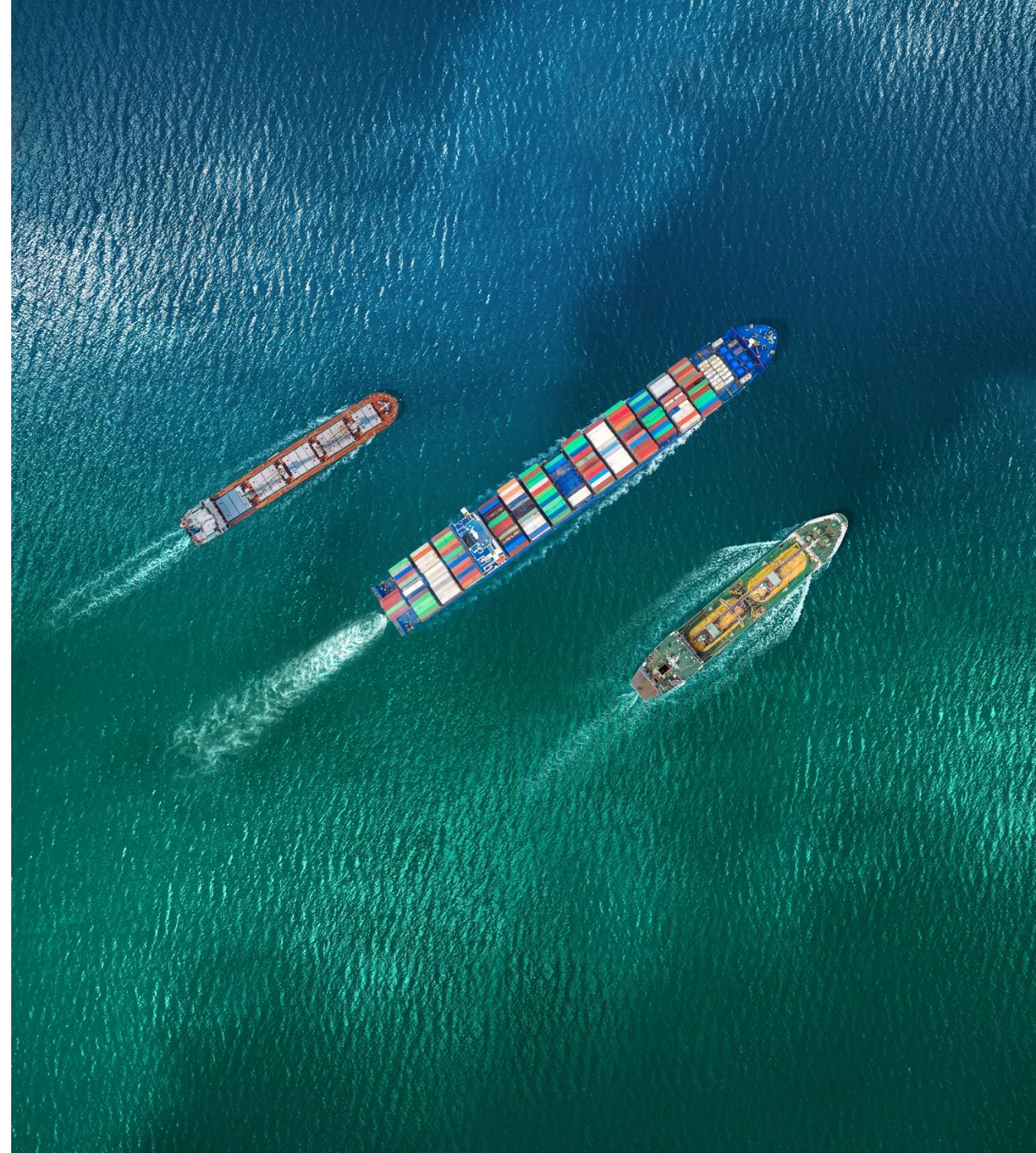


Total: Well-to-wake GHG emissions; **Intensity:** CO₂ emitted per transport work; **Fuel:** Uptake of zero or near-zero GHG technologies, fuels and/or energy sources

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Agreement in principle on new GHG Measures

- Technical measure: **GHG intensity fuel standard**:
 - Regulating the phased reduction of fuel well-to-wake GHG intensity
 - Separate proposals from EU and China could form the design basis
- Economic element: a **price on GHG emissions**
 - No agreement on pricing mechanism, but could potentially be linked directly to the GHG intensity fuel standard
- **Timeline**
 - Adoption in 2025, Entry into Force in 2027





Use of biofuels under DCS and CII regulations

- Biofuels can use a CO₂ conversion factor equal to the well-to-wake GHG emissions factor if they:
 - Are **certified** by an international certification scheme
 - Meet their **sustainability criteria**
 - Provide a **well-to-wake GHG emissions reduction of at least 65%** compared to fossil MGO
- **Temporary**, until regulations apply the methods in the LCA guidelines.

Other matters

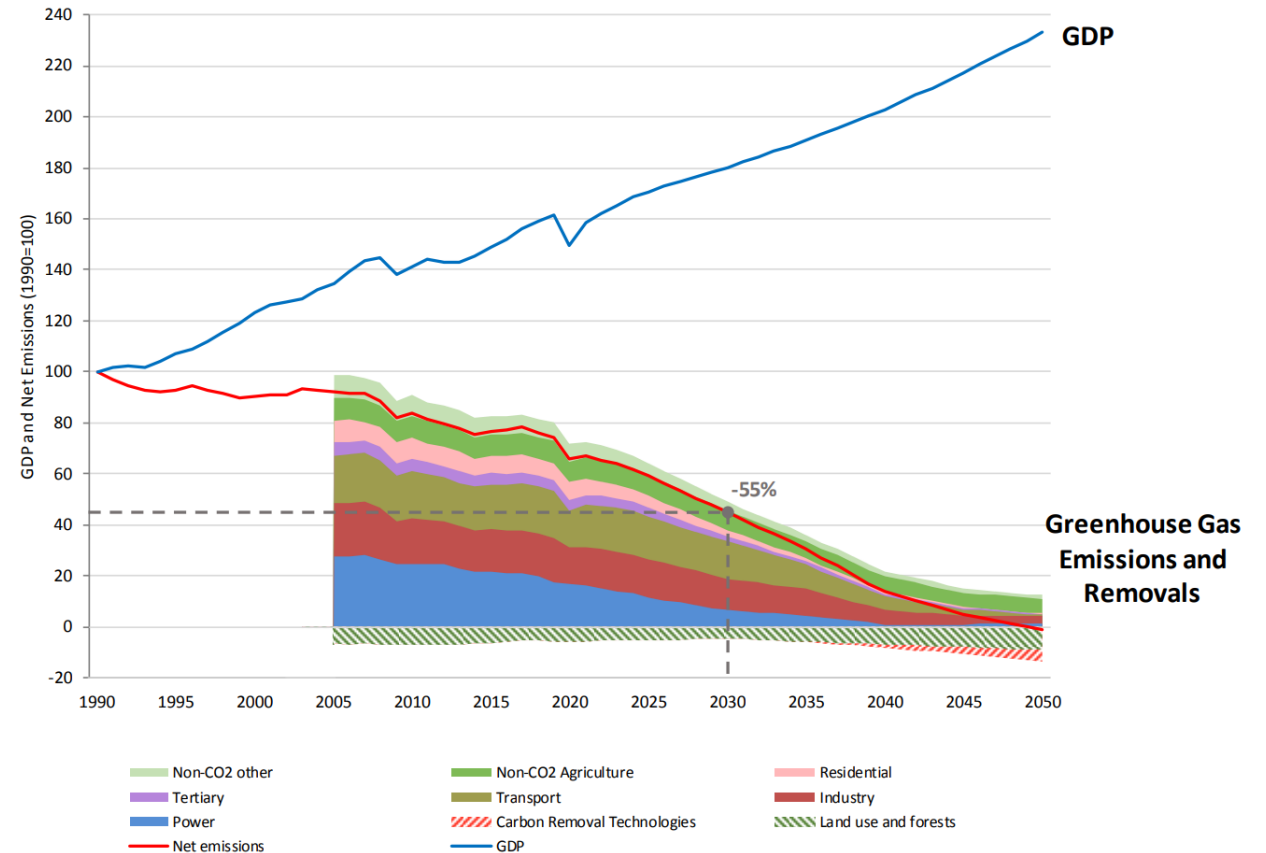
- **Fuel lifecycle (LCA) guidelines** adopted
 - Methods for calculating well-to-wake and tank-to-wake GHG emissions – grams CO₂e per MJ
 - Sustainability topics/aspects
- **No immediate changes to the CII framework** – review to be completed by 2025
- Brief discussion on framework for **onboard carbon capture and storage**
 - No substantial discussion - postponed to next working group in April 2024
 - To be linked to the further work on the LCA guidelines
- Approved **amendments to DCS**, likely taking effect from 2026
 - Additional data elements: e.g. fuel consumption per fuel type and energy consumer and transport work



EU

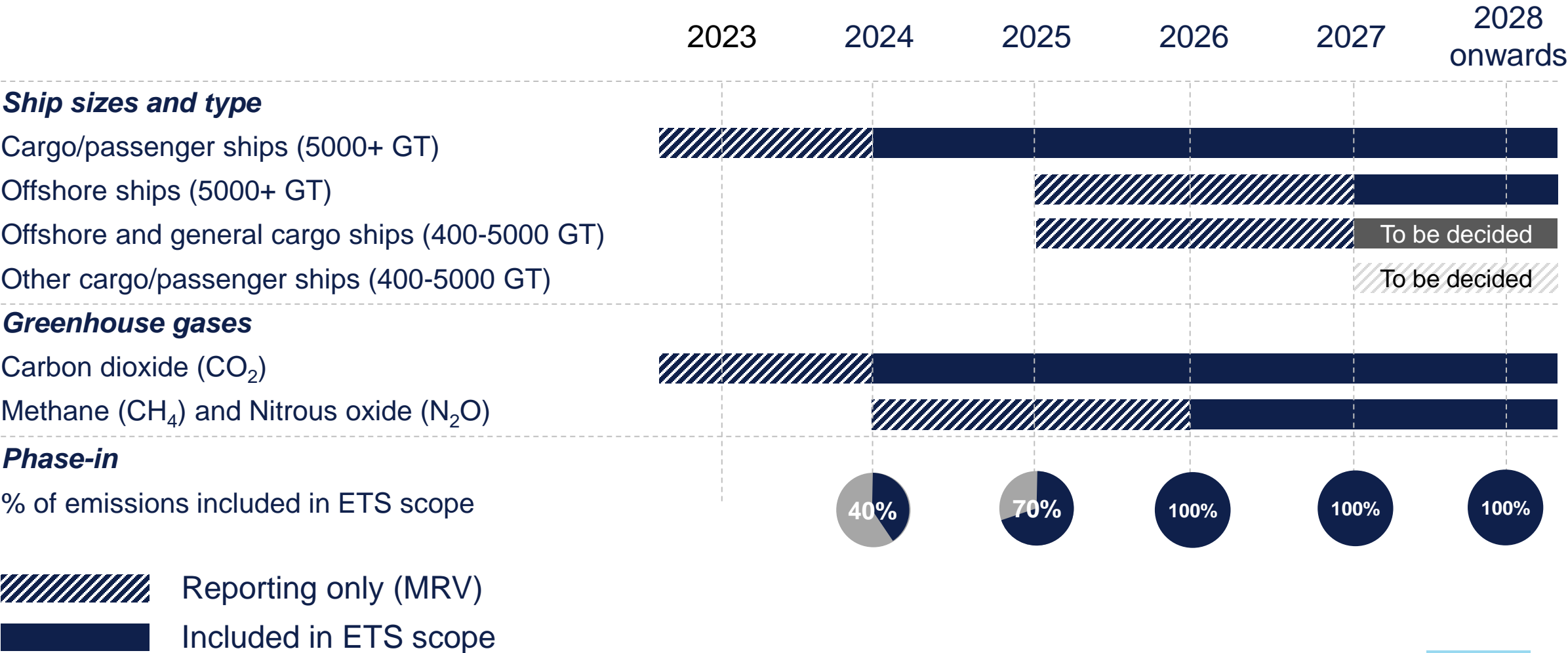
EU Green Deal – a climate neutral Europe by 2050

- Estimated **90% reduction in maritime transport emissions** relative to 1990 needed by 2050
- Fit for 55 package proposed by Commission on 14 July 2021. Key elements for shipping:
 - Inclusion of shipping in **the European Trading System**
 - **FuelEU Maritime**: requirements on lifecycle GHG intensity of energy
 - Revision of **Alternative Fuels Infrastructure Regulation**: Shore side electricity and LNG in core network ports by 2030 (electricity) and 2025 (LNG)
 - Revision of **Energy Taxation Directive**: Ending tax exemptions for marine fuels within EU



Source: EU Commission, COM(2020) 562 final

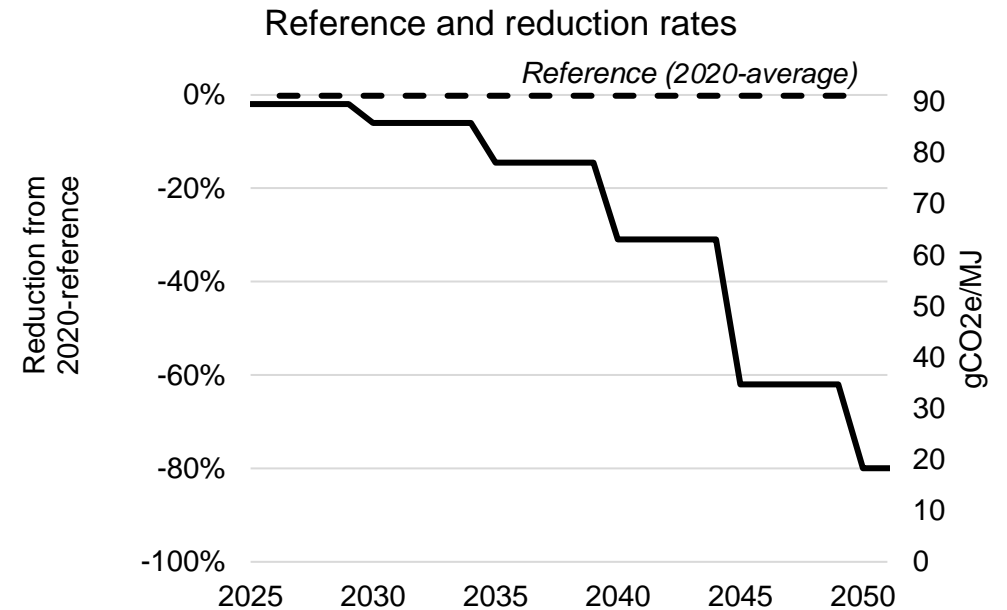
Shipping to be included in the EU Emissions Trading System from 2024



FuelEU Maritime – requirements to lifecycle GHG intensity of energy from 2024

- Applies to all ships above 5000 GT transporting passengers or cargo
- Requirement to the yearly **average well-to-wake GHG intensity of energy** used on-board:
 - Includes CH₄ and N₂O and electricity received, rewards for using wind power
- Requirement to the **use of shore power**:
 - From 1 January 2030 for **container and passenger ships** not using zero-emission technologies: **connect to shore power while at berth in TEN-T ports** for more than 2 hours

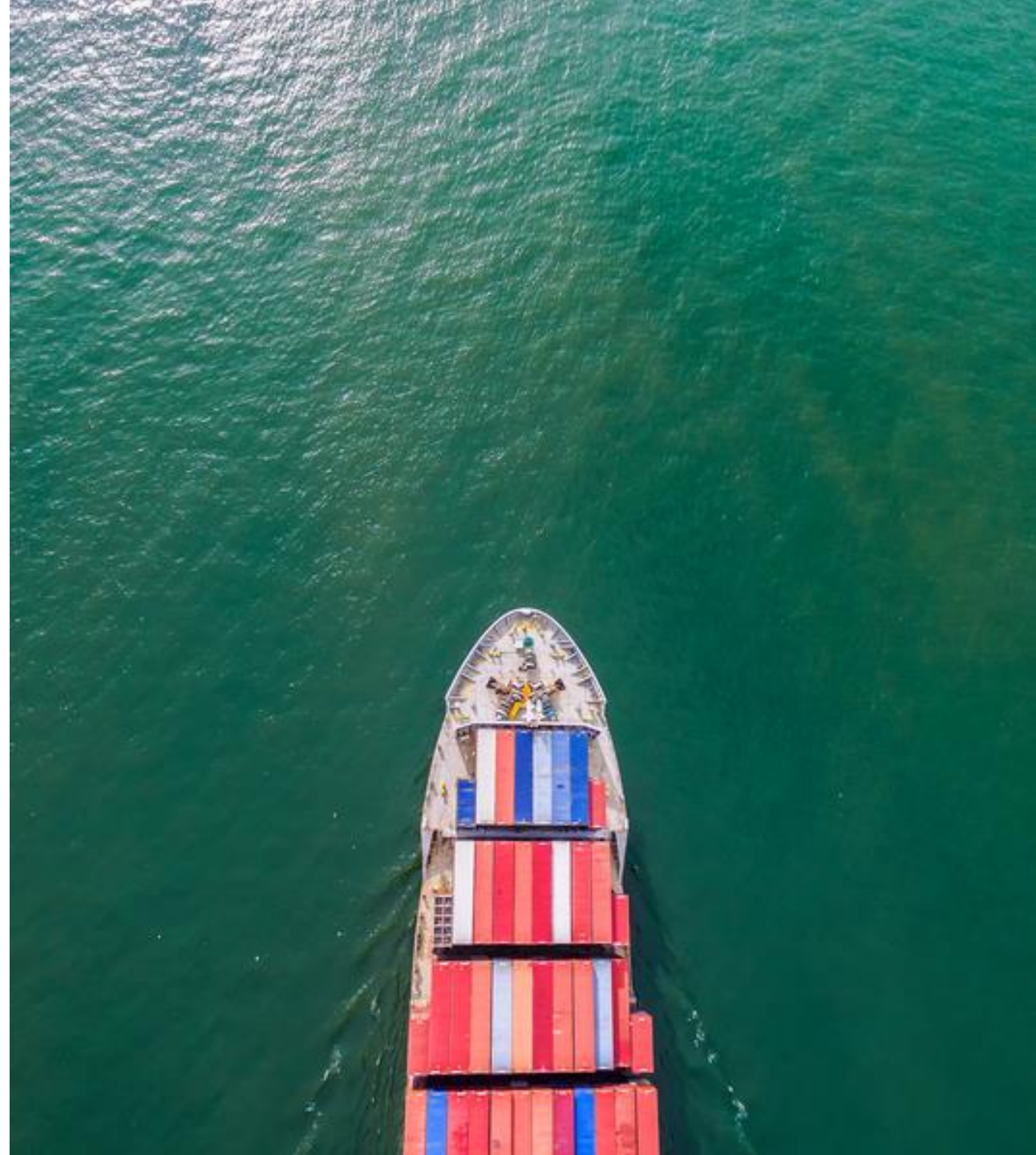
$$\text{Well to Wake GHG intensity} = \frac{gCO_{2eq}}{MJ}$$



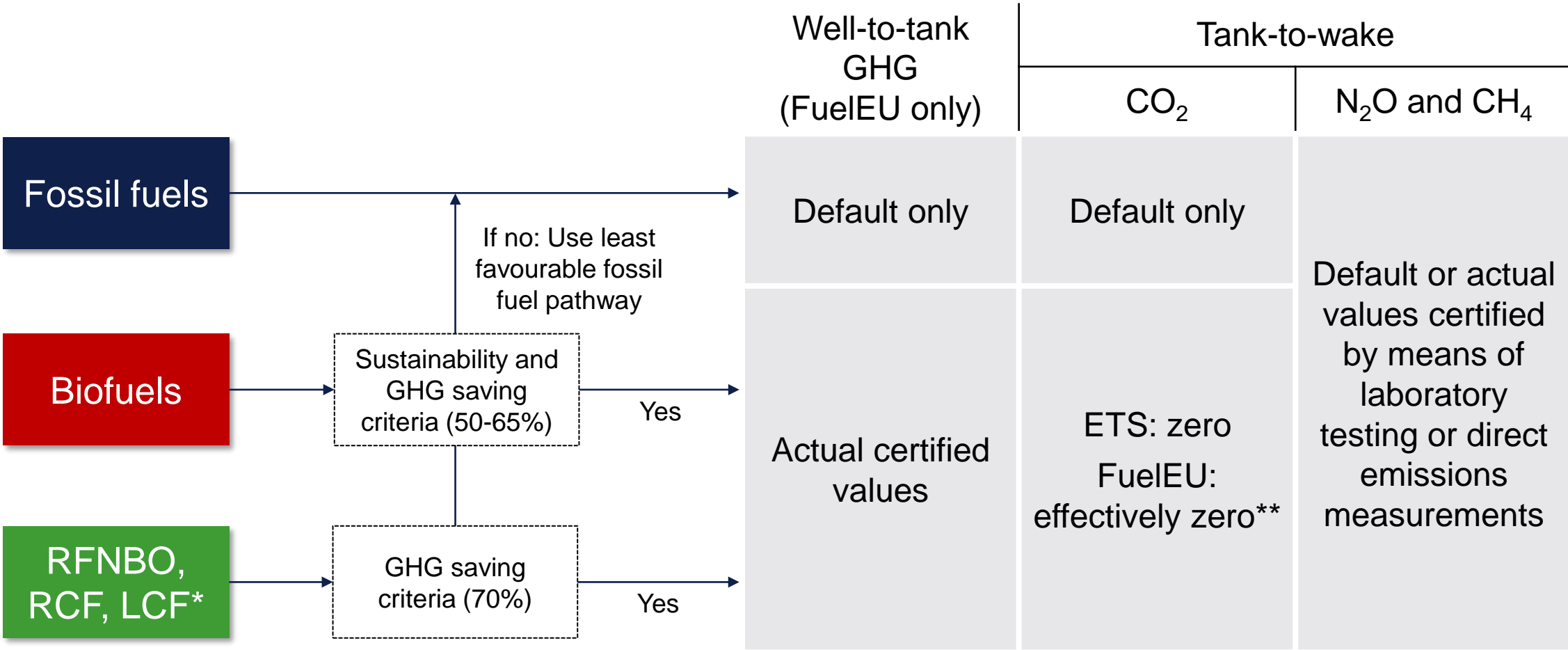
Reduction	2025	2030	2035	2040	2045	2050
Reduction (%)	2%	6%	14.5%	31%	62%	80%
Required GHG intensity (gCO ₂ e/MJ)	89.3	85.7	77.9	62.9	34.6	18.2

EU ETS and FuelEU compliance options

Option	EU ETS	FuelEU Maritime
Fossil LNG/LPG	+	+
Sustainable biofuels	++	++
Renewable fuels of non-biological origin (RFNBO), recycled carbon fuels (RCF) (e.g. e-methanol)	++	++
Shore power	++	++
Wind assisted propulsion	++	+
Energy efficiency	++	N/A
Onboard carbon capture and storage	++	?
Compliance balance (borrow, bank, pool)	N/A	+
Pay penalty	N/A	O



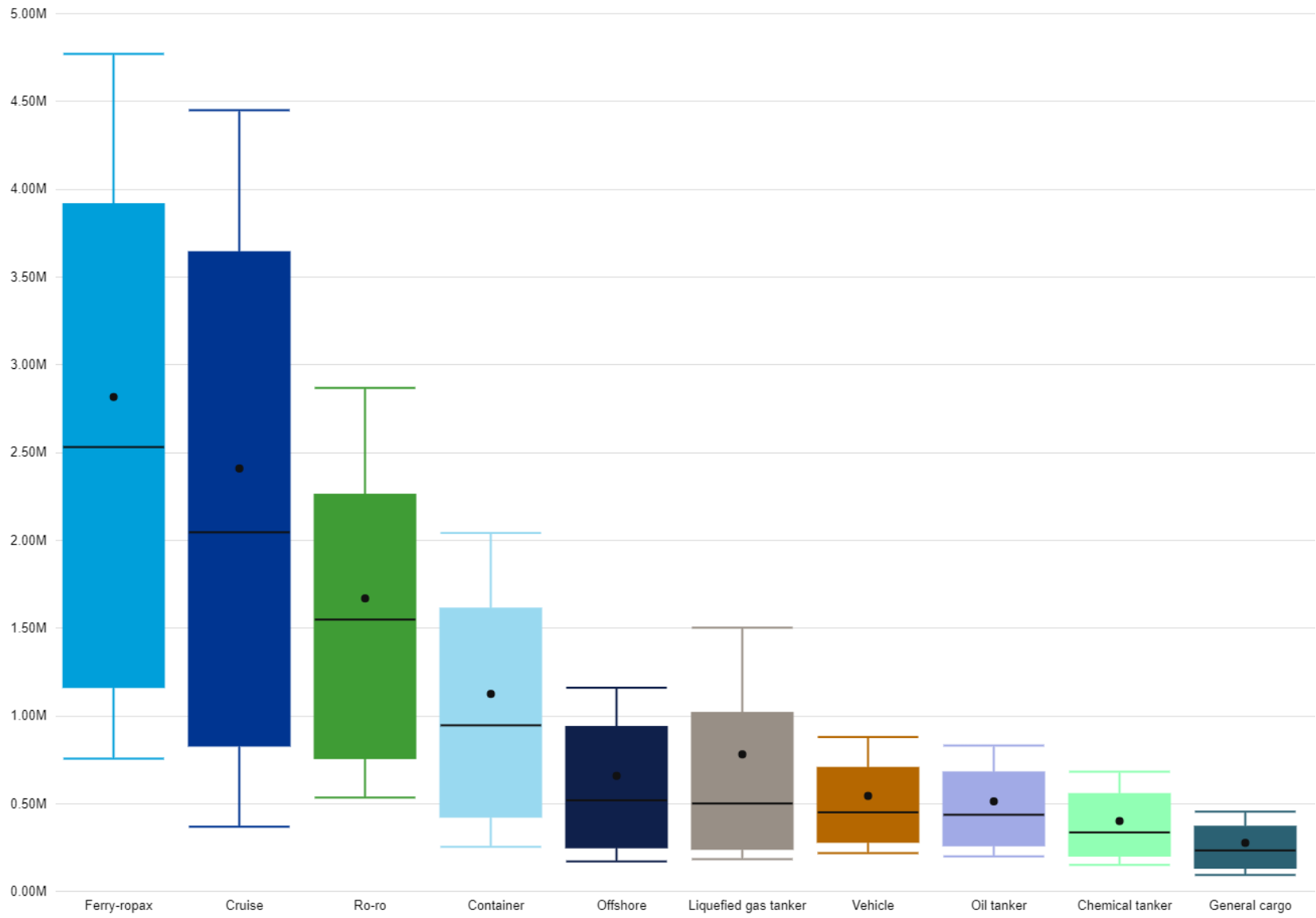
Fuels and emission factors under FuelEU and ETS



*) Renewable fuels of non-biological origin (RFNBO) (e.g. e-methanol), Recycled carbon fuels (RCF). Low carbon fuels (LCF) to be clarified

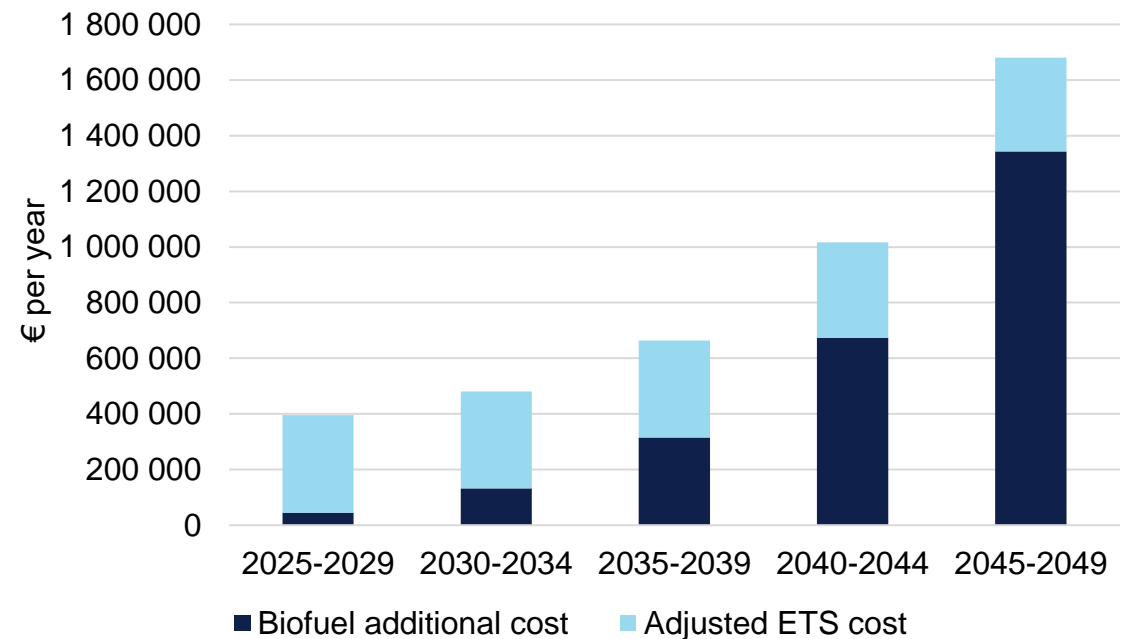
**) For FuelEU the CO₂ emission is first deducted for WtT and then added under TtW.

ETS impact highly dependent on ship type and trade

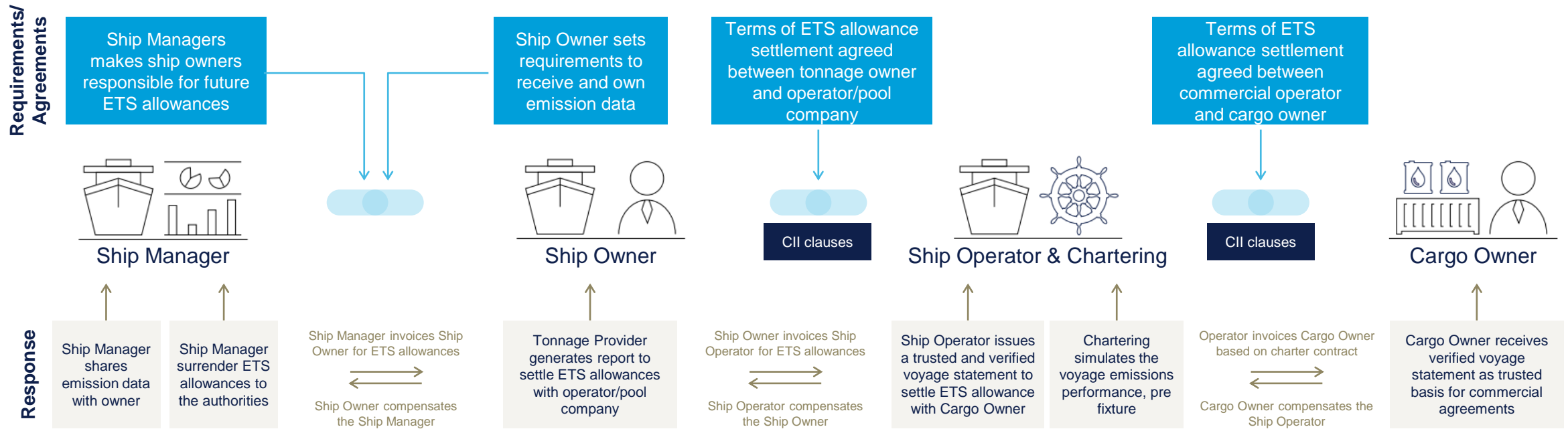


Potential impact of EU ETS and FuelEU using biofuel for one ship

- About 2500 t MGO @ 580 €/tonne fuel on voyages in or out of EU
- Switching to FuelEU required amount of sustainable biofuel @1060 €/tonne fuel
- ETS cost @90 €/tonne CO₂e is reduced correspondingly
- FuelEU impact expected to be more significant over time



Commercial agreements must be updated to secure that “the polluter pays” and that CII clauses are managed



Emissions Connect

Sharable, real-time verified emissions data and voyage statements ready to facilitate ETS settlements with trust

Concluding remarks

Business implications

- We have our marching orders – the maritime decarbonization **course and speed is set**
- Additional regulations are **in the pipeline**
- Regulatory **complexity and overlap will increase**, and compliance will become tougher
- **Energy efficiency** improvements remain important
- **Zero and near-zero fuels** are essential
- Knowing and understanding your own **emissions data** will be business critical

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