

TRIPARTITE 2023

# SAFETY & DECARBONISATION: A REGULATORY PERSPECTIVE

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International  
Chamber of Shipping

Shaping the Future of Shipping



## 2023 IMO GHG Strategy

- ➔ Reduction in carbon intensity of international shipping by at least 40% by 2030 compared to 2008.
- ➔ Uptake of zero or near-zero GHG emission technologies, fuels and/or energy sources to represent at least 5%, striving for 10%, of the energy used by international shipping by 2030.
- ➔ Reach net-zero GHG emissions by or around, i.e. close to, 2050.
- ➔ Indicative Checkpoints for 2030 and 2040.

# HOW TO GET THERE?

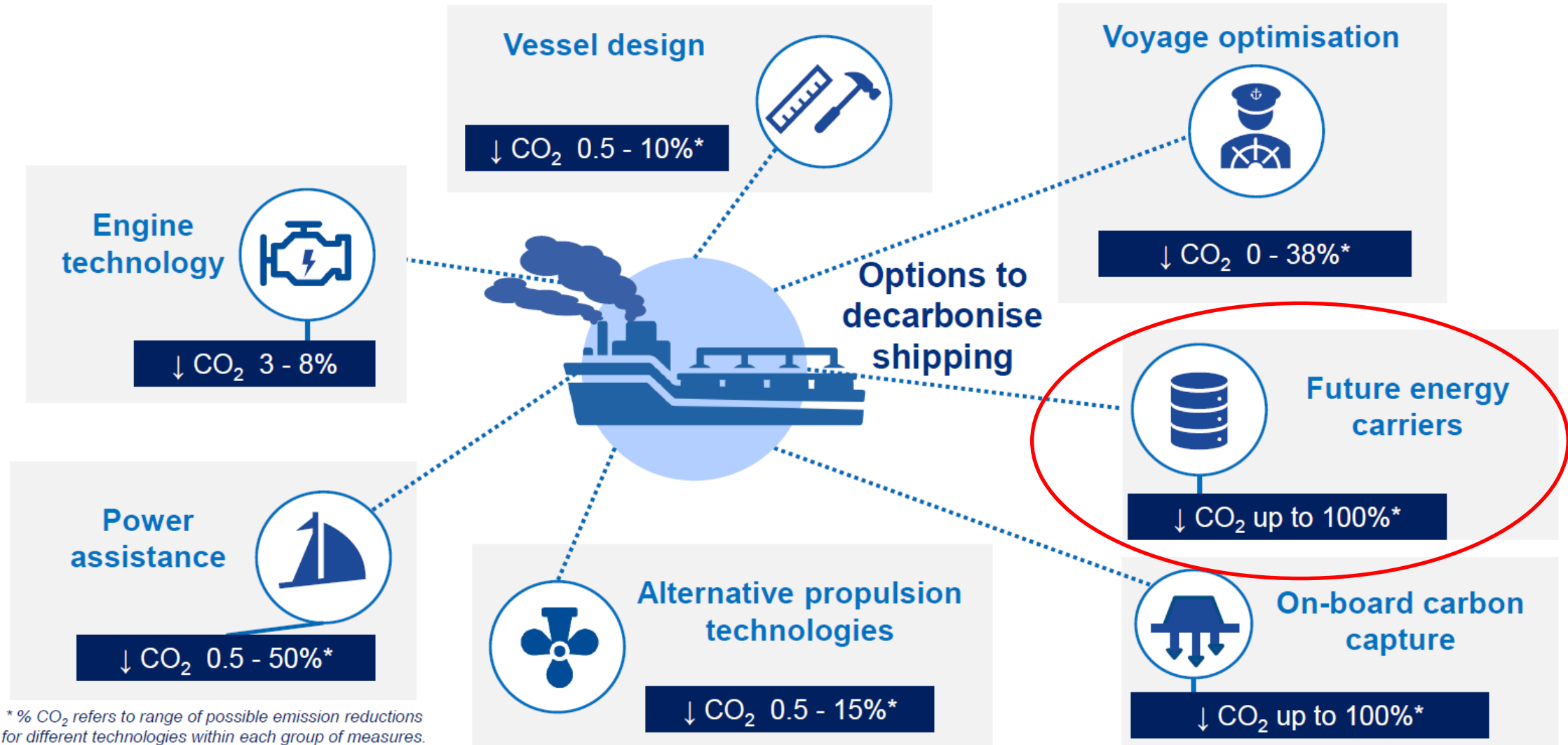


Image credit: Ricardo

# HOW TO GET THERE?



Image credit: Shell  
LNG



## Considerations for choice of fuel

- ➔ Cost – CAPEX & OPEX
- ➔ Suitability to meet GHG reduction targets (company ESG, IMO etc.)
- ➔ Global availability
- ➔ Consistent quality
- ➔ SAFETY





- ➔ **MARPOL Annex VI** Regulation 18: Fuel oil availability and quality
- ➔ **SOLAS Chapter II-1**
  - ➔ **Part F:** methodology for alternative design and arrangements for machinery, electrical installations and low-flashpoint fuel storage and distribution systems.
  - ➔ **Part G:** requirements for ships using low-flashpoint fuels
- ➔ **SOLAS Chapter II-2** Regulation 4: Probability of Ignition



- ➔ **IGF Code** - currently focusing on liquefied natural gas (LNG).
- ➔ **IGC Code** - design and construction standards for all ships engaged in the carriage of liquefied gases.
- ➔ **IBC Code** - international standard for the safe carriage in bulk by sea of dangerous chemicals and noxious liquid substances.



- ➔ IMO Sub Committee on Carriage of Cargoes and Containers (CCC)
- ➔ Work item: Amendments to the IGF Code and development of guidelines for alternative fuels and related technologies.
- ➔ CCC usually meets once every year. Work progressed through intersessional correspondence group.





- ➔ IMO Maritime Safety Committee (MSC)
- ➔ Work item: Development of a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels.
- ➔ MSC usually meets once every year. Work progressed through intersessional correspondence group.

- ➔ Interim guidelines adopted for
  - ➔ Methyl/Ethyl alcohols
  - ➔ Fuel Cells
  - ➔ Liquefied Petroleum Gas (LPG)
  
- ➔ Ongoing work on interim guidelines for
  - ➔ Hydrogen
  - ➔ Ammonia
  - ➔ Low FP oil fuels

- ➔ Good progress with guidelines for Hydrogen.
- ➔ Basis principles have been agreed, however many issues still to resolve for ammonia. It is likely that not all ship types could meet concepts like safety distances and safe havens.
- ➔ On low FP fuels work towards developing guidelines for using fuels with FP between 52°C and 60°C. Appropriate safety concepts still TBD.
- ➔ Other issues identified include the lack of arrangements for safe debunkering in ships powered by alternative fuels. Will need to be addressed in future work.

- ➔ Considering the critical need for guidelines on Hydrogen and ammonia, IMO has decided to establish a weeklong intersessional working group on alternative fuels along with CCC 10 in 2024.
- ➔ According to latest work plan interim guidelines on ammonia and hydrogen should be approved at MSC 109 (Dec 2024).
- ➔ Subsequent priority work includes development of mandatory instruments for methyl/ethyl alcohols and fuel cells.

- ➔ Important changes to IGC Code agreed - **vessels carrying cargos in the IGC code may use those cargos as fuels** as long as they meet the specifications, which are;
  - ➔ 'not a cargo requiring 1G construction';
  - ➔ provides the same level of safety as natural gas;
  - ➔ takes into account relevant guidelines developed by the Organization; and
  - ➔ special consideration has been given by the Administration.

These changes would facilitate the use of ammonia cargo as fuel and are expected to come into force in 2028.

- ➔ To identify and update a list of low and zero GHG fuels and technologies, conduct a regulatory assessment for these fuels and technologies and identify and address safety obstacles and regulatory gaps.
- ➔ Work being progressed through an intersessional CG. Will report to MSC 108.



- ➔ Nuclear: Code of Safety for Nuclear Merchant Ships (A.491(XII)) to be reviewed?
- ➔ Batteries: SOLAS II-1 based on assumption that propulsion power by ICE – may need to be reviewed

- ➔ Work on fuel safety needs to address every aspect of fuel chain; production, blending, transport, bunkering, storage, processing and use.
- ➔ Marine fuel supply side is highly unregulated. Reluctance among major bunker States (USA, EU) to establish robust standards and enforcement on supply side.
- ➔ MARPOL defines fuel oil as “any fuel” but provisions on quality and safety tailor made for fossil derived fuels.





- ➔ IMO Member States open to control supply side for environmental compliance – sustainability, LCA etc. Similar approach needed for safety of fuels.
- ➔ A Well-to-Wake approach is needed to ensure the safety of ships using alternative fuels.

**The San Diego Union**  
FOR A GREATER SAN DIEGO  
ESTABLISHED 1868—SIXTY-NINTH YEAR  
No. 26,420  
SAN DIEGO, CALIFORNIA, FRIDAY MORNING, MAY 7, 1937  
DAILY 5 CENTS—SUNDAY 10 CENTS

## 34 DIE, 63 SAVED AS BLAST DESTROYS ZEP HINDENBURG

### Airship That Became 803 Feet of Flaming Hydrogen

### Happy Shouts Turn To Shrieks of Dying Men and Women

### Commander Hurt; Navy Rescuers Dive Into Flaming Mass

Passengers Blown Through Fabric of Giant Airship; Several Smaller Explosions Follow First Detonation; Disaster Strikes Huge Craft Without Warning as Mounting Attempted to Refuel.

LAKEHURST, N. J., May 6 (A.P.)—Germany's great airship Hindenburg—after a record-breaking voyage—was destroyed by an explosion which killed 34 persons and injured 63 others today.

The explosion occurred about 20 minutes after the airship had been refueled at Lakehurst, N. J. The airship was on its way to Paris.

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#### More Explosions Rend Air

More explosions followed—continuing for minutes before the airship was destroyed.

#### INFLAMMABLE GAS FEARED BY U. S. NAVY MEN

The highly inflammable hydrogen gas used for lifting balloons has given naval officers at the station their most serious attack.

#### A. P. Cameron Snaps 15 Photos of Disaster

A. P. Cameron snapped 15 photographs of the Hindenburg disaster.

#### MAX SCHEMLING ESCAPES DEATH

Max Schmeling escaped death in the Hindenburg disaster.

#### Engine Spark, Not Static, Blamed By Coronator for Hindenburg Blast

The coronator blamed the Hindenburg disaster on an engine spark rather than static electricity.

#### NAVY MAN MISSED TRIP ON HINDENBURG

A Navy man missed his trip on the Hindenburg.

#### 3 LAND SAFE IN SAND PILE

Three land parcels were buried in a sand pile.

#### 1920 GRAF TRIP ONLY S. O. VISIT OF NAZI AIRSHIP

The 1920 Graf Zeppelin trip was only a so-called visit of a Nazi airship.

#### Hindenburg Disaster Recalls VIVID Description of Akron Loss

The Hindenburg disaster recalls the vivid description of the Akron loss.

#### Wife Hysterical; Publisher Safe; Time Marches On

The wife was hysterical, the publisher was safe, and time marches on.

#### FLAMES FIRST BROKE OUT IN REAR NO. 2 CELL

The flames first broke out in the rear No. 2 cell.

#### NAZI ENVOY GETS UNHAPPY SEND-OFF

The Nazi envoy received an unhappy send-off.

#### SO BROOKED RETURNS HOP ON HINDENBURG

So Brooked returns to the Hindenburg.

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**Today's Weather Forecast**  
Generally cloudy today; no change in temperature. Moderate westerly breeze all day. Precipitation likely, will be heaviest in western part of the state. 50 degrees, the highest 70 degrees.

Remember, it only takes ONE incident!


Image credit: San Diego Union Tribune Archives

# THANK YOU



International  
Chamber of Shipping

Shaping the Future of Shipping

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