

# Global regulatory framework and policies for international shipping

Marine Biofuels Webinar – 26 August 2025



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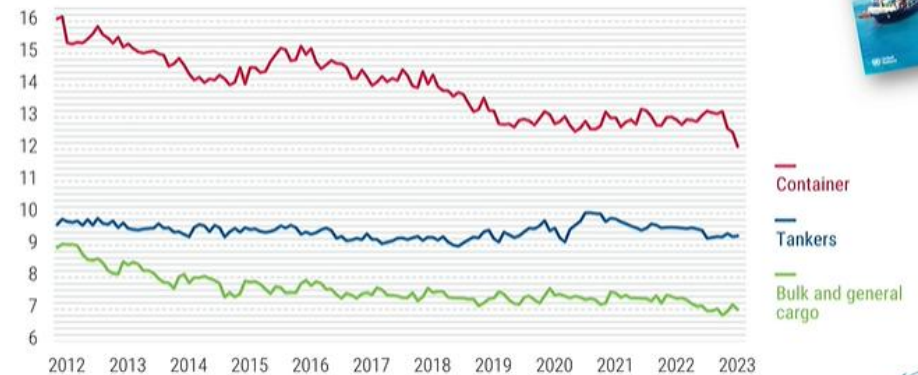
1. GHG emissions from international shipping and the role of IMO
2. Overview of the 2023 IMO GHG Strategy
3. Update on recent IMO action to implement the 2023 GHG Strategy
4. Conclusion

# 1. GHG emissions from international shipping and the role of IMO

# GHG emissions from international shipping

- Shipping is the most energy efficient long-distance cargo transportation mode
- GHG emissions from international shipping = **2 to 3%** of total anthropogenic emissions (source: *Fourth IMO GHG Study, 2020*)
- GHG emissions from international shipping = not addressed through Nationally Determined Contributions (**NDCs**) of the UNFCCC and its Paris Agreement
- Because these emissions occur outside national territories → IMO (same with international aviation → ICAO)
- Regular update of IMO to UNFCCC's Subsidiary Body for Scientific and Technological Advice (**SBSTA**)

World fleet, main vessel types, monthly CO2 emissions per ton-mile, Jan 2012–Mar 2023  
(Gram/ton\*nautical mile)



Source: UNCTAD, Issued on Marine Benchmark

Chapter 3 Decarbonizing shipping Review of Maritime Transport 2023



# The International Maritime Organization (IMO)



Created in 1948: **United Nations specialized agency** mandated to ensure safe, secure and efficient shipping on cleaner oceans



**176 Member States**, 3 associated members, >150 observer organizations (IGOs and NGOs)



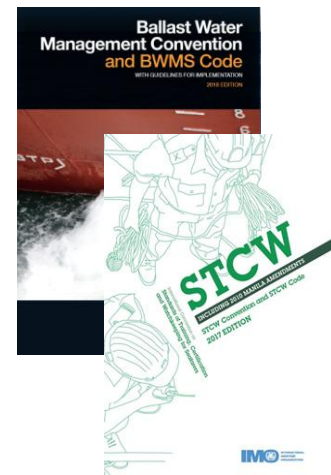
~**300 permanent Secretariat staff in London** and **7 regional offices** (Côte d'Ivoire, Ghana, Kenya, the Philippines, Trinidad and Tobago and the recent additions Fiji (Pacific) and Egypt (MENA Region). **45 nationalities**



IMO regulates > **50,000 ships** trading worldwide



IMO's instruments contain **binding obligations**, which are **enforced globally** by flag States and port States (incl. SOLAS, MARPOL, BWMC, etc.)



## 2. Overview of the 2023 IMO GHG Strategy

The Washington Post  
Democracy Dies in Darkness

World shipping body votes on 'historic' emissions cuts to curb warming

BBC  
NEWS

What would net-zero shipping look like?

Climat : le secteur maritime, un important pollueur, renforce ses objectifs de décarbonation

Le Monde

Forbes

World Shipping Body Toughens Their Emissions Targets

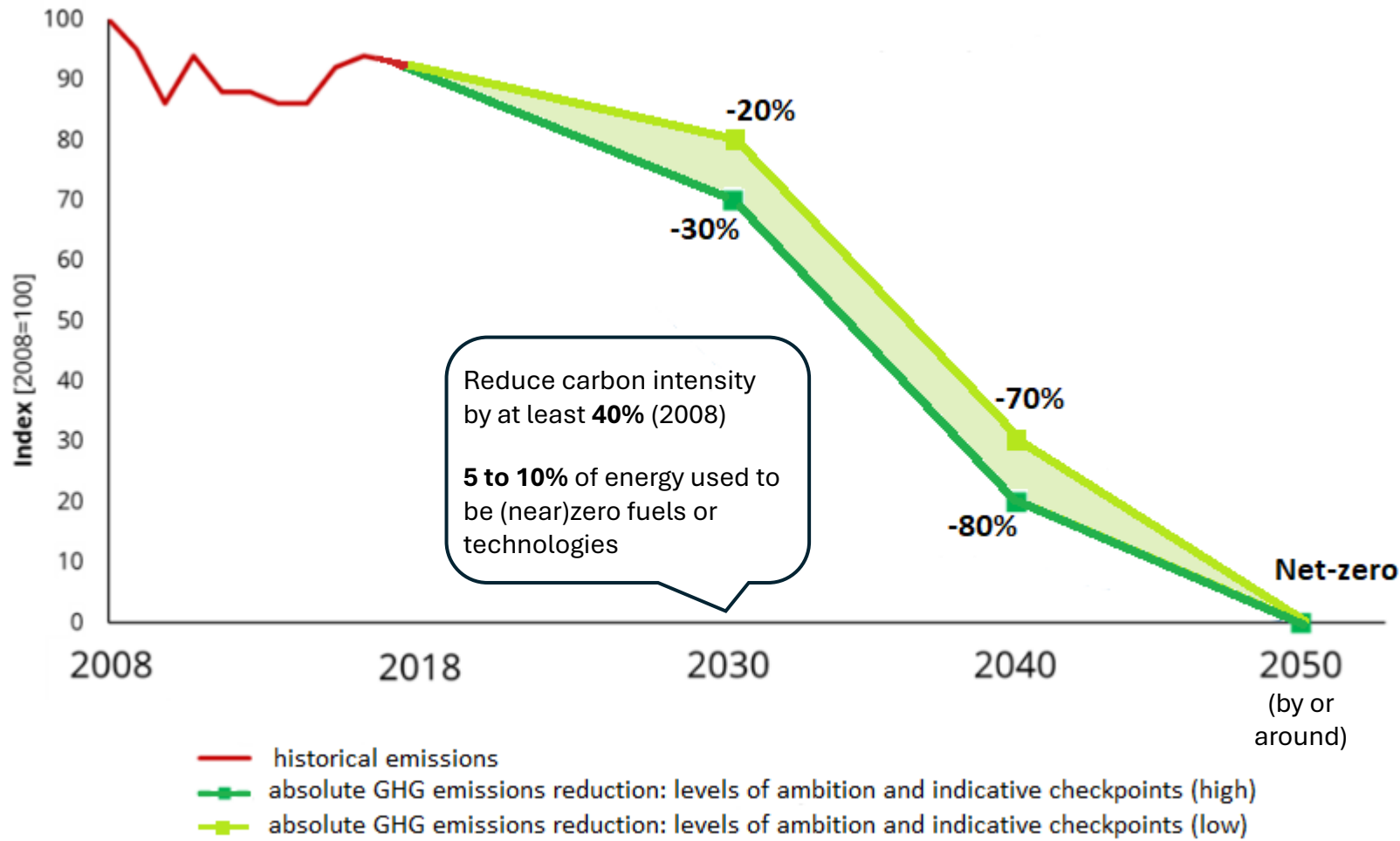
CincoDías 45

El transporte marítimo eleva su compromiso ambiental hasta las cero emisiones netas en 2050



“IMO remains committed to reducing GHG emissions from international shipping and, as a matter of urgency, aims to **phase them out as soon as possible**, while promoting, in the context of this Strategy, a **just and equitable transition**”

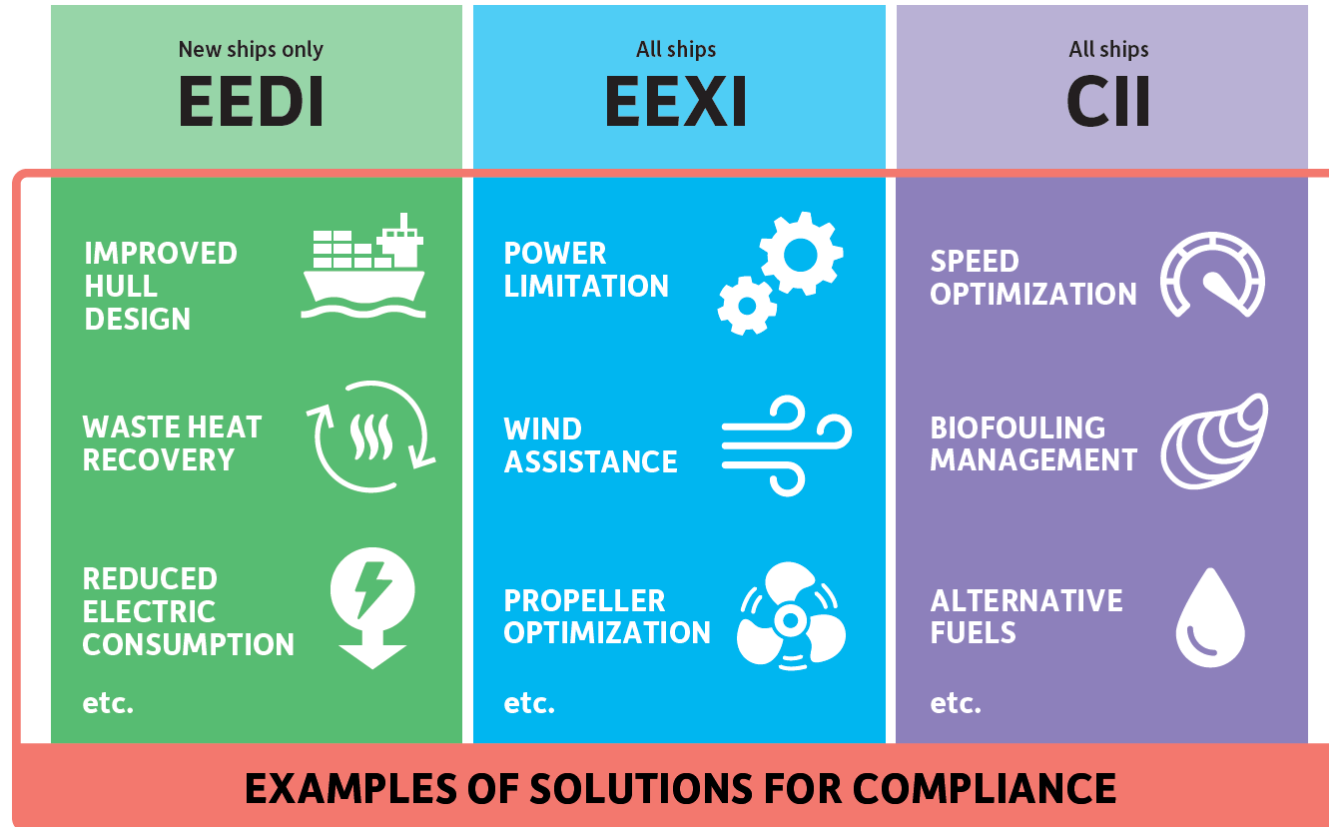
# Overview of the 2023 IMO GHG Strategy



- The “Paris Agreement” for international shipping
- Sets clear timelines for finalization of **mid-term measures**: to be approved and adopted in 2025, for entry into force in 2027
- Many other elements (guiding principles, barriers, supportive measures, safety and human element, etc.): **a framework for action by IMO and the sector as a whole**
- Review in 2028
- Etc.

# 3. Update on recent IMO action to implement the 2023 GHG Strategy

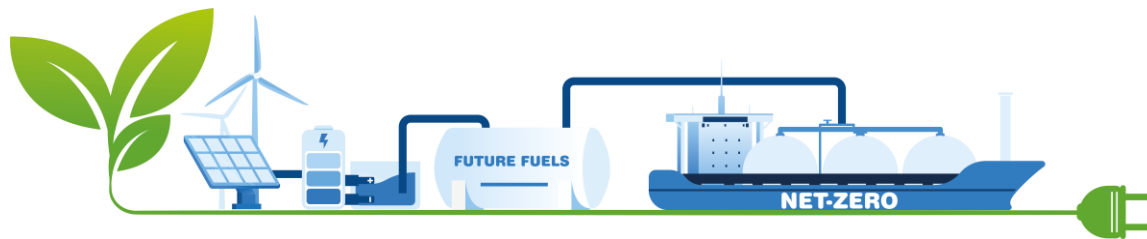
# Implementing the IMO GHG Strategy: IMO energy efficiency measures



- Goal-based regulations incentivizing energy efficiency and reduced carbon intensity (e.g. biofuels for CII)
- Mandatory regulations creating a level playing field across the sector
- Addressing both new and existing ships
- Based on robust data collection system
- Mandatory energy efficiency management system (SEEMP) with associated audit regime
- Kept under IMO review

# Implementing the IMO GHG Strategy: IMO incentives for low emission fuels

- The 2023 IMO GHG Strategy foresees the adoption of “a basket of candidate measure(s), delivering on the reduction targets, should be developed and finalized comprised of both:
  - a **technical element**, namely a goal-based marine fuel standard regulating the phased reduction of the marine fuel's GHG intensity; and
  - an **economic element**, on the basis of a maritime GHG emissions pricing mechanism.”
- **Timelines** for finalization of the IMO Net-Zero Framework:
  - April 2025: approval of draft amendments to MARPOL Annex VI
  - October 2025: consideration of draft amendments for formal adoption (extraordinary session of MEPC)
  - Spring 2027: expected entry into force
- **Zero and near-zero fuels** are essential. About 25 to 30 MTOE low emission fuels will be needed to comply with the requirements in 2030 (source: DNV)



# Development of the IMO Net-Zero Framework

- **Key elements** of the approved IMO Net-Zero Framework:
  - **Two-tiered GFI** reduction trajectories ('base target' and 'direct compliance target')
  - GFI calculated on the basis of '**well-to-wake**' emissions (using LCA Guidelines)
  - Ability to generate/transfer '**surplus units**' (SUs) in case of overcompliance
  - Ability to use surplus units and/or to purchase '**remedial units**' (RUs) in case of compliance deficit
  - Transfers to be registered in the ship's account in the **IMO GFI Registry**
  - Ability to receive '**rewards**' for the use of zero/near-zero fuels, technologies,
  - Framework for **certification of sustainable fuels (LCA)**
- **Other elements** of the approved IMO Net-Zero Framework:
  - Establishment of the **IMO Net-Zero Fund** to provide rewards for the use of zero/near-zero fuels technologies and to support Member States with a range of other initiatives supporting the implementation of the IMO net-zero framework and the energy transition of shipping
  - Enhanced focus on assessing possible impacts on **food security**
  - Explicit support to promotion of **technical cooperation** and **transfer of technology**

**World's first** regulatory framework to combine mandatory emissions limits and GHG pricing across an entire industry sector

**Mandatory** for all ships > 5,000 tons from 2028 (~85% of emissions)

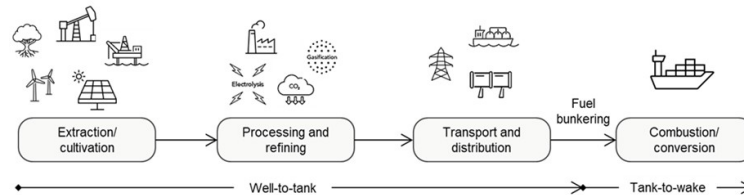
Amendments to be formally adopted in October during **MEPC extraordinary session**

Expected to provide **regulatory certainty** for industry and fuel providers

# Implementing the IMO GHG Strategy: IMO fuel sustainability assessment framework



- Current IMO regulations only focus on downstream emissions (“**Tank-to-Wake**”)
- Low- and zero-carbon fuels have very different overall GHG intensities when considering only the downstream emissions and when considering also the upstream emissions (“**Well-to-Tank**”)



- MEPC 80 adopted the first *Guidelines on life cycle GHG intensity of marine fuels (LCA Guidelines)* providing the methodology and framework for the assessment of Well-to-Wake emissions
- Establishment of an expert group for scientific review of the LCA framework: **GESAMP-LCA**
- Development of a sustainable marine fuel **certification framework**

Sustainability themes/aspects in the IMO LCA Guidelines
1. GHGs
2. Carbon source
3. Source of electricity/energy
4. Carbon stock – DLUC
5. Carbon stock – ILUC
6. Water
7. Air
8. Soil
.9 Waste and chemicals
.10 Conservation

# Implementing the IMO GHG Strategy: IMO safety regulations and training standards

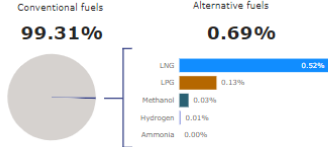
- On the use of **liquid biofuels (e.g. FAME, HVO)**, there is already a wide set of safety rules applying today, including for blends
- **MSC:** new (continuous) output on "Development of a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels"
  - recommendations to address barriers and gaps in current IMO instruments that impede the safe use of alternative fuels or new technologies
- **MSC 109** (December 2024) approved *Interim guidelines for the safety of ships using ammonia as fuel*
- **MSC 110** (June 2025) approved *Generic interim guidelines on training for seafarers on ships using alternative fuels and new technologies*
- CCC plans to further develop and finalize interim guidelines for safety of ships using **hydrogen** as fuel, with a view to approval at MSC 111 in 2026.
- IMO participation in the Maritime Just Transition Task Force (**MJTTF**)

# IMO Future Fuels and Technology project (FFT)

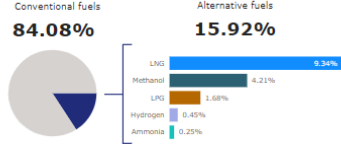


Overview | LNG | Methanol | Ammonia | Hydrogen ICE | Fuel Cell | LPG | Battery | Scrubber

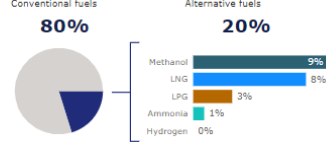
### Percentage of ships in operation



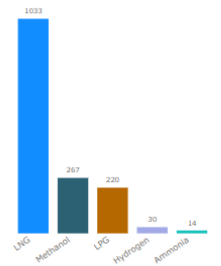
### Percentage of ships on order



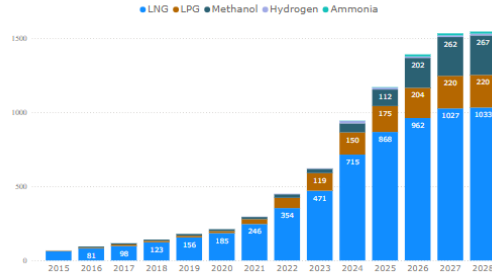
### New contracts in the last 12 months



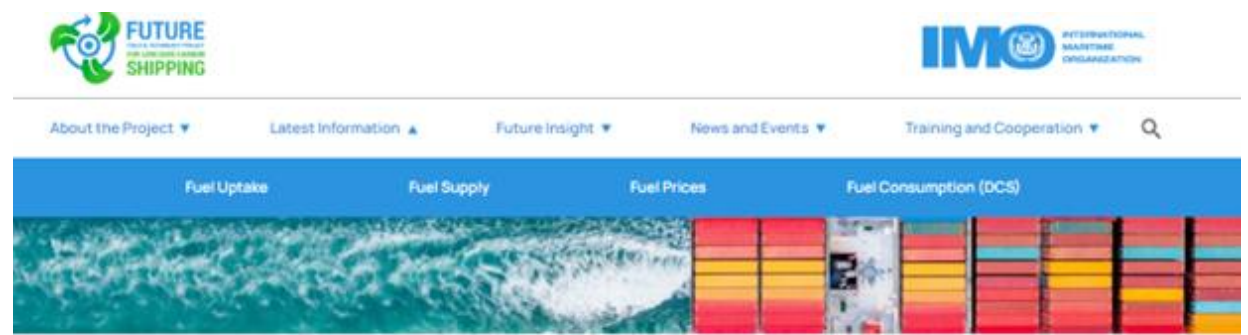
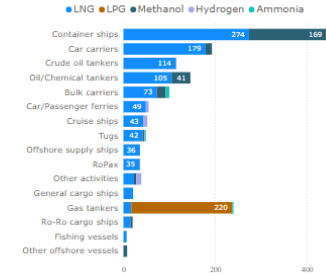
### Number of vessels by fuel type



### Growth of alternative fuel uptake by number of ships



### Number of vessels by fuel type



Home > Latest Information

## Latest Information

The most up-to-date data on alternative fuels uptake and supply, current fuel prices, and information from the IMO Data Collection System (DCS).



### Fuel Uptake

The latest developments in vessel uptake of alternative fuels provided by DNV's Alternative Fuel Insight (AFI) platform.

Discover More



### Fuel Supply

The latest developments in bunkering infrastructures for alternative fuels provided by DNV's Alternative Fuel Insight (AFI) platform.

Discover More



### Fuel Prices

The global alternative marine fuel price premiums and historical trends from Argus Media

Discover More



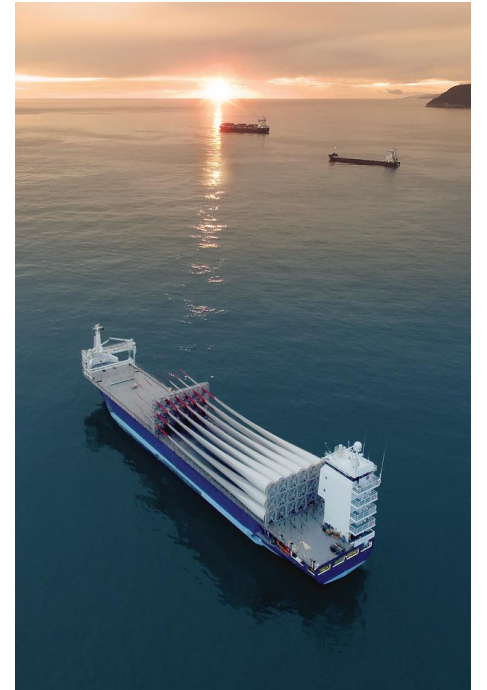
<https://futurefuels.imo.org/>

For information:  
futurefuels@imo.org

# 4. Conclusion

# Conclusion

- Implementing the IMO GHG Strategy requires continuous efforts on different fronts:
  - Enhanced energy efficiencies
  - Effective regulatory incentives to drive the shift to low emission fuels
  - Marine fuel sustainability assessment framework
  - Robust safety provisions and updated training standards for the maritime workforce
  - Increased technical cooperation and capacity-building
- IMO continues to lead global coordinated action
  - Global cooperation and industry-wide action on climate change is possible
  - Opportunities at national and local level to contribute to shipping decarbonization, e.g.: role of ports, energy producers, etc.
- 7.4% of ships in operation by tonnage can operate on alternative fuels, but they represent 49.3% of the order book:
  - 36% capable of being powered by LNG,
  - 9.6% by methanol (source: DNV)



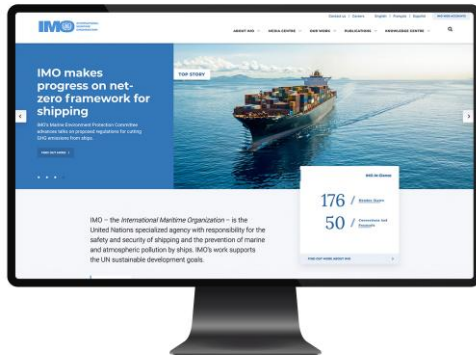
# Access to IMO information

## IMO website ([www.imo.org](http://www.imo.org))

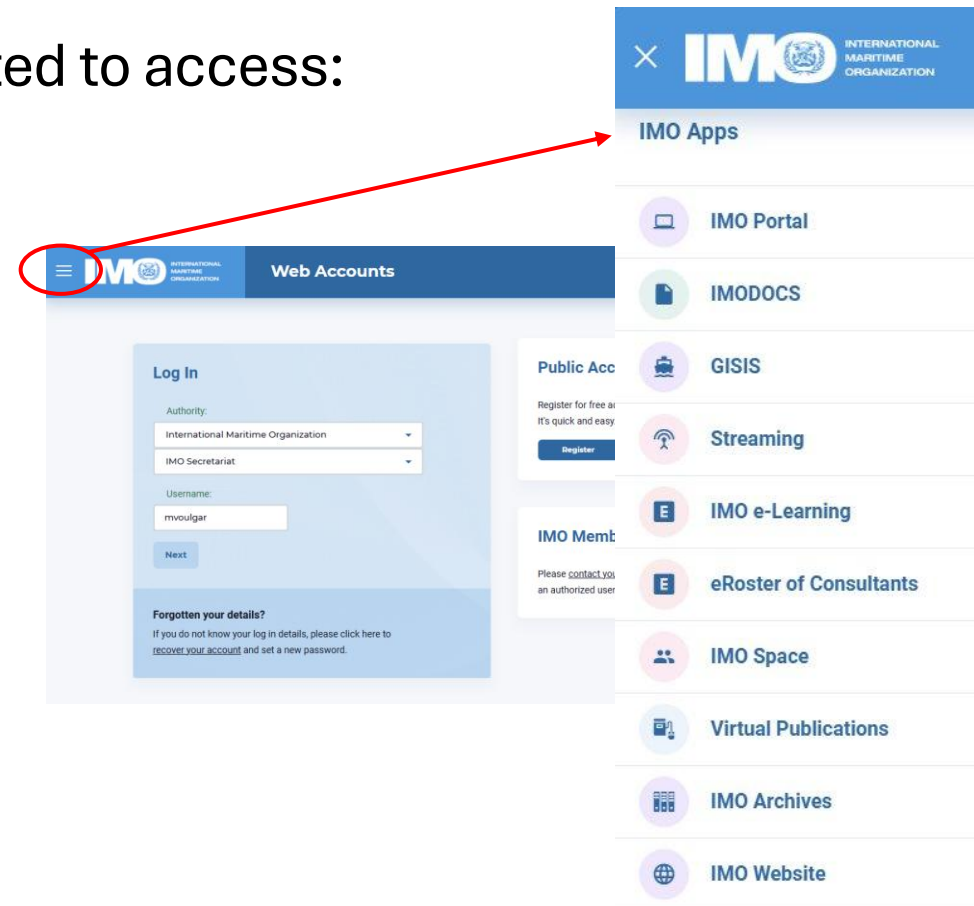
Personal **IMO web account** (public user) can be requested to access:

- IMODOCS
- Global Integrated Shipping Information System (GISIS)
- Streaming
- e-Learning platform (IMO e-Learning)

## Maritime Knowledge Center



(<https://webaccounts.imo.org>)



# Thank you.

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