

# The international regulatory framework for preventing pollution from ships

+ outcome of  
MEPC 75

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National Workshop on Ratification and Effective Implementation of MARPOL Annex VI (Lebanon)

10 December 2020

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## Introduction to IMO, structure and decision-making process

# The International Maritime Organization (IMO)

**Shipping = international activity** => needs to be governed by common international standards and not conflicting/varying individual national standards

**IMO = specialized agency of the United Nations**



1948 IMO Convention



In 2020 : 174 Member States + 3 Associate Members



81 NGOs with consultative status



64 intergovernmental organizations



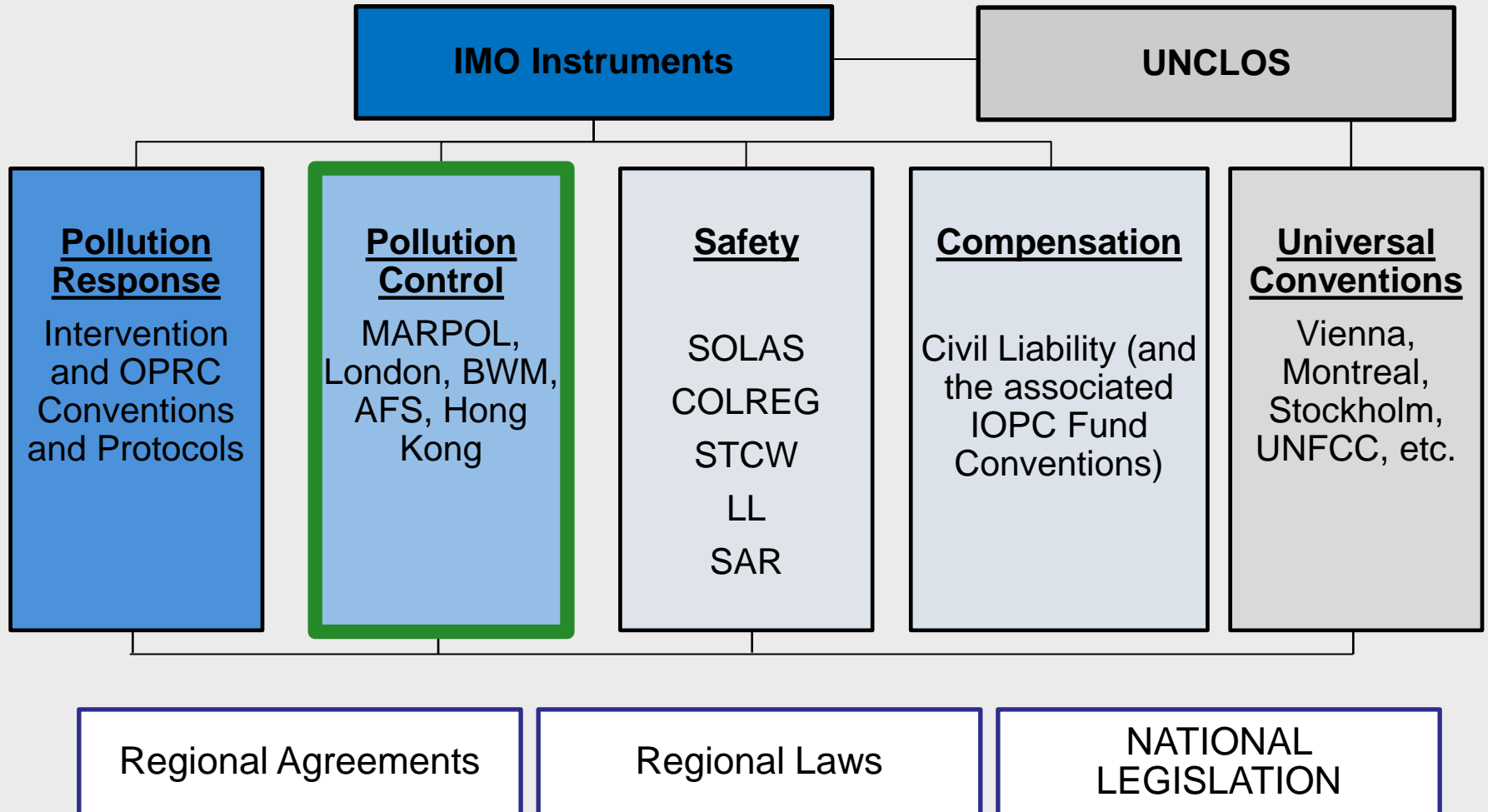
+50 international treaties +1,000 guidance and guidelines



+50 000 ships in the world apply IMO regulations



# Legislative map



# IMO Convention

## IMO Convention, article 1(a)

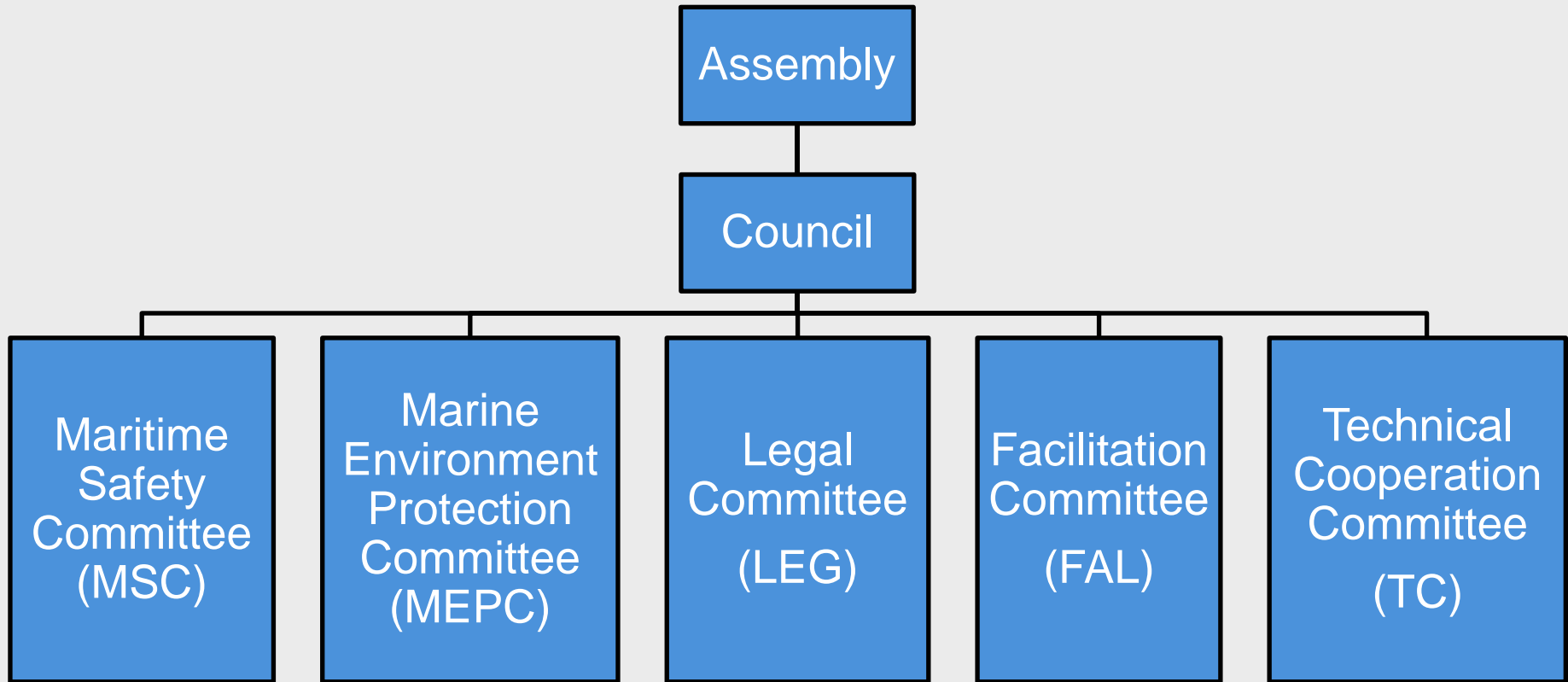
The purposes of the Organization are:

- To provide **machinery for cooperation among Governments in the field of governmental regulation** and practices relating to technical matters of all kinds affecting shipping engaged in international trade;
- to **encourage and facilitate the general adoption of the highest practicable standards** in matters concerning the maritime safety, **efficiency of navigation and prevention and control of marine pollution from ships**; [...].

- Functioning of IMO relies on **contributions** made by all Member States (e.g. proposals, information, technical papers, reports, etc.) and their **participation** in the meetings (approximately 30 weeks of sessions per year)
- Best efforts are made to reach decisions by consensus



# The structure of IMO



**Sub-Committees: HTW, III, NCSR, PPR, SDC, SSE, CCC**  
(PPR = Pollution Prevention and Response)

**Intersessional Working Groups (ex: ESPH, GHG, etc.)**

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## Brief overview of the MARPOL Convention and its Annexes



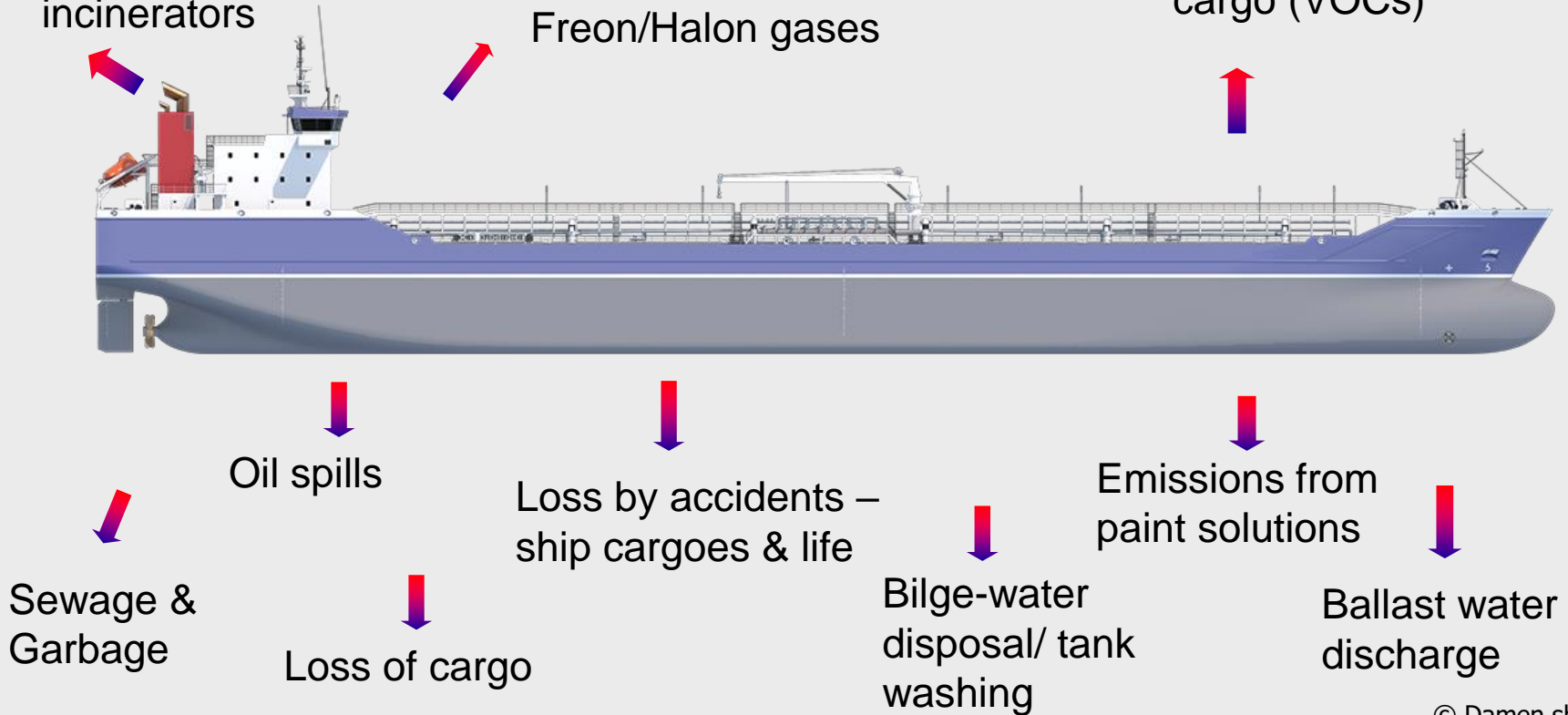
# Sources of Pollution from Ships

Exhaust Gases (SO<sub>x</sub>, NO<sub>x</sub>, GHG, etc.) from:

- main and auxiliary engines
- boilers
- incinerators

Emissions of Freon/Halon gases

Evaporation from cargo (VOCs)



© Damen shipyards

# IMO Conventions for Preventing Pollution from Ships

- IMO provides the machinery to facilitate cooperation between Member States to regulate shipping, Member Governments use IMO to draw up internationally agreed standards that can be applied to all ships.
- MARPOL, consisting of six annexes, is the main international convention covering prevention of operational or accidental pollution of the marine environment by ships.
- Parties to MARPOL are obliged to implement compulsory Annexes I and II and the optional Annexes they have ratified
- There are also 4 conventions outside MARPOL that are relevant to Preventing Pollution from ships:
  - London Convention and London Protocol
  - Ballast Water Management
  - Hong Kong Convention
  - Anti-Fouling Systems Convention



# International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)

- **MARPOL Convention** = main international convention covering prevention of operational or accidental pollution of the marine environment by ships

Annexes I & II	Annex III	Annex IV	Annex V	Annex VI
Oil and Noxious Liquid Substances	Harmful Substances Carried at Sea in Packaged Form	Sewage from Ships	Garbage from Ships	Air Pollution from Ships
In Force	In Force	In Force	In Force	In Force
159 Parties	149 Parties	145 Parties	154 Parties	99 Parties
99% of World Tonnage	98% of World Tonnage	96% of World Tonnage	99% of World Tonnage	97% of World Tonnage

NB: Figures of acceptance updated on 01 December 2020.

Source: <http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/Status%20-%202020.pdf>

# International Convention for the Prevention of Pollution from Ships (MARPOL)

- **Annex I – regulations for the Prevention of Pollution by Oil**

- Entered into force on 2 October 1983
- Covers prevention of pollution by oil (operational + accidental)
- The 1992 amendments to Annex I made it mandatory for new oil tankers to have double hulls



- **Annex II - Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk**

- Entered into force on 2 October 1983
- Details the discharge criteria and measures for the control of pollution by noxious liquid substances carried in bulk (about 250 substances)
- Discharge of their residues is allowed only to reception facilities



# International Convention for the Prevention of Pollution from Ships (MARPOL)

- **Annex III – Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form**

- Entered into force on 1 July 1992
- Contains general requirements for the issuing of detailed standards on packing, marking, labelling, documentation, stowage, quantity limitations, exceptions and notifications.
- “harmful substances” = marine pollutants in the International Maritime Dangerous Goods Code (IMDG Code)



- **Annex IV - Prevention of Pollution by Sewage from Ships**

- Entered into force on 27 September 2003
- Discharge of sewage into the sea is prohibited (except with sewage treatment plant or when the ship is discharging comminuted and disinfected sewage)



# International Convention for the Prevention of Pollution from Ships (MARPOL)

- **Annex V – Prevention of Pollution by Garbage from Ships**

- Entered into force on 31 December 1988
- Deals with different types of garbage and specifies the distances from land and the manner in which they may be disposed of.
- The most important feature of the Annex is the complete ban imposed on the disposal into the sea of all forms of plastics.



- **Annex VI – Prevention of Air Pollution from Ships**

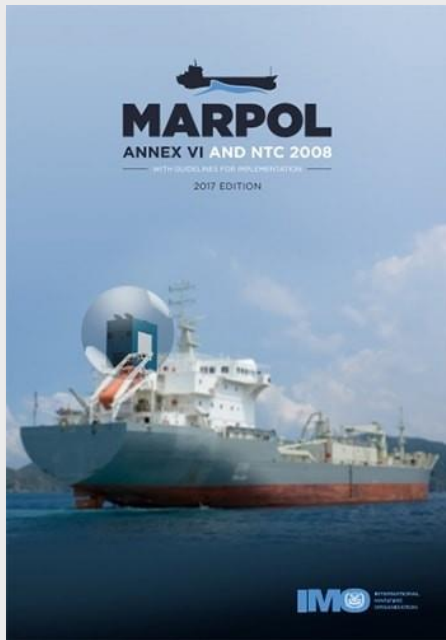
- Local air pollutants (SOx, PM, NOx)
- Ozone Depleting Substances
- Volatile Organic Compounds
- Incinerators
- Energy Efficiency of Ships



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## Roles and responsibilities of Administrations

# Ratification of MARPOL Annex VI



- Air Pollution Conference 1997 adopted the Protocol of 1997 to amend the MARPOL Convention, adding a new Annex VI entitled “Regulations for the Prevention of Air Pollution from Ships”
- Protocol of 1997 entered into force on May 2005.
- Number of Contracting States: 99 (as of 01 December 2020)
- The combined merchant fleets of which constitute approximately 96.72 % of the gross tonnage of the world’s merchant fleet
- Accession to MARPOL Annex VI via ratification of the Protocol of 1997.
- Entry into force in the Country 3 months after the date of deposit of the instrument of ratification



# Parties obligations

- A Party will need to implement a range of monitoring, compliance and enforcement mechanisms to give force and effect to the Convention

## MARPOL, article 1(1)

“Parties shall undertake to **give effect to the provisions** of the present Convention and those Annexes thereto by which they are bound, in order to prevent the pollution of the marine environment by the discharge of harmful substances or effluents containing such substances in contravention of the Convention”

- Compliance with the Convention should primarily focus on preventing pollution, and not simply on apprehending and punishing violators
- The extent to which education, incentives, monitoring and policing programmes are used by a State to ensure compliance with MARPOL depends upon the type of jurisdiction that the State enjoys over a ship
- Subject to mandatory audit under the IMO Instruments Implementation Code (III Code)



# Non-Parties

- Non-Party: does not accept the obligations to place restrictions upon its ships and, therefore, its ships cannot be prosecuted for failing to comply
- Except in territorial waters of a Party:

## MARPOL, article 5(4)

“With respect to the ship of non-Parties to the Convention, Parties shall apply the requirements of the present Convention as may be necessary to ensure that **no more favourable treatment** is given to such ships.”

=> **No more favourable treatment (“NMFT principle”)**: Parties may apply the provisions of the Conventions to Parties’ ships as well as non-Parties’ ships

- When the shore of a non-Party is polluted or its air quality is affected => it has no privilege under MARPOL to insist upon prosecution of the ship concerned

# The benefits of becoming a Party to MARPOL Annex VI

- **No more favourable treatment** means that port States obliged to impose the conditions of the conventions on Parties as well as non-Parties; approximately 97% of the world's global tonnage have ratified MARPOL Annex VI.
- A Government may wish to become a Party to MARPOL Annex VI due to:
  - Marine environmental concerns for waters under their jurisdiction.
  - Air quality concerns, as they affect populations or land areas under their jurisdiction.
  - Benefits to their shipowners (worldwide acceptance of ships).
  - Benefits to their ports (means to control pollution).
  - Concern for worldwide environment.
- Parties to MARPOL have the **obligation** not to discharge harmful substances into the sea or to control the discharge of pollutants to the atmosphere.
- ...but they in return have the **privilege** of not being polluted by other Parties (if they are, and the pollution occurs within their territorial waters, they can prosecute).

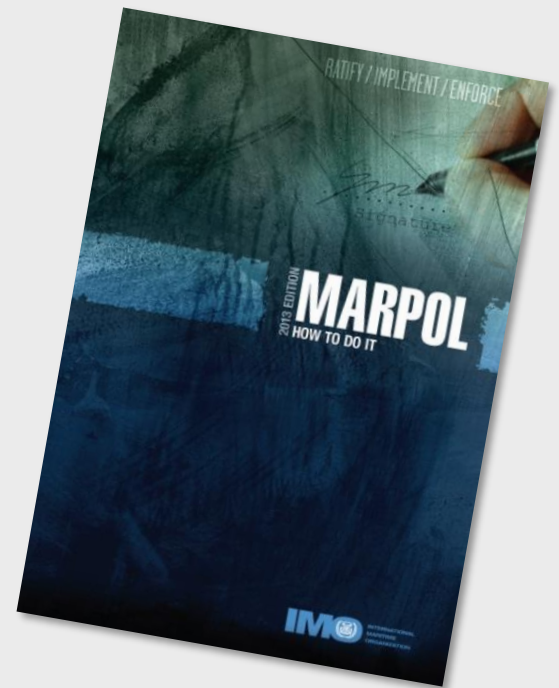
# Compliance strategy

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- Variety of strategies for ensuring compliance:
  - Compliance monitoring through routine **flag inspections or surveys**, using inter alia:
    - the *Survey guidelines under the Harmonized System of Survey and Classification (HSSC)*, 2017 (resolution A.1130(30))
    - the *Code for Recognized Organizations (RO Code)* (resolution MEPC.237(65))
  - **Port state inspections**
  - Detection and policing **patrols**
  - **Reporting procedures and incentives**, including incentives for self-reporting
  - Adequate **investigations** of violations reported or otherwise detected
  - A system of adequate **sanctions** in respect of violations
  - **Education and public awareness** programmes
  - **Cooperation and coordination** with other Parties (e.g. through PSC MoU)

# Means of participation

- Accession to MARPOL and its implementation require the participation of some or all of the following:
  - Government of the State (political body having power to conclude international agreements), including Maritime/Transport/Environment Administration, Legal Administration, etc.
  - Specialized national technical agencies
  - Local authorities, if relevant
  - Port authorities
  - Shipowners
  - Public participation?
- Each sector should know exactly what are its institutional rights and obligations, responsibilities, and the requirements to be imposed on ships and ports



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## Role of the ISM Code regarding safety and compliance issues

# The ISM Code

- The **International Safety Management Code** (ISM Code) was initially developed in the late 1980s to address poor management standards in shipping, especially with regard to safe operation of ro-ro passenger ferries.
- The IMO Assembly adopted resolution A.741(18) on *International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code)*
  - “The purpose of this Code is to provide an international standard for the safe management and operation of ships and for pollution prevention” (Preamble)
- The Code establishes safety-management objectives and requires a **safety management system (SMS)** to be established by the company
  - “The company should establish procedures, plans and instructions, including checklists as appropriate, for key shipboard operations concerning the safety of the personnel, ships and protection of the environment. The various tasks should be defined and assigned to qualified personnel” (section 7)



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# Introduction to IMO's Integrated Technical Cooperation Programme



# Technical Cooperation

## Integrated Technical Cooperation Programme (ITCP)

- Designed to **assist developing countries** improve their ability to comply with international rules and standards relating to maritime safety the protection of the environment.
- Goal: ensure **no one is left behind**
- Gives priority to **technical assistance programmes** that focus on human resources, development and institutional capacity building
- Activities mostly delivered through **IMO Secretariat** and **regional outreach mechanisms**, such as REMPEC or MTCCs, which coordinate and manage regional technical assistance programmes.



# Some major environment-related projects (new IMO Department of Partnerships and Projects)



- **GloLitter**, new IMO-FAO project launched in December 2019. Initial funding by Norway.
- To assist developing countries prevent and reduce marine litter, including plastic litter, from the maritime transport and fisheries sectors.



- **GreenVoyage-2050**, new Norway-IMO project launched at MEPC 74. Budget: US\$5.4 million.
- To promote global efforts to demonstrate and test technical solutions for reducing GHG emissions from ships, and to continue building capacity in developing countries. Private stakeholders and more than 50 countries are expected to participate.



- **IMO-Norad MEPSEAS Project**, to improve ratification and implementation of IMO instruments in South-East Asia: MARPOL Convention, AFS Convention, London Convention, Ballast Water Management Convention
- 2018 to 2021



- **IMO-EU Global MTCC Network (GMN) Project**, 2015 – December 2020. Budget: €10 million (EU funded)
- To establish 5 Maritime Technology Cooperation Centres (MTCCs) in 5 regions worldwide to promote energy efficient technologies in the maritime sector



- **GloFouling**, new GEF-UNDP-IMO project to assist developing countries to reduce the transfer of harmful aquatic organisms through biofouling. Launched at MEPC 73. Budget: US\$ 7 million. From 2020 to 2024.
- Global benefits: resilience of marine ecosystems and reduction of GHG emissions from shipping.

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## Outcome of MEPC 75

(atmospheric emissions only)

For up-to-date information:

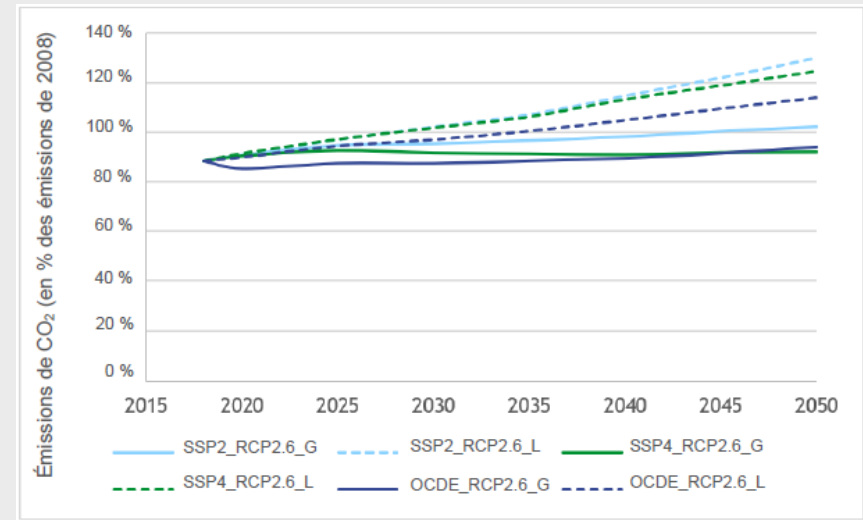
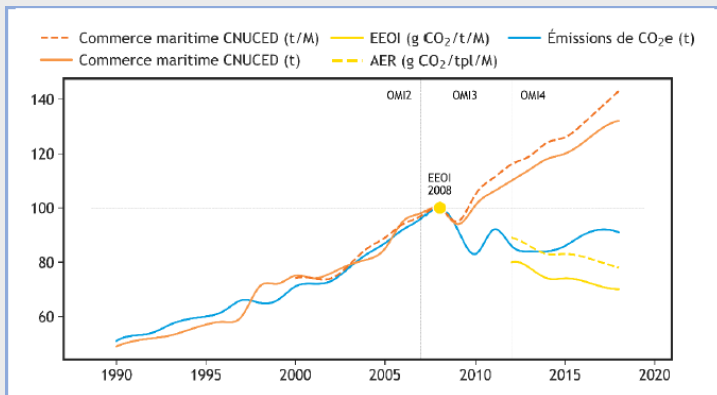
<https://www.imo.org/en/MediaCentre/MeetingSummaries>

# Approval of the 4th IMO GHG Study 2020

- 2012-2018 shipping GHG inventory

Year	Total shipping emissions in million tonnes CO <sub>2</sub>	Share of total shipping in total of anthropogenic emissions	International shipping (voyage-based allocation) in million tonnes CO <sub>2</sub>
2008	1,135	3.50%	775
2012	962	2.76%	701
2018	1,056	2.89%	740

- Carbon intensity calculations



- Under Business-as-usual scenarios, 2050 emissions from shipping are expected to represent between 90% and 130% of 2008 emissions
- Ambition of the Initial IMO GHG Strategy: reduce GHG emissions by at least 50% in 2050 compared with 2008

Source : document MEPC 75/7/15

# Adoption of amendments to accelerate EEDI phase 3

- Adoption of amendments to MARPOL Annex VI to strengthen the energy efficiency of new ships (EEDI)
- Acceleration of the entry into effect of EEDI phase 3 (from 1 April 2022 for some ship types/sizes instead of 1 January 2025)



## Regulation 21 Required EEDI

6 The existing table 1 (Reduction factors (in percentage) for the EEDI relative to the EEDI reference line) and the associated footnotes are replaced by the following:

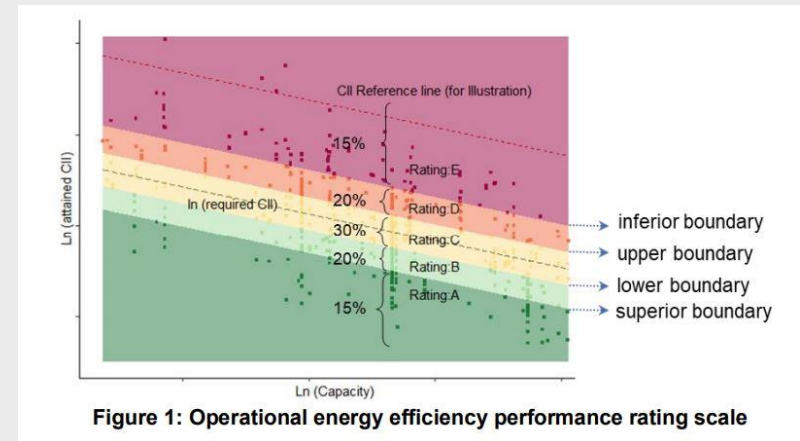
Ship Type	Size	Phase 0	Phase 1	Phase 2	Phase 2	Phase 3	Phase 3
		1 Jan 2013 – 31 Dec 2014	1 Jan 2015 – 31 Dec 2019	1 Jan 2020 – 31 Mar 2022	1 Jan 2020 – 31 Dec 2024	1 Apr 2022 and onwards	1 Jan 2025 and onwards
Bulk carrier	20,000 DWT and above	0	10		20		30
	10,000 and above but less than 20,000 DWT	n/a	0-10*		0-20*		0-30*
Gas carrier	15,000 DWT and above	0	10	20		30	
	10,000 and above but less than 15,000 DWT	0	10		20		30
	2,000 and above but less than 10,000 DWT	n/a	0-10*		0-20*		0-30*
Tanker	20,000 DWT and above	0	10		20		30
	4,000 and above but less than 20,000 DWT	n/a	0-10*		0-20*		0-30*
Containership	200,000 DWT and above	0	10	20		50	
	120,000 and above but less than 200,000 DWT	0	10	20		45	
	80,000 and above but less than 120,000 DWT	0	10	20		40	
	40,000 and above but less than 80,000 DWT	0	10	20		35	
	15,000 and above but less than 40,000 DWT	0	10	20		30	

# Approval of amendments to reduce the carbon intensity of the existing fleet

- Agreement on a short-term measure to implement the Initial IMO GHG Strategy entering into force in 2023
- Approval of amendments to MARPOL Annex VI to **reduce the carbon intensity of the existing fleet by at least 40% in 2030** compared to 2008
- Goal-based approach
- Combining a **technical approach** (EEXI) and an **operational approach** (CII)
- The ex-post annual carbon intensity verification will allow for monitoring the effectiveness of the EEXI in achieving the required CII

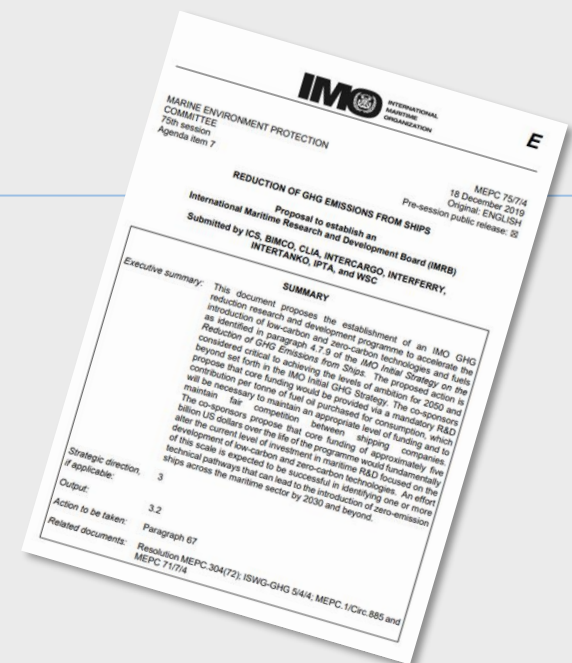
Table 3. Reduction factors (in percentage) for the EEXI relative to the EEDI reference line

Ship type	Size	Reduction factor
Bulk carrier	200,000 DWT and Above	15
	20,000 and above but less than 200,000 DWT	20
	10,000 and above but less than 20,000 DWT	0-20*
Gas carrier	15,000 DWT and above	30
	10,000 and above but less than 15,000 DWT	20
	2,000 and above but less than 10,000 DWT	0-20*
Tanker	200,000 DWT and Above	15
	20,000 and above but less than 200,000 DWT	20
	4,000 and above but less than 20,000 DWT	0-20*
Containership	200,000 DWT and above	50



# Consideration of the proposal for an IMRB

- Shipping industry proposed the establishment of an **International Maritime Research and Development Board (IMRB)** and associated Fund
  - based on a **mandatory 2 USD\$ fuel levy per tonne of fuel**
  - To create a fund of **5 billion USD** over a 10-year period to finance R&D projects, including special focus on developing States
  - The initial consideration during MEPC 75 did not conclude anything yet; **further discussion foreseen during MEPC 76** (June 2021)



# Adoption of an MEPC resolution on National Action Plans

- Adoption of resolution MEPC.327(75) on *Encouragement of Member States to develop and submit voluntary National Action Plans to address GHG emissions from ships*
- Exemples of national action plans on the IMO website:  
<https://www.imo.org/en/OurWork/Environment/Pages/RELEVANT-NATIONAL-ACTION-PLANS-AND-STRATEGIES.aspx>



Etc...



# Adoption of amendments supporting the sulphur regulations

- Reminders:
  - Since 1 January 2020: global sulphur limit of 0.50%
  - Since 1 March 2020: ban on the carriage of non-compliant fuel
- To support the effective implementation of these regulations:
  - Clarification of the **status of various samples** taken before bunkering and on board ships
  - New requirement to **identify sampling points** on board
  - Modifications to the **fuel sampling verification procedure in laboratories**
  - Consequential amendments: new definitions in MARPOL Annex VI
- Entry into force: 1 April 2022



## International Maritime Organization

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