

The international regulatory framework for preventing pollution from ships

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The International Maritime Organization (IMO)

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

IMO = specialized agency of the UN

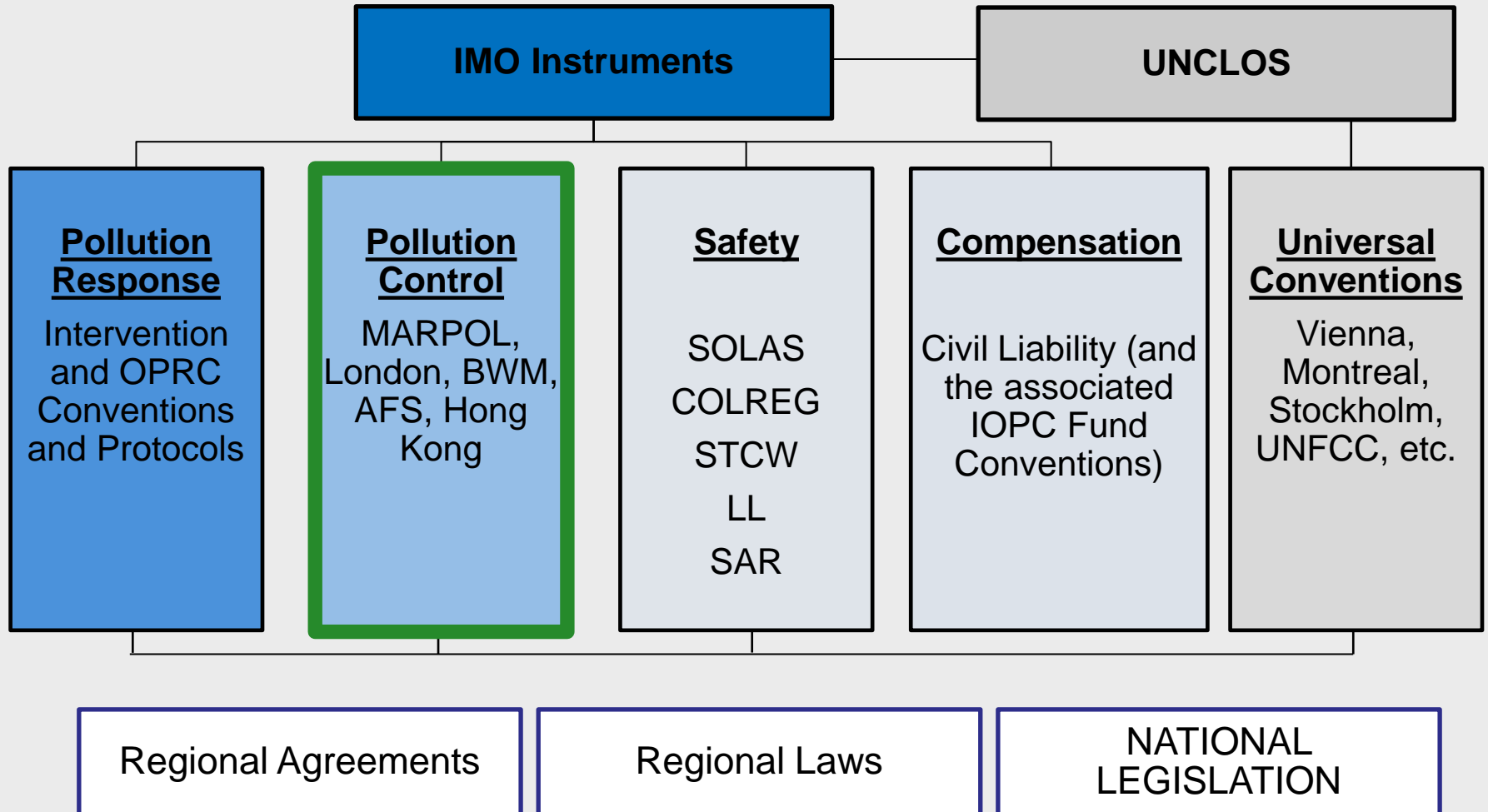
- IMO Convention was adopted in 1948
- In 2019: 174 Member States + 3 associated members
- 82 consultative NGOs; 64 IGOs



“Safe, secure and efficient shipping on cleaner oceans”

- IMO develops and maintains a comprehensive regulatory framework for shipping
- IMO addresses safety, environmental, legal matters, technical co-operation, security and the efficiency of shipping
- IMO developed and adopted more than 50 mandatory instruments and over 1,000 rules and guidelines

Legislative map



IMO Convention

IMO Convention, article 1(a)

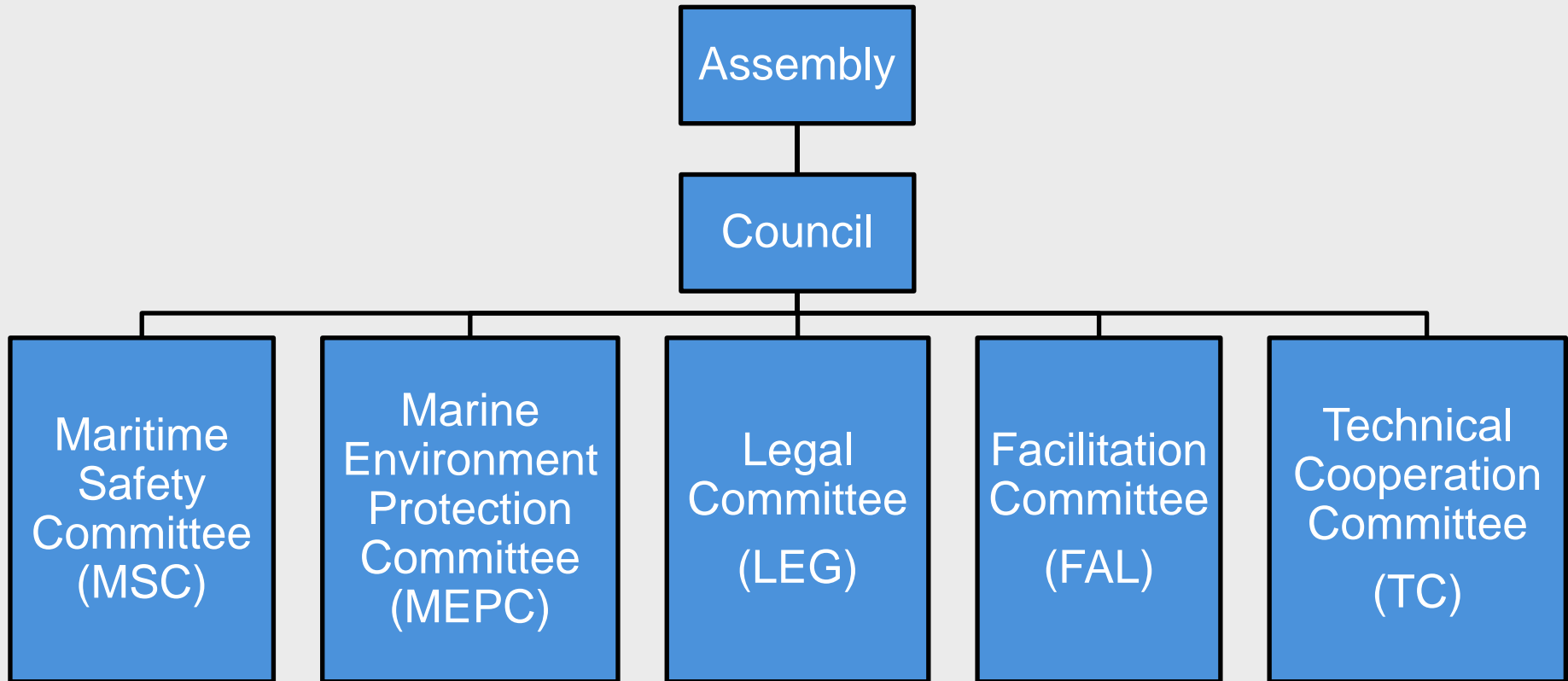
The purposes of the Organization are:

- 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.)

IMO Secretary-General



Mr. Kitack Lim (Republic of Korea)

Elected as IMO Secretary-General by the 114th session of the IMO Council in June 2015 for a four-year period beginning 1 January 2016.

Mr. Kitack Lim was re-elected in 2019 for a second term running from 1 January 2020 to December 2023.

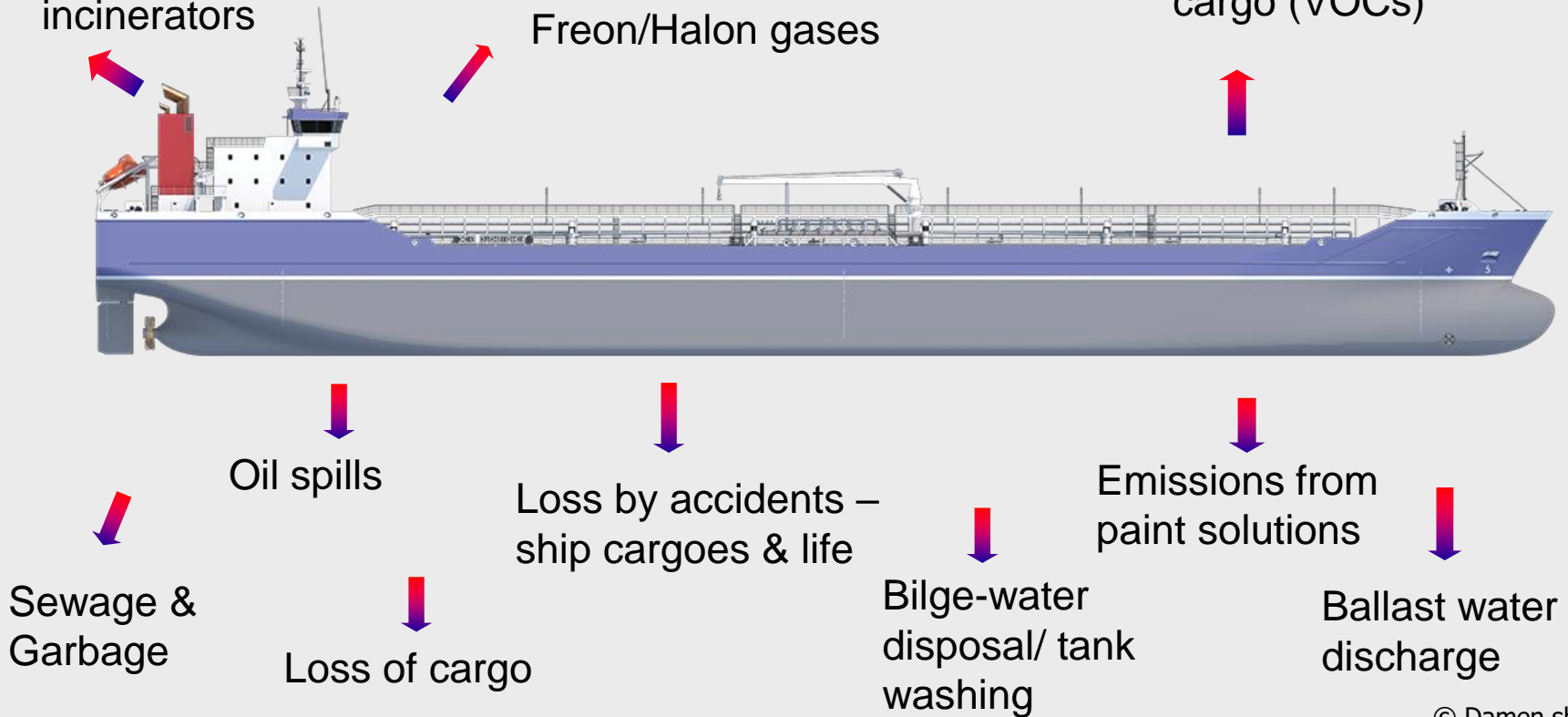
Sources of Pollution from Ships

Exhaust Gases (SO_x, NO_x, 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)

- **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
158 Parties	149 Parties	144 Parties	154 Parties	96 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 7 April 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 (abt. 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**

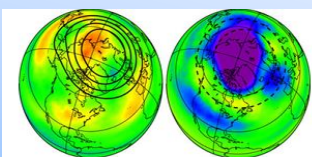
- Local air pollutants (SO_x, PM, NO_x)
- Ozone Depleting Substances
- Volatile Organic Compounds
- Incinerators
- Energy Efficiency of Ships



MARPOL Annex VI - Prevention of Air Pollution from Ships

Chapter 3: control of emissions from ships

Ozone Depleting Substances



Volatile Organic Compounds (VOCs)



Nitrogen Oxides (NO_x)



Shipboard incineration & reception facilities



Sulphur Oxides (SO_x) and PM



Fuel oil availability and quality



Chapter 4: regulations on energy efficiency for ships

EEDI



SEEMP and data collection and reporting



IMO Strategy on Reduction of GHG emissions from ships and outcomes of MEPC 75



Greenhouse Gas Emissions from Ships (Fourth IMO GHG Study 2020)

Summary

- Emissions are projected to increase from about 90% of 2008 emissions in 2018 to 90-130% of 2008 emissions by 2050
- Share of global emissions has increased from 2.76% in 2012 to 2.89% in 2018.

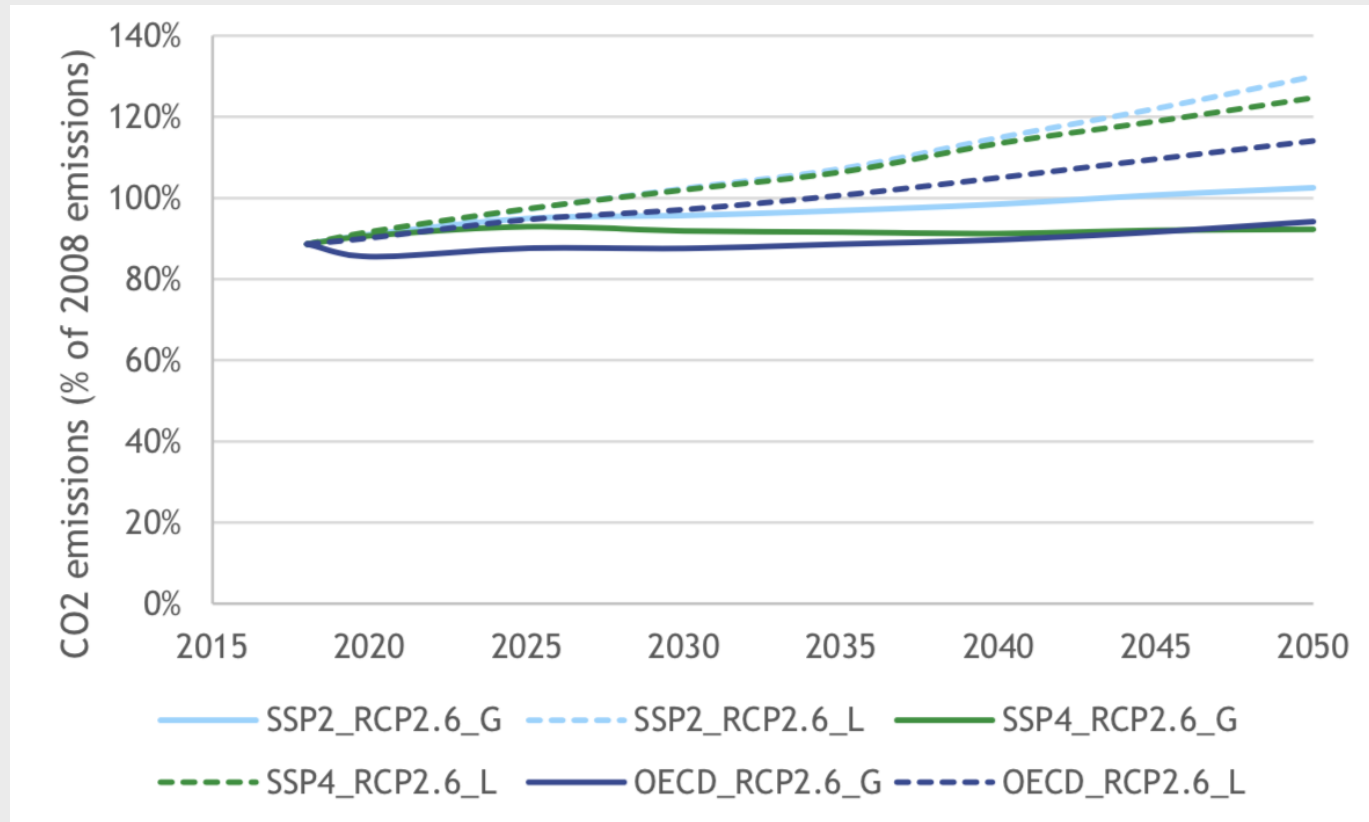


Figure 1 – Projections of maritime ship emissions as a percentage of 2008 emissions
Ref: Fourth IMO GHG Study 2020

Adoption of the Initial IMO Strategy on Reduction of GHG emissions from ships

Levels of ambition

3.1 Subject to amendment dependent on the progress of technological innovation and the global market for international shipping will be integrated into account updated emission estimates from international shipping, and the reports of the Intergovernmental Panel on Climate Change (IPCC), as relevant. Levels of ambition directing the Initial Strategy are as follows:

to review with the aim to strengthen the energy efficiency design requirements for ships with the percentage improvement for each phase to be determined for each ship type, as appropriate;

.1 *carbon intensity of further phases of the Initial Strategy for ships*

to reduce CO₂ emissions per transport work, as an average across international shipping, by at least 40% by 2030, pursuing efforts towards 70% by 2050, compared to 2008, and

to review with the aim to strengthen the energy efficiency design requirements for ships with the percentage improvement for each phase to be determined for each ship type, as appropriate;

.2 *carbon intensity of international shipping*

to reduce CO₂ emissions from international shipping, by 2050, compared to 2008, and

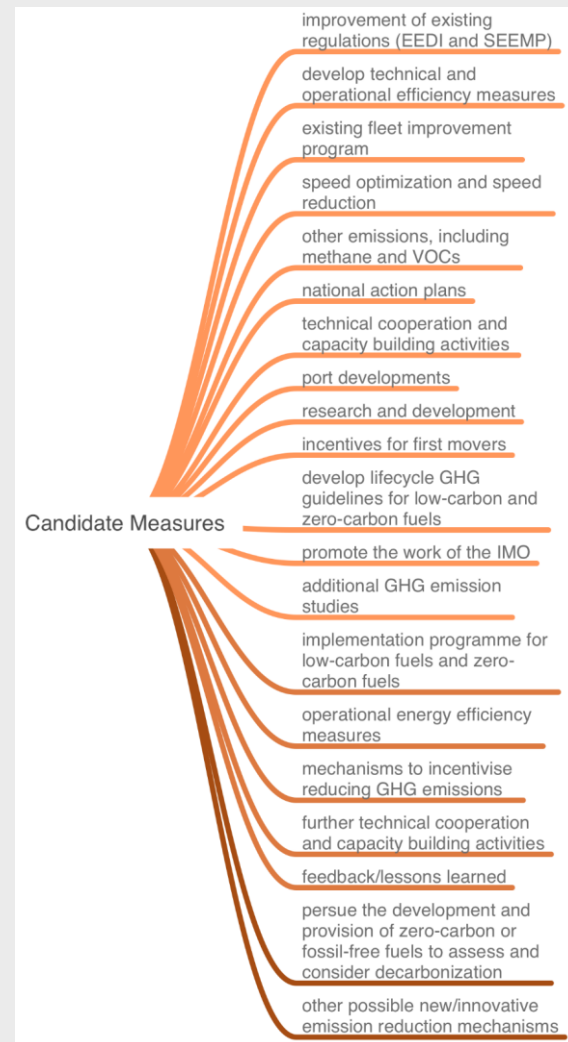
to peak GHG emissions from international shipping as soon as possible and to reduce the total annual GHG emissions by at least 50% by 2050 compared to 2008 whilst pursuing efforts towards phasing them out as called for in the Vision as a point on a pathway of CO₂ emissions reduction consistent with the Paris Agreement temperature goals.

.3 *GHG emissions from international shipping*

to peak GHG emissions from international shipping as soon as possible and to reduce the total annual GHG emissions by at least 50% by 2050 compared to 2008 whilst pursuing efforts towards phasing them out as called for in the Vision as a point on a pathway of CO₂ emissions reduction consistent with the Paris Agreement temperature goals.

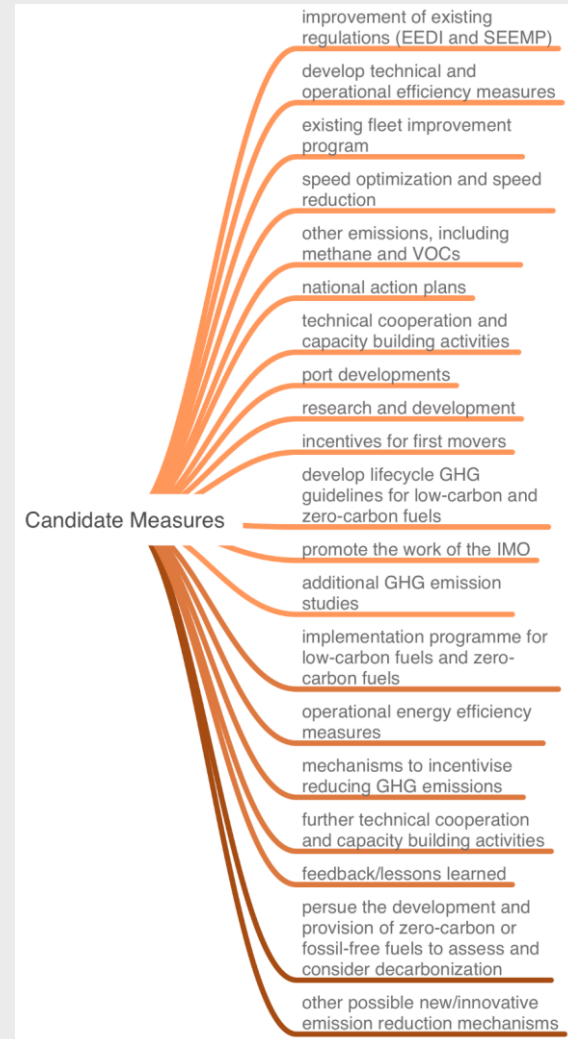
Adoption of the Initial IMO Strategy on Reduction of GHG emissions from ships

- The Initial Strategy identifies a list of candidate measures with the following timelines:
 - Short-term measures could be finalized and agreed between 2018 and 2023
 - Mid-term measures could be finalized and agreed between 2023 and 2030
 - Long-term measures could be finalized and agreed beyond 2030
- The revised IMO strategy is to be adopted in 2023.
- MEPC 74 approved the procedure for assessing impacts on States of candidate measures (MEPC.1/Circ.885)



Outcomes from MEPC 75 related to GHG emissions from ships

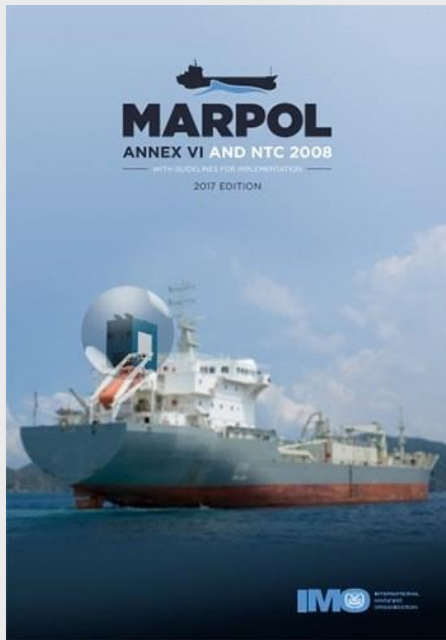
- MEPC 75 approved draft amendments to Chapter 4 of MARPOL Annex VI, to be adopted by MEPC 76 (expected to enter into force in 2023), consisting of:
 - a technical standard for existing ships, the Energy Efficiency Existing Ship Index (EEXI)
 - an operational measure, a Carbon Intensity Indicator (CII) rating system which rates existing ships A to E based on their annual operational performance
- MEPC 75 also approved Terms of Reference for a comprehensive assessment of possible impacts on States of the measures, to be considered by MEPC 76
- Additional work is needed to support the adoption of the short-term measures including comprehensive guidelines
- MEPC 75 also adopted amendments to bring forward Phase 3 of EEDI from 2025 to 2022 for some ship types



Roles and responsibilities of Administrations



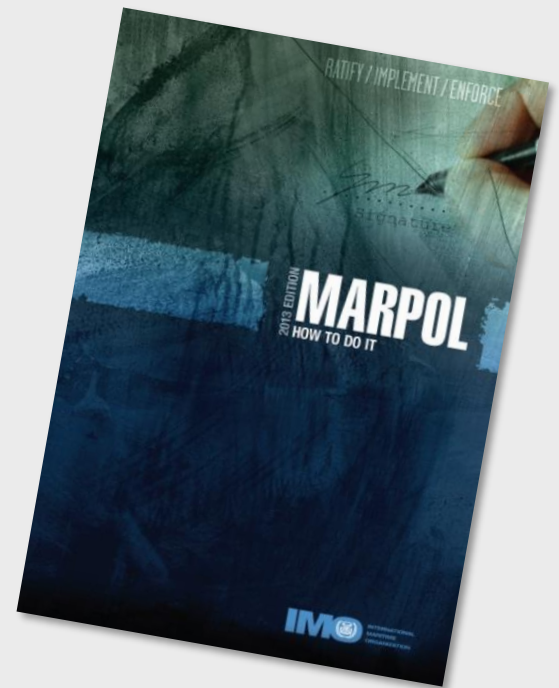
Ratification of MARPOL Annex VI



- 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: 96 (as of 7 April 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

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



Obligations of Parties and non-Parties

- 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”

- A 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.”

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).

International Maritime Organization

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For up-to-date meeting information:

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

Given the uncertainty regarding the COVID-19 pandemic, delegations should expect that all Council, committee, sub-committee and other meetings taking place before 31 July 2021 will be held remotely (PROG/129/Preliminary/Rev.1, paragraph 4).

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)



Introduction to IMO's Integrated Technical Cooperation Programme



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.

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.
- 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.

