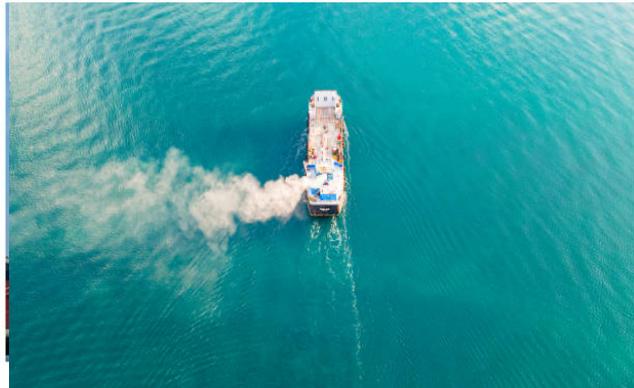




New Marine Alternative Fuels IMO's Decision-Making Process *and Latest Developments*

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Cancun,  15 June 2022

International Maritime Organization



IMO is an intergovernmental body that deals with matters on sea transport, which are referred to it by its Member Governments.

IMO is mainly involved in development of international regulations, on the basis of proposals by Member Governments.

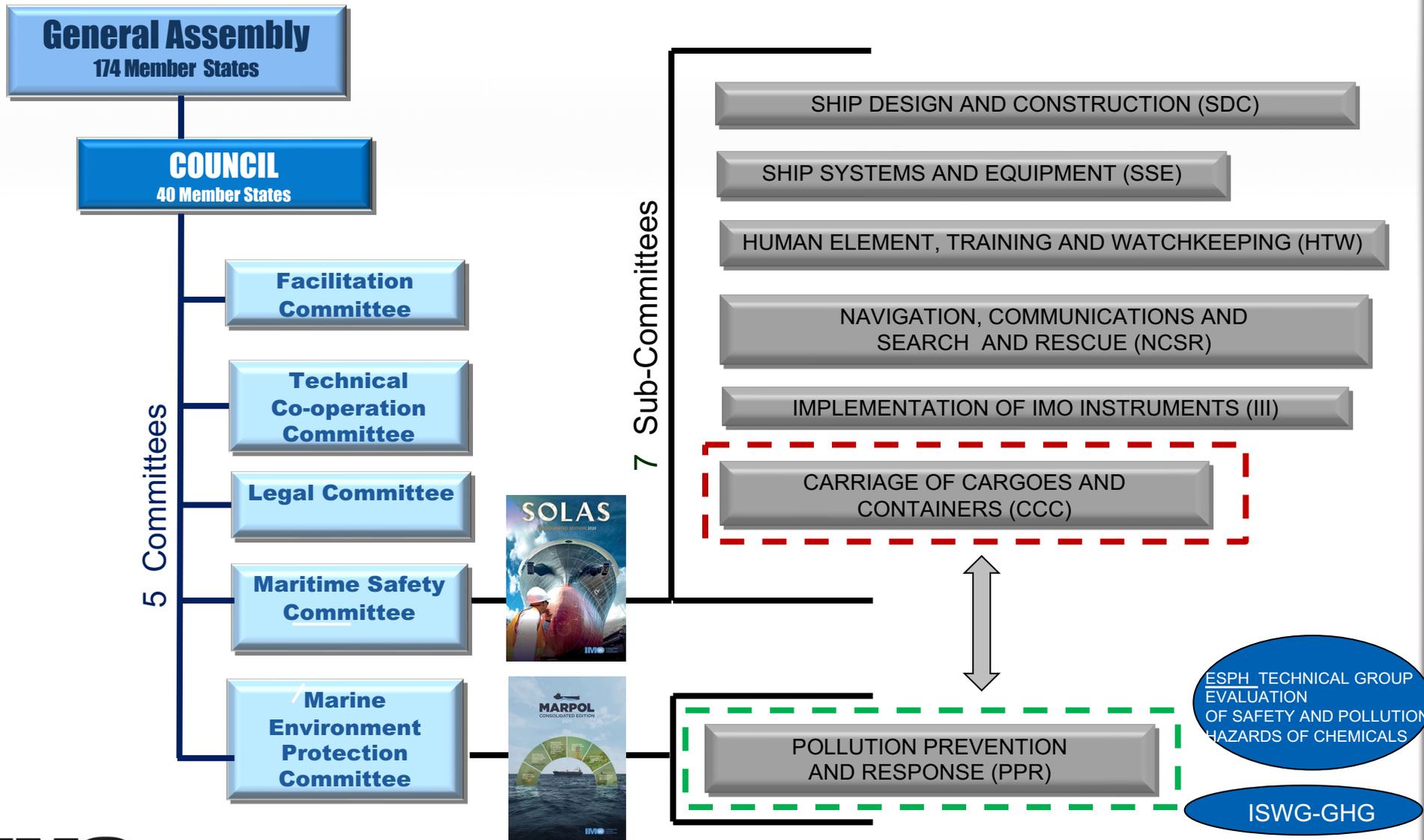
The practical design and application of the regulations is the responsibility of the national maritime Administrations concerned.

Today's presentation

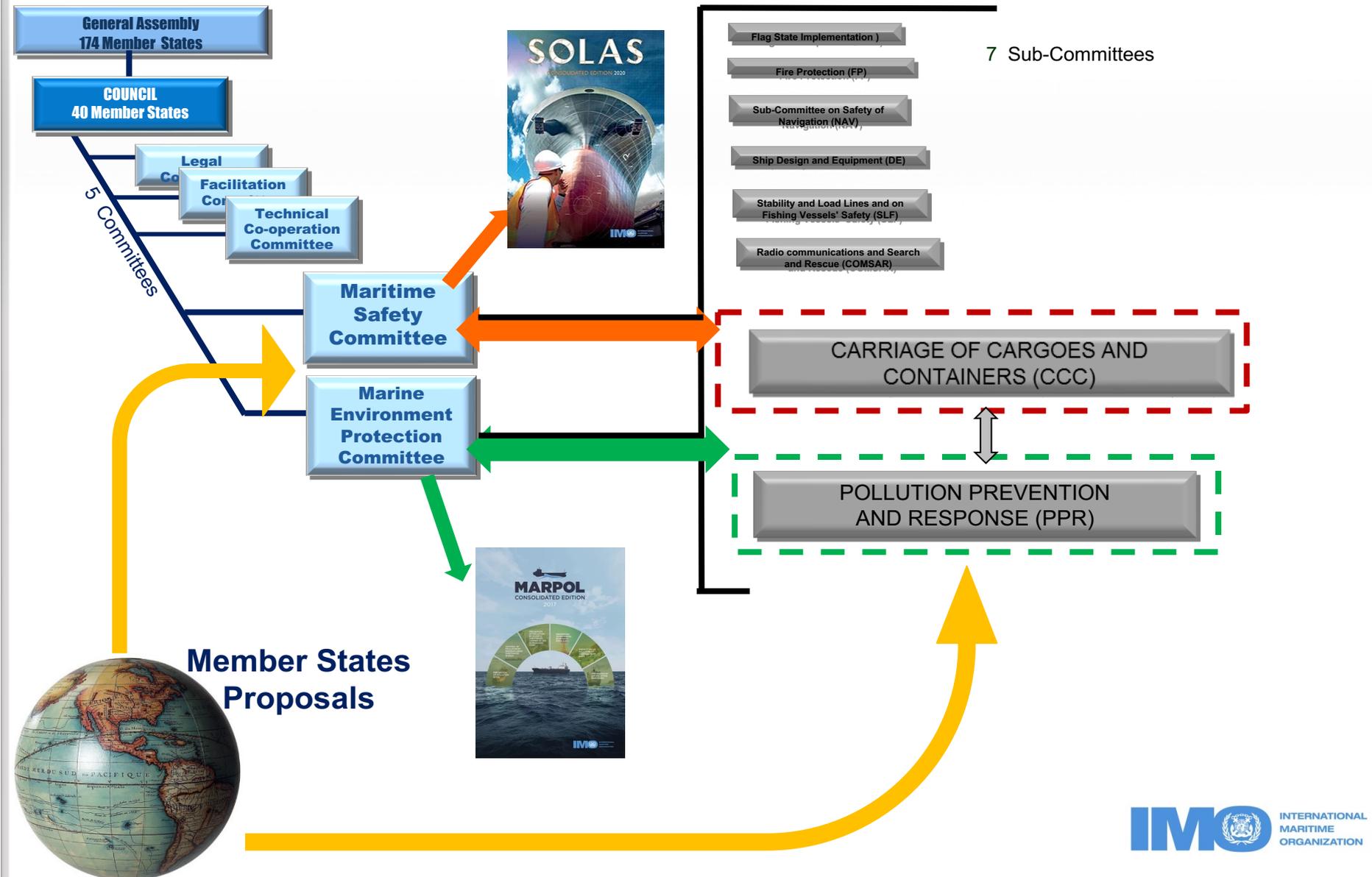


- Decision Making process (MEPC(PPR) and MSC(CCC))
- Background, SDGs, 2020 Sulphur Cap
- Scope of application of the MARPOL and SOLAS Conventions
- New Alternative (low-flashpoint) Fuels
- IGF Code / Guidelines for low-flashpoint fuels
- Future fuels.....

How it works



The process....



Background, SDGs, 2020 Sulphur Cap

IMO Contributes to the global fight against climate change



In 2018 **IMO** adopts an **initial strategy** on **reduction of GHG emissions from ships**, which confirms Member States' commitment to reducing Green House Gas emissions from international shipping.

Resolution MEPC.305(73) Amendments to the Annex of the Protocol of 1997 to amend the International Convention for the prevention of pollution from ships, 1973, as modified by the Protocol of 1978 relating thereto – Amendments to MARPOL Annex VI - Prevention of air pollution from ships

Came into force on 1 January 2020, a new limit on the sulphur content in the fuel oil used on board ships.....and agreed that: **Initial Strategy to be revised by 2023**

- marking a significant milestone to improve air quality,
- preserve the environment and protect human health.

The rule **limits the sulphur** in the fuel oil used on board ships operating outside designated emission control areas to 0.50% m/m - a significant reduction from the previous limit of 3.5%

Five beneficial changes from
IMO's **Sulphur Limit** for ships' fuel oil

Sulphur 2020



Cleaner air

77% drop in overall sulphur oxide (SOx) emissions from ships – annual reduction of approximately 8.5 million metric tonnes of SOx.



Positive impacts on human health

Premature deaths, cardiovascular, respiratory and pulmonary diseases will all be reduced.



Higher quality fuels

The majority of ships will switch to higher quality, low sulphur fuel oil to meet the limit.



Ship operators, owners + refineries have adapted

Guidance issued by IMO and other stakeholders to enhance preparedness ahead of the entry into force of Sulphur 2020.



Changes for enforcement authorities

Flag and port State control will be making sure ships are compliant.

Regulatory Framework

INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS

MARPOL

ANNEX VI - Prevention of air pollution from ships

Chapter 1 – General

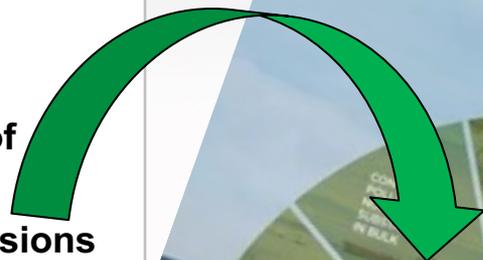
Chapter 2 Survey, certification and means of control

Chapter 3 Requirements for control of emissions from ships

Chapter 4 Regulations on energy efficiency for ships

Chapter 5 Verification of compliance with the provisions of this Annex

- Appendix I Form of International Air Pollution Prevention (IAPP) Certificate (Regulation 8)
- Appendix II Test cycles and weighting factors (Regulation 13)
- Appendix III Criteria and procedures for designation of emission control areas (Regulations 13.6 and 14.3)
- Appendix IV Type approval and operating limits for shipboard incinerators (Regulation 16)
- Appendix V Information to be included in the bunker delivery note (Regulation 18.5)
- Appendix VI Fuel verification procedure for MARPOL Annex VI fuel oil samples (Regulation 18.8.2)
- Appendix VII Emission control areas (Regulations 13.6 and 14.3)
- Appendix VIII Form of International Energy Efficiency (IEE) Certificate
- Unified Interpretations of Annex VI



“IMO 2020” Strategy



Take urgent action to combat climate change and its impacts

Since this decision and looking to the consistent implementation of the new rule, the Organization has been working/assessing to:

- prepare the sector for this change;
- assist ship operators and owners to plan ahead for the 0.50% sulphur 2020 limit,
- assess the availability of compliant fuel oil to meet the 2020 requirement

So, the MEPC approved various guidance and guidelines.

Resolution MEPC.320(74) 2019 Guidelines for consistent implementation of the 0.50% sulphur limit under MARPOL Annex VI
Resolution MEPC.321(74) 2019 Guidelines for port State control under MARPOL Annex VI Chapter 3

IMO circulars

MEPC.1/Circ.864/Rev.1 2019 Guidelines for onboard sampling for the verification of the sulphur content of the fuel oil used on board ships

MEPC.1/Circ.875 Guidance on best practice for fuel oil purchasers/users for assuring the quality of fuel oil used on board ships

MEPC.1/Circ.875/Add.1 Guidance on best practice for fuel oil suppliers for assuring the quality of fuel oil delivered to ships

MEPC.1/Circ.878 Guidance on the development of a ship implementation plan for the consistent implementation of the 0.50% sulphur limit under MARPOL Annex VI

MEPC.1/Circ.880 Reporting of availability of compliant fuel oils in accordance with regulation 18.1 of MARPOL Annex VI

MEPC.1/Circ.881 Guidance for port State control on contingency measures for addressing non-compliant fuel oil

MEPC.1/Circ.882 Early application of the verification procedures for a MARPOL Annex VI fuel oil sample (regulation 18.8.2 or regulation 14.8)

MEPC.1/Circ.883

Guidance on indication of ongoing compliance in the case of the failure of a single monitoring instrument, and recommended actions to take if the exhaust gas cleaning system (EGCS) fails to meet the provisions of the 2015 EGCS Guidelines (resolution MEPC.259(68))

MEPC.1/Circ.884 Guidance for best practice for Member State/coastal State

MEPC.1/Circ.878 Guidance on the development of a ship implementation plan for the consistent implementation of the 0.50% sulphur limit under MARPOL Annex VI

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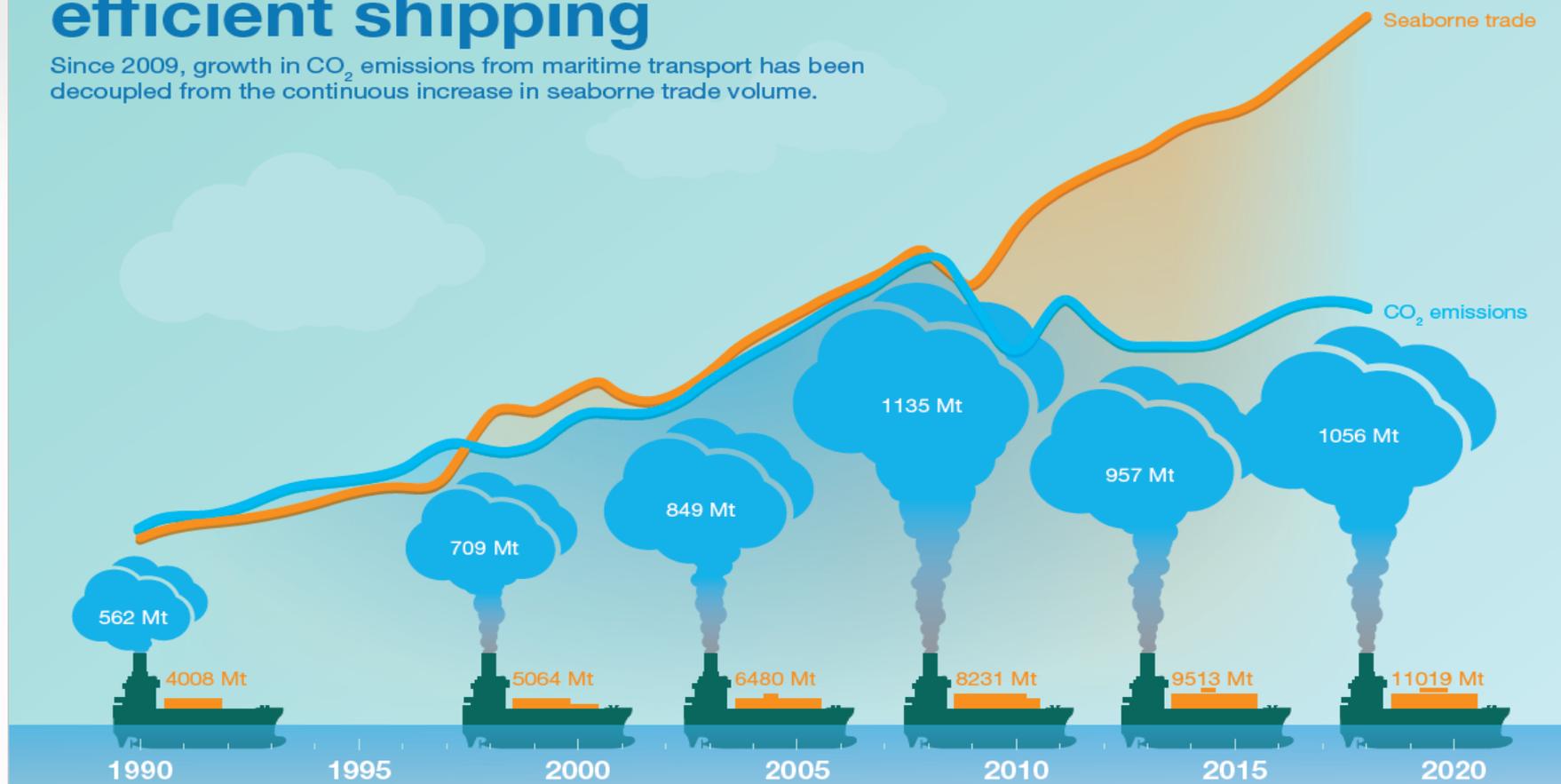
MEPC.1/Circ.883 Guidance on indication of ongoing compliance in the case of the failure of a single monitoring instrument, and recommended actions to take if the exhaust gas cleaning system (EGCS) fails to meet the provisions of the 2015 EGCS Guidelines (resolution MEPC.259(68))

MEPC.1/Circ.884 Guidance for best practice for Member State/coastal State

A decade of IMO regulatory action to reduce GHG emissions from shipping

Towards more energy efficient shipping

Since 2009, growth in CO₂ emissions from maritime transport has been decoupled from the continuous increase in seaborne trade volume.



Source: Fourth IMO GHG Study 2020



Regulatory Framework, alternative fuels

INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA

SOLAS

Chapter II-I Construction – Structure, subdivision and stability, machinery and electrical installations

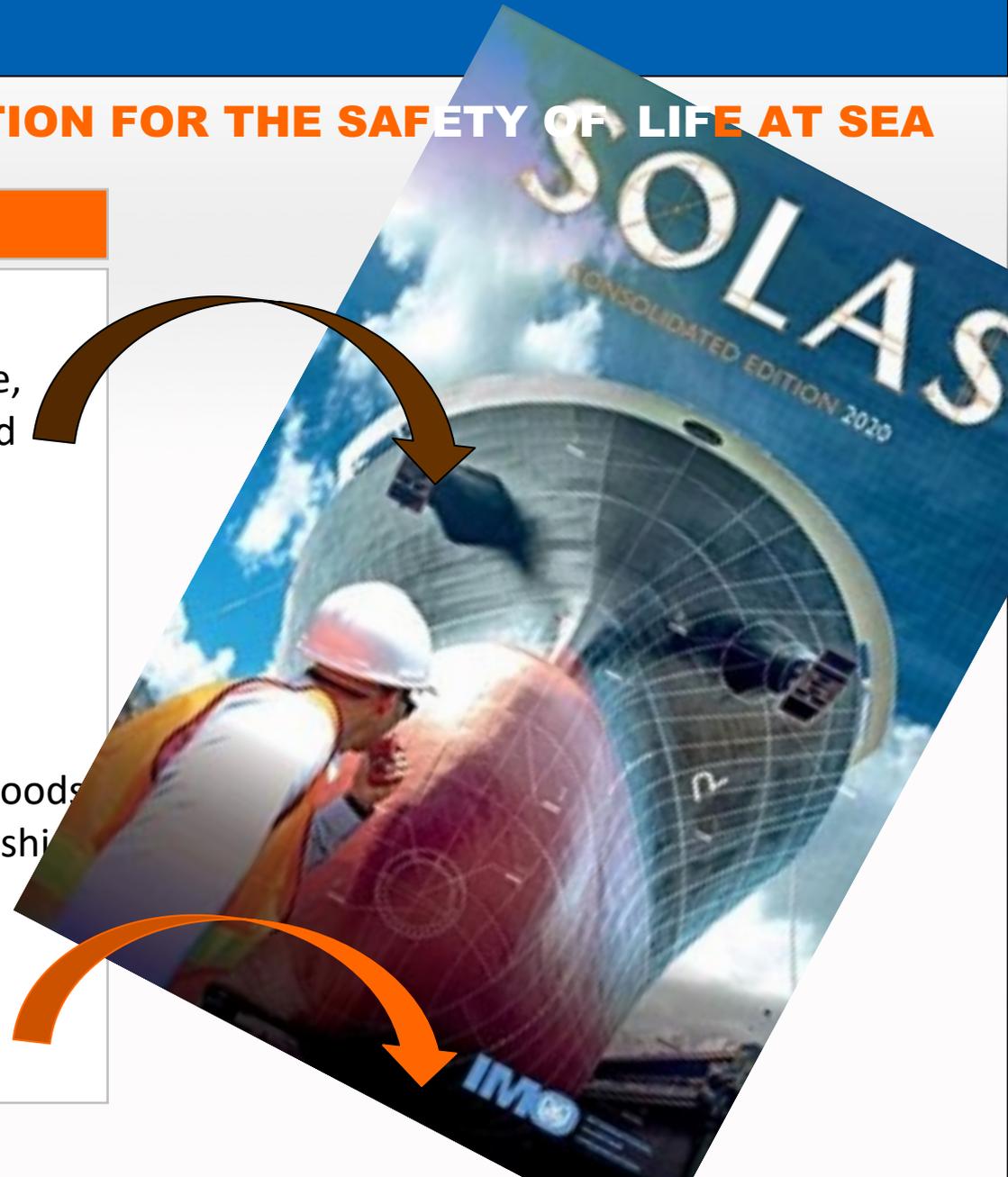
Part G Ships using low-flashpoint fuels

IGF Code

Chapter VII Carriage of dangerous goods

Part C Construction and equipment of ships carrying liquefied gases in bulk

IGC Code



Regulatory Framework....cont

International Code of Safety for Ships using Gases or other Low-Flashpoint Fuels

IGF CODE

Outcome of over 10 years of work by several IMO bodies,

MSC 78 (2004) **Provisions** for gas-fuelled ships.

MSC 86 (2009) **Interim Guidelines** on safety for natural gas-fuelled engine installations in ships (resolution MSC.285(86)),

MSC 87 (2010) **expanded** its work to develop provisions for gas-fuelled ships + ships fuelled by low-flashpoint liquid fuels.

MSC 95 (2016) Adoption of the **IGF Code** including regulations to meet the functional requirements for natural gas fuel.



Regulatory Framework....cont

International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk

IGC CODE

Prescribes the **design and construction** standards of those ships and their equipment in view to minimize the risk to the ship, its crew and the environment.

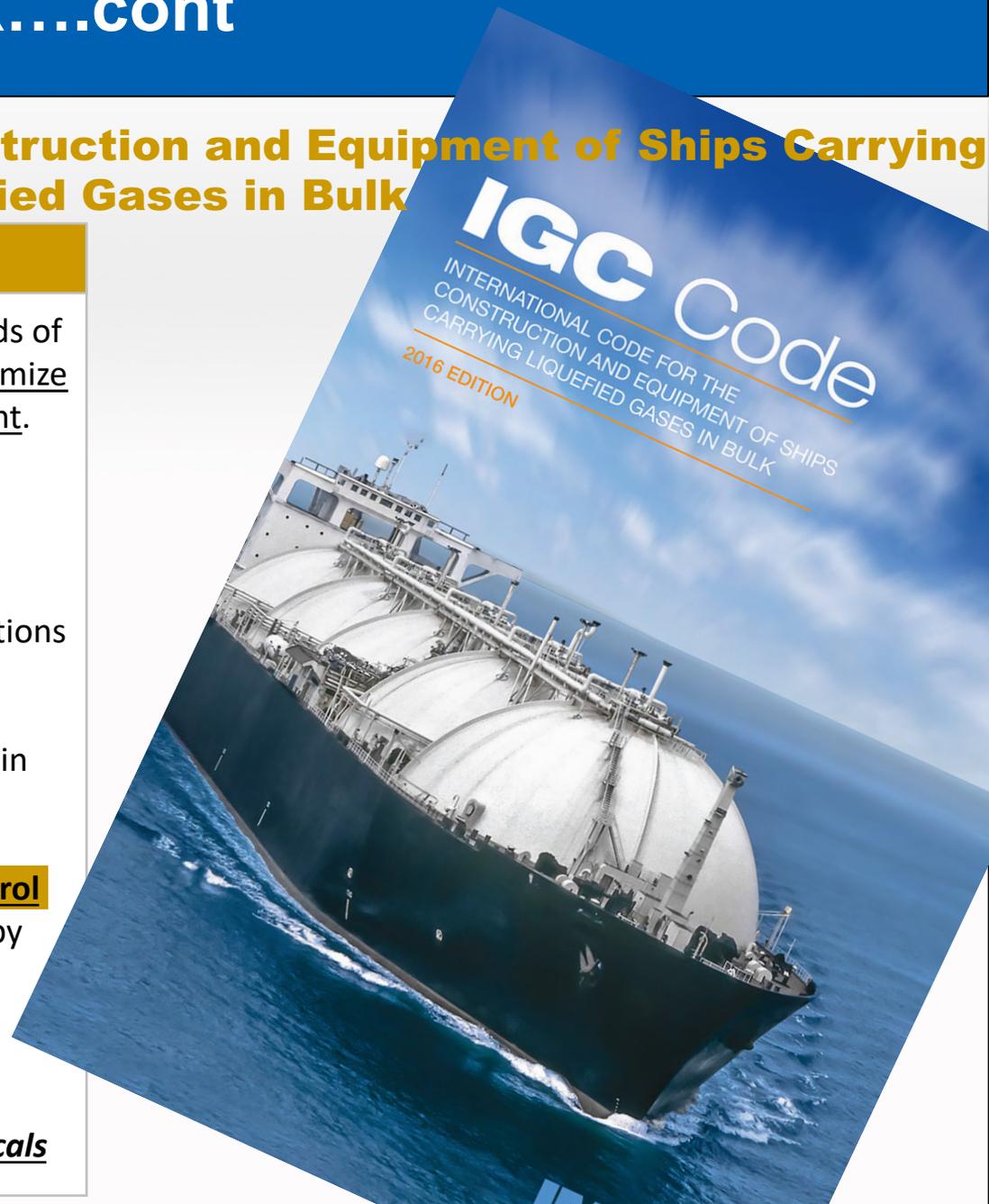
Includes the most **appropriate operational risk mitigation** measures.

Requirements for new products and their conditions of carriage (recommendations)

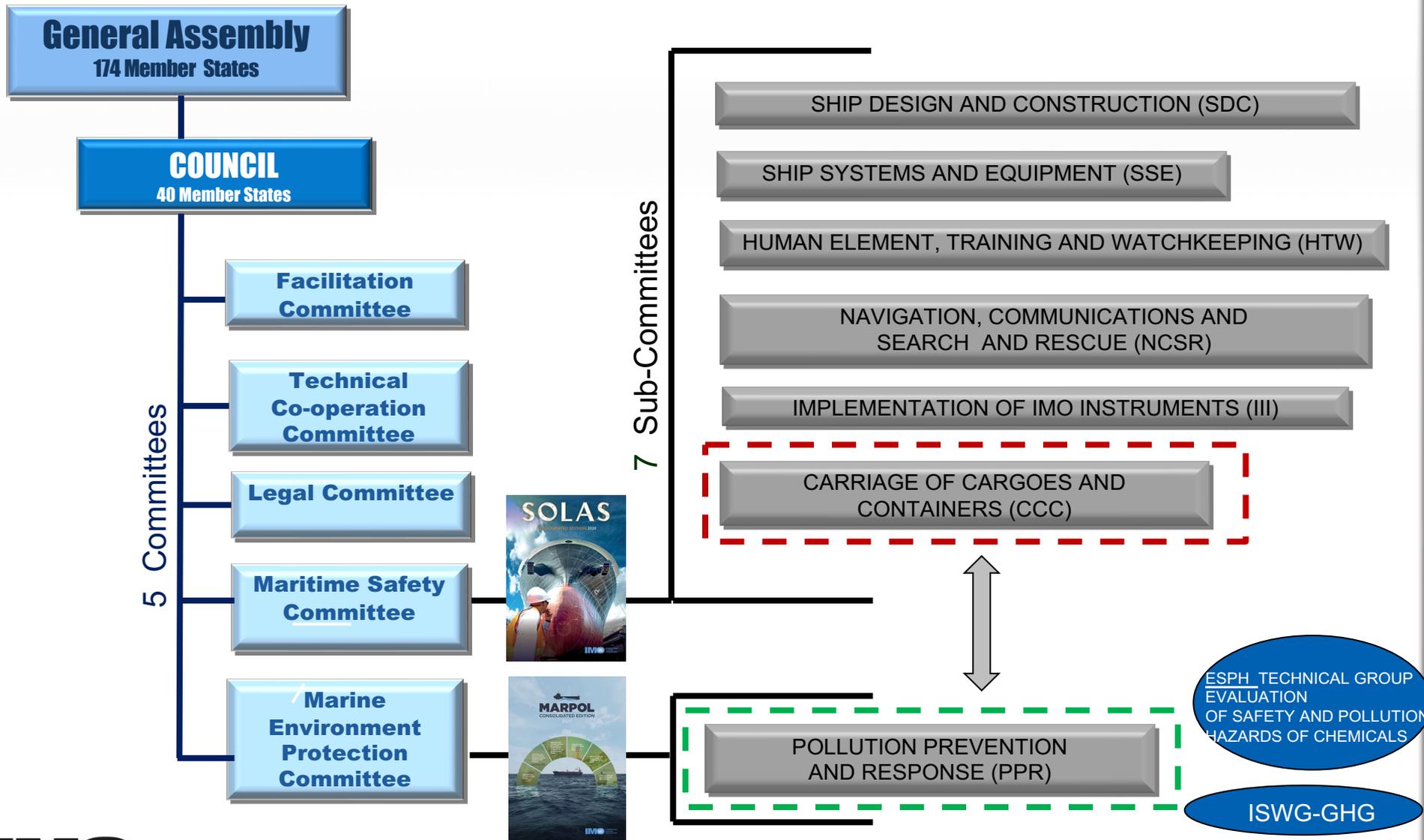
Covers safe carriage of liquefied gases and certain other substances (Listed chapter 19).

Matters such as **training, operation, traffic control and handling in port**, will be examined further by the Organization (CCC 8 September 2022)

The layout of the Code is in line with the *International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)*,



How it works



SUB-COMMITTEE ON CARRIAGE OF CARGOES AND CONTAINERS
8th session
Agenda item 1

CCC 8/1/Rev.1
29 April 2022
Original: ENGLISH
Pre-session public release: ☑

PROVISIONAL AGENDA

for the eighth session of the Sub-Committee, to be held¹ from Wednesday, 14 September to Friday, 23 September 2022²

- 1 Adoption of the agenda
- 2 Decisions of other IMO bodies
- 3 Amendments to the IGF Code and development of guidelines for low-flashpoint fuels (2.3)
- 4 Amendments to the IGC and IGF Codes to include high manganese austenitic steel and related guidance for approving alternative metallic material for cryogenic service (2.22)
- 5 Amendments to the IMSBC Code and supplements (7.13)
- 6 Amendments to the IMDG Code and supplements (7.10)
- 7 Amendments to the International Code for the Safe Carriage of Grain in Bulk (resolution MSC.23 (59)) to introduce a new class of loading conditions for special compartments (7.25)
- 8 Revision of the Revised recommendations for entering enclosed spaces aboard ships (resolution A.1050(27)) (6.15)
- 9 Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas (7.28)
- 10 Review of the IGC Code (1.17)
- 11 Development of measures regarding the detection and mandatory reporting of containers lost at sea that may enhance the positioning, tracking and recovery of such containers (4.4)
- 12 Unified interpretation of provisions of IMO safety, security, and environment-related conventions (7.1)
- 13 Development of guidelines for the safety of ships using ammonia as fuel (2.0)
- 14 Revision of the Interim recommendations for carriage of liquefied hydrogen in bulk (2.0)
- 15 Biennial status report and provisional agenda for CCC 9
- 16 Election of Chair and Vice-Chair for 2023
- 17 Any other business
- 18 Report to the Committees



Existing and future alternative marine fuels

Achieving the 2050 level of ambition –
ensuring the safe and sustainable use of alternative marine fuels

LNG

IGF Code - Mandatory under SOLAS Chapter 1-II

IGC Code - Mandatory under SOLAS Chapter VII

**Methyl / ethyl
alcohol**

MSC.1/Circ.1621 (2019) *Interim guidelines* for the safety of ships using methyl/ethyl alcohol as fuel

Fuel cells

MSC.1/Circ.1647 (2022) *Interim guidelines* for the safety of ships using fuel cell power installations

future

IMO's CCC Sub-Committee is working on provisions in relation to **Hydrogen, Ammonia, LPG** and **Low-flashpoint diesel**.
.....**work on-going**

Theme of the World Maritime Day 2022



Reflects the need to support a green transition of the maritime sector into a sustainable future, while leaving no one behind.

Provides an opportunity to focus on the importance of a **sustainable maritime sector** and the need to build back better and greener in a post pandemic world.

IMO actively supports a greener transition of the shipping sector into a sustainable future, and showcases maritime **innovation, research and development**, and the demonstration and deployment of new technologies.

Thank you



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