

# Recent Topics at IMO

— Outline of Discussion at IMO Committees —

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## 1. INTRODUCTION

This article introduces recent topics discussed at International Maritime Organization (IMO). At the previous issue, a summary of the topics discussed at 80th Marine Environment Protection Committee (MEPC 80) held in July 2023 and 107th Maritime Safety Committee (MSC 107) held in June 2023 was provided.

This article provides a summary of the decisions taken at 81st Marine Environment Protection Committee (MEPC 81) held from 18 to 22 March 2024 and 108th Maritime Safety Committee (MSC 108) held from 15 to 24 May 2024 as below.

## 2. OUTCOMES OF MEPC 81

### 2.1 Greenhouse Gases (GHG)

At MEPC 80 held in July 2023, the 2023 IMO Strategy on Reduction of GHG Emissions from Ships (2023 IMO GHG Strategy) was adopted, reinforcing the levels of ambition for reducing GHG emissions from international shipping. At this session at MEPC 81, measures already in force such as the Data Collection System for fuel oil consumption of ships (IMO DCS), Energy Efficiency Existing Ship Index (EEXI) and Carbon Intensity Indicator (CII) regulations were reviewed along with discussions on mid-term measures and lifecycle assessments of marine fuels with an aim to achieve the reinforced levels of ambition.

#### 2.1.1 Review of Data Collection System for Fuel Oil Consumption of Ships

The IMO DCS, under which operational data such as fuel oil consumption has been collected and reported since 2019, has been under review since 2022 to improve the items to be reported and the granularity of reported data. At MEPC 80, draft amendments to Appendix IX of MARPOL Annex VI were approved for amending/adding the items required to be reported in the IMO DCS.

At this session, the draft amendments approved at MEPC 80 were adopted to introduce the new items to be additionally reported such as total fuel oil consumption per combustion systems and total fuel oil consumption while the ship is not under way. (See Section 2.4.1 below for details.)

In addition, following the discussions on the definitions of the terms and measurements methods for the new items to be reported, the relevant amendments to the “Guidelines for the Development of a Ship Energy Efficiency Management Plan (SEEMP)” and “Guidelines for Administration Verification of Ship Fuel Oil Consumption Data and Operational Carbon Intensity” were adopted, along with the details of “total transport work” calculated based on actual cargo carried during a voyage, etc.

#### 2.1.2 Power Limitations in EEXI Regulations

At this session, to facilitate the compliance with the EEXI regulations which started from 2023, the “Guidelines on the Shaft/Engine Power Limitation System to Comply with the EEXI Requirements and Use of a Power Reserve” were reviewed.

As a result, clarifications were made in the guidelines to allow pre-emptive un-limiting of the Shaft Power Limitation (SHaPoLi) or Engine Power Limitation (EPL) system under certain scenarios which may endanger the safe navigation of the ship, and also new functional requirements were added for SHaPoLi systems, the control of which is independent from the engine automation.

#### 2.1.3 Heavy Load Carriers

The amendments for the Unified Interpretations to MARPOL Annex VI were approved, defining heavy load carriers which are exempted from the application of Energy Efficiency Design Index (EEDI), EEXI and CII regulations.

#### 2.1.4 Mid-Term Measures for Reduction of GHG

As mid-term measures to achieve the GHG reduction targets in international shipping, a basket of candidate measures,

comprised of both a technical element and an economic element, is being developed as set out in the 2023 IMO GHG Strategy. Various measures have been proposed so far, such as: for a technical element, a goal-based marine fuel standard regulating the phased reduction of GHG intensity (GHG Fuel Standard); and for an economic element, posing a levy against GHG emissions (Universal Mandatory GHG Levy) and a combination of posing a fee to ships operating on fossil fuels and rebating revenues to ships operating on zero-emission fuels (feebate), etc.

The work plan in Table 1 has been agreed for developing mid-term measures, aiming for entry into force by 2027:

Table 1 Work plan for developing mid-term measures

Timeline	Work Item
2023-2024	Conduct a comprehensive impact assessment (CIA) to assess potential impacts towards various countries and international shipping posed by combinations of respective basket of measures, and finalize the mid-term measures
2025	Approval and adoption of the mid-term measures
2027	Entry into force of the mid-term measures

At this session, as a result of an exchange of views on the basket candidate of measures, the IMO net-zero framework was agreed, illustrating an outline of amendments to be considered, such as attained GHG fuel intensity and distribution of revenue etc. The IMO Member States and International Organizations were then invited to continue with discussions towards finalizing mid-term measures on the basis of the IMO net-zero framework.

Furthermore, the progress of the CIA was reported by the leading organizations of the tasks such as UNCTAD, where the final reports are to be submitted by MEPC 82. In addition, it was also agreed to organize an expert workshop prior to MEPC 82 to facilitate the understanding of preliminary findings of the CIA.

#### 2.1.5 Operationalization of the Guidelines on Life Cycle GHG Intensity of Marine Fuels

For low/zero-carbon fuels, such as hydrogen, ammonia and biomass-based fuels which are expected to become more widely used in the future to decarbonize ships, it has been recognized that GHG emissions during manufacturing and distribution processes of these fuels should be taken into account. It is also recognized that GHG other than CO<sub>2</sub>, such as methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), may cause significant impact on global warming.

At the previous session, the LCA Guidelines were adopted, which provides a general framework on the calculation method of GHG emission intensity (GHG emitted per unit energy) throughout the lifecycle of the fuel: from feedstock extraction/cultivation to fuel production, distribution and fuel utilization onboard a ship. At the Correspondence Group, which was established at the previous session, discussions were made on the review of the data collection template for establishing default emission factors, examination of proposed default emission factors, leakage of carbon and methane resulting from the LUC (Land-Use Change), credits from use of captured CO<sub>2</sub> as carbon stock to produce synthetic fuels, credits from onboard carbon capture and storage etc.

At this session, on the basis of the draft amendments proposed by the Correspondence Group, the amendments (the detailed evaluation method and quantification of parameters for emissions from biofuel production, GHG emission intensity for electricity used during fuel production, evaluation method for GHG emissions onboard ships, etc.) to the LCA Guidelines were made and adopted as the 2024 LCA Guidelines. Furthermore, as the issues investigated at the Correspondence Group were diverse and required expertise, it was agreed to establish a new Working Group on the Life Cycle GHG Intensity of Marine Fuels under GESAMP to pursue discussions along with its Terms of Reference.

#### 2.1.6 Measurement and Verification of Non-CO<sub>2</sub> GHG and Onboard Carbon Capture Systems

When methane and ammonia are used as fuel oil, there are concerns with methane slips and formation of nitrous oxides causing impact on global warming. Thus, measurement and verification of non-CO<sub>2</sub> (methane, nitrous oxides and other) GHG are being discussed in the context of further development of the LCA Guidelines.

Furthermore, there have been initiatives undertaken to develop onboard carbon capture (OCC) technologies for reducing GHG emissions by segregating and capturing CO<sub>2</sub> from exhaust gases onboard ships.

At this session, it was agreed to establish a Correspondence Group to proceed with discussions on the following topics:

- Regulatory framework for the measurement and verification of non-CO<sub>2</sub> GHG etc.
- Work plan for developing regulatory framework for OCC technologies.

## 2.2 BWM Convention

### 2.2.1 Review of BWM Convention

When BWM Convention entered into force in 2017, it was agreed to monitor the application and to review the effectiveness of the Convention through the experience building phase (EBP), and MEPC at its previous session approved the Convention Review Plan (CRP) which comprises the list of issues that need to be finalized.

The requirements in the current Convention were reviewed by the relevant Correspondence Group, and this session endorsed the list identifying items that need to be amended within the BWM Convention, BWMS Code and relevant guidelines and guidance. The aforementioned list comprises survey aspects such as sampling and analysis of ballast water to confirm the treatment capacity and discharge concentration of active substances during intermediate and renewal surveys, in addition to commissioning tests, to ensure appropriate installation and effective operation etc. In addition, it was further agreed to reestablish the Correspondence Group for pursuing the topics that require further discussions.

### 2.2.2 Ballast Water Management in Ships Operating in Challenging Water Quality

There has been continuing discussions at MEPC regarding ballasting operations at ports with challenging water quality (CWQ), where continuous operation of ballast water treatment systems (BWMS) becomes difficult due to issues such as excessive turbidity of ambient water preventing UV transmittance for sufficient disinfection, too low of salinity for proper operation, or particles in water causing filter to get clogged frequently.

At this session, an Interim Guidance on the Application of the BWM Convention to Ships Operating in Challenging Water Quality Conditions was adopted. The interim guidance provides operational guidance such as determination of CWQ, bypass procedures for ballasting operations at ports with CWQ and decontaminating procedures of ballast tanks after the bypassed ballasting operation. The interim guidance will be kept under review for further improvements.

### 2.2.3 Temporary Storage of Treated Sewage and/or Grey Water

Discharge of treated sewage and grey water has been prohibited in certain ports, which led to discussions for developing guidance for temporary storage of treated sewage and/or grey water to ballast tanks in such ports.

At this session, the Guidance for the Temporary Storage of Treated Sewage and/or Grey Water in Ballast Water Tanks was approved. The guidance sets out the standards such as for flushing tanks after temporary storage, for implementing the relevant procedures in Ballast Water Management Plans (BWMP) and for recording in the Ballast Water Record Book (BWRB).

## 2.3 Air Pollution Prevention

### 2.3.1 Addition of Nitrogen Oxides (NO<sub>x</sub>), Sulphur Oxides (SO<sub>x</sub>) and Particulate Matter (PM) Emission Control Areas

Regulation 13 of MARPOL Annex VI specifies the NO<sub>x</sub> emission standards for marine diesel engines installed on board ships. Regulation 13.6 designates the North American area, the US Caribbean Sea area, the Baltic Sea area and the North Sea area as Emission Control Areas (ECA), in which the NO<sub>x</sub> Tier III emission limit is applied.

Regulation 14 of MARPOL Annex VI sets out control measures to reduce emissions of SO<sub>x</sub> and PM from ships, where the sulphur content in fuel oil used has been generally limited to 0.50% since 2020. Regulation 14.3 designates the North American area, the US Caribbean Sea area, the Baltic Sea area, the North Sea area and the Mediterranean Sea area as ECA, in which the sulphur content in fuel oil used is further limited to 0.10%.

At this session, proposals were submitted to newly designate Canadian Arctic Waters and Norwegian Sea as ECA. As a result, draft amendments to MARPOL Annex VI were approved, adding these areas to ECA.

Assuming the adoption of the draft amendments at MEPC 82, it is expected that the sulphur content in fuel oil used for ships operating in these ECA will be limited to 0.10% at the earliest from March 2027. Furthermore, the NO<sub>x</sub> Tier III emission limit will be applied to ships in Table 2 operating in these ECA.

Table 2 Application of NOx Tier III limitations

Canadian Arctic ECA	<ul style="list-style-type: none"> <li>• Ships the keels of which are laid or that are at a similar stage of construction on or after 1 January 2025</li> </ul>
Norwegian Sea ECA	<ul style="list-style-type: none"> <li>• Ships for which the building contract is placed on or after 1 March 2026</li> <li>• In the absence of a building contract, ships the keels of which are laid or which are at a similar stage of construction on or after 1 September 2026</li> <li>• Ships delivered on or after 1 March 2030</li> </ul>

### 2.3.2 Effectiveness of Measures against NOx Reduction Regulations

While Selective Catalytic Reduction (SCR) or Exhaust Gas Recirculation (EGR) systems are often chosen as solutions for complying with NOx regulations, the effectiveness of such systems are being questioned for cases such as when ships operate under low loads in ECA, where the exhaust gas temperature becomes low or auxiliary control device (ACD) becomes activated and hence the system is prevented from functioning properly. In this regard, it was proposed to examine the way forward to improve the effectiveness of the NOx regulations as well as its application for ships operating in ECA based on the date of keel laid.

At this session, shortcomings of the current NOx regulations such as above were identified, and it was agreed to continue the discussion at MEPC 82.

### 2.3.3 Measures to Enhance the Safety of Ships Relating to the Use of Fuel Oil

Triggered by the control measures to reduce emissions of SOx and PM, further measures to enhance the safety of ships related to the use of fuel oil have been discussed. The 107th session of the Maritime Safety Committee (MSC 107) held in June 2023 approved and further requested MEPC to approve the draft joint MSC-MEPC guidelines for taking fuel oil samples during bunkering based on the existing guidelines (Res. MEPC.182(59)) in order to establish a unified sampling regime under both the SOLAS and MARPOL Conventions.

At this session, the draft joint guidelines were reviewed to align the terminologies between the guidelines and the MARPOL Convention etc., and the amended draft joint guidelines were subsequently approved. The draft revised guidelines were further approved by MSC 108 and published as an MSC-MEPC Circular (see also 3.3.2(6) below).

## 2.4 Amendments to Mandatory Instruments

### 2.4.1 Review of Data Collection System for Fuel Oil Consumption of Ships

The amendments to Appendix IX of MARPOL Annex VI were adopted, including the amendments and additions to the following items required to be reported in the DCS. The amendments will enter into force on 1 August 2025.

1. Total fuel oil consumption per combustion systems (main engines, auxiliary engines/generators and oil-fired boilers);
2. Total fuel oil consumption while the ship is not under way;
3. Laden distance travelled (on a voluntary basis);
4. Transport work;
5. Total amount of on-shore power supplied; and
6. Category of Innovative energy efficiency technologies.

The Parties were further invited to consider early application of the amended data collection provisions from 1 January 2025.

### 2.4.2 Revision of the Requirements of Bunker Delivery Note for Low-Flashpoint Fuels and Gas Fuels

The amendments to MARPOL Annex VI were adopted, which clarify the requirements for onboard storage and minimum information of BDN for low-flashpoint fuels and gas fuels. The amendments will enter into force on 1 August 2025.

### 2.4.3 Ballast Water Record Books in Electronic Record Book Format

The amendments to the Regulations A-1 and B-2 of the BWM Convention were adopted, which include the reference to “the Guidelines for the Use of Electronic Record Books under the BWM Convention” adopted at MEPC 80. The amendments will enter into force on 1 October 2025.

### 3. OUTCOMES OF MSC 108

#### 3.1 Adopted Mandatory Requirements

Mandatory requirements were adopted at MSC 108 as follows:

(1) Amendments to SOLAS regulation II-1/3-4

Amendments to SOLAS regulation II-1/3-4 to require emergency towing arrangements on ships, other than tankers, of not less than 20,000GT were adopted. In addition, guidelines specifying specific requirements for the arrangement are under consideration by the Sub-Committee on Ship Design and Construction (SDC) with a target completion in 2025.

(2) Amendments to IGF Code

Amendments to IGF Code regarding redundancy of pressure relief valves for liquefied gas fuel tanks, etc. were adopted as a part of the task for amendments to the IGF Code and development of guidelines for alternative fuels and related technologies. In addition, the MSC circular to invite a voluntary early implementation of 4.2.2, 8.4.1 through 8.4.3 of the amendments was also released. Note that the following requirements apply also to existing ships;

1. An emergency release system (ERS) or equivalent means shall be provided for bunkering manifold, unless installed on the bunkering supply side of the bunkering line. In cases where connections other than a dry-disconnect/connect coupling are used, a bunkering arrangement risk assessment are required, and the fuel handling manual shall include documentation that special consideration was granted under 8.4.2 of IGF Code;
2. The portable dry powder extinguisher shall be provided in the fuel preparation room not later than the first survey on or after 1 January 2026. (11.6.2); and
3. Regarding the written agreement on bunkering transfer procedures, items such as transfer pressure and temperature are added (18.4.1).

(3) Amendments to International Code for the Safe Carriage of Grain in Bulk (Grain Code) (resolution MSC.23(59))

Amendments to Grain Code, to add new loading condition of specially suitable compartments, partly filled in way of the hatch opening, with ends untrimmed, were adopted.

(4) Amendments to LSA Code

The following amendments to LSA Code and recommendation on testing of life-saving appliances (resolution MSC.81(70)) were adopted;

1. In-water performance requirement for lifejackets;
2. Requirements for single fall and hook systems with on-load release capability which is used for lifeboat launched by a fall or falls, except a free-fall lifeboat; and
3. Requirements for lifeboats to limit the minimum and maximum lowering speed of fully loaded survival craft and rescue boats.

(5) Amendments to SOLAS chapter II-2 and FSS Code

The following amendments to SOLAS chapter II-2 and FSS Code on fire safety of ro-ro passenger ships, etc. were adopted;

1. Fire safety requirements on new/existing ro-ro passenger ships mainly shown as below;
  - Fixed fire detection and fire alarm systems;
  - Video monitoring in ro-ro spaces;
  - Arrangement of openings in ro-ro and special category spaces;
  - Arrangement of weather decks;
  - Water monitors for protection of weather deck;
  - Linear heat detectors; and
  - Visual and audible fire signals
2. Amendments to SOLAS regulation II-2/7.5.5 concerning fire detection within control stations and cargo control rooms of cargo ships.

#### 3.2 Approved Mandatory Requirements

The following mandatory requirements were approved at this session and are expected to be adopted at MSC 109 to be held in December 2024.

## (1) Amendments to IGF Code

Amendments to IGF Code regarding minimum distance from bottom for suction well, etc. were approved as a part of the task for amendments to the IGF Code and development of guidelines for alternative fuels and related technologies.

## (2) Amendments to IGC Code

Amendments to the IGC Code to make cargoes identified as toxic products conditionally usable as fuel, in view of the launch of ammonia-fueled vessels. It was also agreed that this amendment would be effective 18 months after adoption by MSC 109 and to invite a voluntary early implementation at that time.

## 3.3 Approval of Unified Interpretations (UIs), Guidelines and Guidance etc.

The following unified interpretations (UIs), guidelines, guidance and etc. were approved during MSC 108.

## 3.3.1 UIs

- (1) Amendments to unified interpretations of SOLAS chapters II-1 and XII, of the technical provisions for means of access for inspections (resolution MSC.158(78)) and of the performance standards for water level detectors on bulk carriers and single hold cargo ships other than bulk carriers (resolution MSC.188(79)) (MSC.1/Circ.1572/Rev.1)

Amendments to unified interpretation to;

1. clarify the intervals and records for permanent means of access; and
2. amended title and application to meet the revised performance standards for water level detectors on ships subject to SOLAS regulations II-1/25, II-1/25-1 and XII/12 as well as bulk carrier (Resolution MSC. 188 (79)/Rev.2).

- (2) Unified interpretation of SOLAS regulation XV/5.1 and paragraph 3.5 of part 1 of the International Code of Safety for Ships Carrying Industrial Personnel (IP Code) on the harmonization of the Industrial Personnel Safety Certificate with SOLAS safety certificates

Unified interpretation of SOLAS regulation XV/5.1 and paragraph 3.5 of part 1 of the IP Code to harmonize the Industrial Personnel Safety Certificate with various SOLAS safety certificates, in terms of their validity or date of endorsement.

- (3) Unified interpretation of Code on noise levels on board ships

Unified interpretation of section 2.1 and 2.2 of the Code to clarify requirements for the calibration of the sound level meter and its field calibrator.

- (4) Amendments to unified interpretations of SOLAS regulations II-2/9 and II-2/13 (MSC.1/Circ.1511)

Amendments to unified interpretations of SOLAS regulations II-2/9 and II-2/13 (MSC.1/Circ.1511) to include steering gear spaces as “safe position” for the purpose of escape from the lower part of machinery spaces through a continuous fire shelter.

## 3.3.2 Guidelines and Guidance etc.

- (1) Amendments to revised guidelines on the application of high manganese austenitic steel for cryogenic service (MSC.1/Circ.1599/Rev.2)

Amendments to revised guidelines on the application of high manganese austenitic steel for cryogenic service (MSC.1/Circ.1599/Rev.2) to qualify high manganese austenitic steel for ammonia service and to add compatibility test requirements for ammonia service.

- (2) Amendments to revised guidelines for the acceptance of alternative metallic materials for cryogenic service in ships carrying liquefied gases in bulk and ships using gases or other low-flashpoint fuels (MSC.1/Circ.1622)

Amendments to revised guidelines for the acceptance of alternative metallic materials for cryogenic service in ships carrying liquefied gases in bulk and ships using gases or other low-flashpoint fuels (MSC.1/Circ.1622) to add compatibility test requirements for ammonia service.

- (3) Interim guidelines for use of LPG cargo as fuel

Interim guidelines for use of LPG cargo as fuel, as a part of the task for amendments to the IGF Code and development of guidelines for alternative fuels and related technologies.

- (4) Revised interim recommendations for carriage of liquefied hydrogen in bulk (resolution MSC.420(97))

Revised interim recommendations for carriage of liquefied hydrogen in bulk, including the addition of cargo containment systems of independent cargo tanks using insulation materials and hydrogen gas in the inner insulation spaces.

- (5) Amendments to revised guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (MSC.1/Circ.1212/Rev.1)

Amendments to revised guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (MSC.1/Circ.1212/Rev.1) to add the goals, functional requirements and expected performance criteria for alternative design and arrangements for SOLAS chapter II-1, Part C, D and E.

(6) Guidelines for the sampling of fuel oil for determination of compliance with MARPOL Annex VI and SOLAS Chapter II-2

Guidelines for taking fuel oil samples during bunkering in order to establish a unified sampling regime under both the SOLAS and MARPOL Conventions.

### 3.4 Consideration of Requirements for Maritime Autonomous Surface Ships (MASS)

In the recent development of MASS, it has been discussed at MSC on an international instrument of MASS (MASS Code).

At this session, based on the report by the correspondence group and the meeting outcome arranged by the related working group, non-mandatory MASS Code mainly on goal and functional requirements for items such as safety, operation, security, etc. has been considered. As a result, it was agreed to establish a correspondence group, and hold an intersessional working group meeting in September 2024 to proceed the work on development of the non-mandatory MASS Code. As a future work plan, it was agreed to finalize and adopt the non-mandatory MASS Code at MSC 110 scheduled to be held in June 2025, thereafter, to proceed the development of a mandatory MASS Code with a view to adoption by 2030 (entry into force on 1 January 2032).

### 3.5 A Safety Regulatory Framework to Support the Reduction of GHG Emissions from Ships Using New Technologies and Alternative Fuels

At the previous session, identification and updating a list of new technologies and alternative fuels to reduce greenhouse gas (GHG) emissions and their technical assessment, as well as a review of safety obstacles and gaps in the current IMO instruments that may impede the use of the alternative fuel or new technology, were initiated.

At this session, based on the report by the correspondence group, the work to update the list of new technologies and alternative fuels was progressed by the related working group, and it was decided that a correspondence group would continue to be established and work would proceed.

### 3.6 Cyber Risk Management

In view of the growing importance of cyber security on board ships and the need for security risk countermeasures, the non-mandatory resolution MSC.428(98) on cyber risk management in the Safety Management System (SMS) has been developed. Additionally, the Guidelines on Maritime Cyber Risk Management (MSC-FAL.1/Circ.3/Rev.2) have been developed.

At the previous session, it was agreed to carry out a review of the Guidelines in light of the increased use of cyber-connected systems in recent years.

At this session, a draft amendment to the Guidelines were approved that adds more maritime-specific functional requirements to be considered from organization, people, process and technological aspects based on the widely-recognized international and industry standards. The draft amendment to the guidelines will be approved by subsequent Facilitation Committee (FAL) and published as an MSC-FAL Circular.