



IMO News Final

MEPC 79



The 79th session of Marine Environment Protection Committee (hereinafter referred to as MEPC) was convened as a hybrid meeting from 12th to 16th December 2022 to discuss a wide range of issues under the purview of the Committee. This news final briefs on the outcomes of MEPC 79 on major technical issues.

1. Adoption of amendments to mandatory IMO instruments (Agenda 3)

1.1 Amendments to MARPOL Annex I, II and IV for port reception facilities in the Arctic region

MEPC 79 adopted Res.MEPC.359(79) containing draft amendments to MARPOL Annex I, II and IV for port reception facilities in the Arctic region and Res.MEPC.363(79) containing consequential amendments to the *2012 Guidelines for the development of a regional reception facility plan* (Res.MEPC.221(63)). These amendments were based on that regional arrangements only between ports within Arctic waters may not be practical due to the various environmental, geographical and infrastructure limitations relevant to the region, and thus, more feasible solutions for Regional Ships Waste Reception Centers (RSWRC) could be in the form of larger more industrialized ports in the surrounding coastlines which would cause ships to take a different route purely for accessing port reception facilities. These amendments will enter into force on 1 May 2024.

1.2 Amendments to MARPOL Annex V concerning regional reception facilities within Arctic waters and Garbage Record Book

MEPC 79 adopted Res.MEPC.360(79) containing draft amendments to MARPOL Annex V for port reception facilities in the Arctic region. These amendments also include the relevant amendments making Garbage Record Book mandatory for ships of 100 GT and above, so as to further reduce shipping's contribution to marine plastic litter and ensure the enhanced implementation of garbage management. These amendments will enter into force on 1 May 2024.

1.3 Amendments to MARPOL Annex VI concerning Mediterranean Sea Emission Control Area for Sulphur Oxides and Particulate Matter

MEPC 79 adopted Res.MEPC.361(79) containing draft amendments to MARPOL Annex VI designating Mediterranean Sea as an Emission Control Area for Sulphur Oxides. The effective date of Emission Control Area will be on 1 May 2025, taking into account 1 year grace period for Emission Control Area in accordance with regulation 14.7 of MARPOL Annex VI.

1.4 Amendments to MARPOL Annex VI concerning regional reception facilities within Arctic water, information to be included in the bunker delivery note (BDN) and information to be submitted to the IMO Ship Fuel Oil Consumption Database

MEPC 79 adopted Res.MEPC.362(79) containing draft amendments for port reception facilities in the Arctic region, Appendix V to add the flashpoint or a statement that flashpoint has been measured at or above 70°C to be reported in BDN and Appendix IX to add relevant information to be submitted to the IMO DCS Database in relation to the short-term measures for reducing carbon intensity from international shipping such as attained EEXI, attained CII before/after any correction and CII ratings.

Implication Analysis

- With respect to the designation of Emission Control Area for Mediterranean Sea area as referred in paragraph 1.3 above, **Ship owners and operators** are invited to **ensure** that their fleet obtains appropriate **compliant fuel oils not exceeding 0.10% m/m** and a **procedure showing how the fuel oil change-over is to be done** in case where the ships is operated in these areas as of 1 May 2025.
- Additional designation of Emission Control Area does not affect to the ships equipped with EGCS, while the **ship owners and operators** are strongly encouraged to make every effort to properly maintain the system.
- **Administrations** are invited to **note** their rights and obligations arising from the amendments; and **consider** establishing their own national legislation to properly implement them, including necessary actions against confirmed non-compliant cases.

2. Ballast Water Management Convention (Agenda 4)

2.1 2 Final Approvals were granted

- RADClean[®] BWMS (Islamic Republic of IRAN)
- ECS-HYCHLOR[™] 2.0 system (United Kingdom)

2.2 1 Basic Approval was not granted

- Air Tree BWMS ABWOT system (Germany)

2.3 Type approved BWMSs reported to MEPC 79 (total 6 units)

- Senza BWMS(Norway), LanhBW BWMS(Finland), CHIT's BLUE OCEAN SHIELD BWMS(Norway), HiBallast NF[™]BWMS(Republic of Korea), AQUASTAR[™]BWMS(Republic of Korea) and ARA Plus⁺BWMS(Republic of Korea), they were type approved in accordance with BWMS Code adopted by resolution MEPC.300(72).

2.4 Guidance for the application of the BWM Convention to ships operating at ports with challenging water quality

It has been discussed that the ships may intake ballast water bypassing the BWMS when entering into a port area with high level of turbidity/total suspended solids (TSS) and then moving to an area where the BWMS can be operated to exchange ballast water using water treated by BWMS.

In particular, MEPC 78 generally supported for the BWE+BWT approach, while couldn't reach a consensus as there were divergent views with as to challenging water quality conditions such as BWMS not able to operate due to challenging water quality, aspects of BWE+BWT such as port States determines where ballast water exchange could take place and whether operation in PCWQ and BWE+BWT can be considered as a contingency measure or are part of anticipated operation which should be approved in the BWMP.

MEPC 79 continued its discussion and further considered proposals containing draft amendments to BWM.2/Circ.62(Guidance on Contingency Measures under the BWM Convention) and a new draft guidance document on management of ballast water with challenged water quality, with following points at issue:

- .1 Whether a substantial update to the existing guidance BWM.2/Circ.62 should be made or a separate new guidance should be further developed, to address the challenged water quality;
- .2 Tank flushing to make normal operating condition of BWMS after bypass due to challenged water quality; and
- .3 The locations and areas in which unmanaged ballast water can be discharged during BWE+BWT operation.

After consideration, MEPC 79 noted a list of elements to be taken into consideration when developing future guidance for ships encountering challenging water uptake. The main elements include that, BWMS bypass should only be as a last resort, communication with the coastal and/or port State receiving the challenging uptake water is crucial, and discharges following uptake in challenging water quality are expected to meet the D-2 standard at the next and subsequent ports of call, etc. MEPC 79 agreed to continue its discussions for developing the guidance at MEPC 80.

2.5 Temporary storage of treated sewage and grey water in the ballast water tanks under BWM Convention

Given that many ships in service have a need to store treated sewage or grey water in a ballast water tank due to port State requirements, MEPC 78 considered a proposal asking clarifications as to whether temporary storage of treated sewage or grey water in a ballast water tank is permitted or not, if permitted, as to whether it is to be a guidance as an MEPC Circular or amendments to MARPOL Annex IV and BWM Convention to reflect this permission. But, due to the time constraints, the Committee couldn't confirm whether the temporary storage of treated sewage and grey water in the ballast water tanks can be allowed or not.

MEPC 79 continued its discussion and further considered proposals containing a draft guidance to provide uniform procedure, covering the technical and operational aspects of the temporary storage of grey water and treated sewage in the ballast water tanks as well as draft amendments to BWM Convention to provide a legal clarity for the use of dual purposes ballast water tank.

After consideration, MEPC 79 agreed the need for guidance on temporary storage of treated sewage and grey water in ballast tanks as this practice was not prohibited by the BWM Convention nor by MARPOL Annex IV, and this practice was already taking place.

Due to time constraints, MEPC 79 could not consider the development of the guidance for the temporary storage of grey water or treated sewage in ballast tanks and agreed to continue its discussions at MEPC 80.

2.6 Unified Interpretations of the BWM Convention

MEPC 79 approved BWM.2/Circ.66/Rev.4 providing unified interpretations of the BWM Convention as follows:

- .1 Paragraph 4.10 of the BWMS Code: The accuracy check/calibration of BWMS components that take measurements should be performed in accordance with the calibration procedure at intervals specified in the manufacturer's instructions. This UI was based on a contradictory survey requirement for BWMS in paragraph 4.10 of BWMS Code requiring measurements system for BWMS to be calibrated at each renewal survey and HSSC survey checklist item (BA) 1.2.1.21 requiring a calibration check to be performed in accordance with the approved OMSM (Onboard Maintenance and Safety Manual).

.2 Regulations E-1.1.1 and 1.1.5 of the BWM Convention: In case an installed BWMS on board a ship undergoes a major modification or upgrade which involves a new or revised type approval of that BWMS, a commissioning test should be conducted in accordance with regulation E-1.1.5 of the BWM Convention. This UI was based on whether a commissioning test is needed when a BWMS installed onboard an existing ship has undergone a major conversion or an upgrade in order to improve the ability of compliance with the D-2 standard.

2.7 Revision to the form of BWRB (Ballast Water Record Book), a guidance for the recording of operations in the BWRB and new guidelines to facilitate an electronic record system for ballast water management

MEPC 78 noted that, among the key elements in the analysis report of EBP (Experience Building Phase), the most frequent deficiencies were related to the recording of BWRB (greater than 70%). In addition, it was recognized that the current form of the BWRB did not provide sufficient clarity to meet the recording requirements of Appendix II of the BWM Convention.

MEPC 79 considered the proposed amendments to the current form of the BWRB and a new guidance for recording BWRB, with following outstanding issues:

- .1 BWRB Part I (similar to the Oil Record Book);
- .2 BWRB Part II (Ballast Water Log, shipboard operational procedures on a tank to tank basis);
- .3 Guidance for the recording of operations in the BWRB(similar to recording guidance of Oil Record Book), which was intended to provide advice to crews on how to record the various operations in the BWRB by using correct code and item number; and
- .4 New guidelines for the use of electronic record books under the BWM Convention and consequential amendments to the BWM Convention.

After consideration, MEPC 79 approved draft amendment to Appendix II of the BWM Convention to update the existing format of the BWRB including additional information on entries to be included in the BWRB. The amended format of BWRB introduce Codes similar to the Oil Record Book and aims to improve the recording of issues regarding BWMS installed onboard. MEPC 79 agreed that the proposed part II of the BWRB to facilitate record keeping and reporting under the BWM Convention should not be mandatory and, as such, should not form part of the BWRB accordingly. It was agreed that BWRB recording guidance and electronic record books under the BWM Convention will be further considered with more concrete proposals at MEPC 80.

2.8 Application of the BWM Convention to specific ship types

MEPC 79 considered a proposal seeking possible amendments to the BWM Convention extending regulation A-5 (equivalent compliance) of the BWM Convention and the Guidelines for ballast water management equivalent compliance (G3) to multipurpose salvage ships, due to the ambiguity as to whether salvage ships more than 50 meters in length fall under regulation A-5, the lack of space for retrofitting a BWMS onboard and no ballasting and cargo handling during normal operation.

After consideration, this proposal was not agreed as current BWM Convention already provided sufficient options for addressing the issues raised in this proposal.

Implication Analysis

- Regarding the guidance for the application of the BWM Convention to ships operating at ports with challenging water quality referred in paragraph 1.4 above, given that there may be some countries or port authorities accepting **BWE + BWT as their national legislation and/or port regulations** despite no decisions taken from MEPC yet, interested parties are invited to consult with the port authorities to ensure that smooth implementation of the Convention in case of the event. For more detailed instruction, please refer to previous Technical Information (2019-IMO-06, para.6).
- Regarding the temporary storage of treated sewage and grey water in the ballast water tanks referred in paragraph 1.5 above, given that the Committee agreed **the temporary storage of treated sewage and grey water in the ballast water tanks can be allowed** despite no guidance approved by MEPC yet, it is invited to keep the current practices unless expressly provided otherwise by the Administrations and watching the discussion progress in the future on this matter.
- Regarding the revision to the form of ballast water record book referred in paragraph 1.6 above, given that the Committee will also consider **a draft guidance for recording of ballast water record book**, it is invited to keep the current practices on the record book and watching the discussion progress in the future on this matter.

3. 대기오염 및 선박에너지 효율규정 (의제 5 및 6)

3.1 The implementation of the Global 0.5% sulphur limit, including matters relating to exhaust gas cleaning system (EGCS)

MEPC 79 considered following issues:

- .1 Given the information that 25.38% of the residual fuel oils by quantity exceeding 0.50% sulphur content and high level of non-compliance in some geographical regions, implementation and enforcement of a licensing scheme for bunker suppliers operating within their jurisdiction was proposed;
- .2 Considerations and recommendations required to arrive at representative EGCS discharge emission factors, and development methodology first before agreeing emission factors were proposed;
- .3 UNCLOS refers that a state may impose environment requirements on international shipping when a ship is operating in a state's internal or territorial sea area. But, MEPC.1/Circ.899 refers the area to be regulated such as marine(open water), coastal and other territorial waters which may include EEZ(Exclusive Economic Zone) or the High Sea. Thus, in order to align the definitions of water areas in the UNCLOS and MEPC.1/Circ.899, draft amendments to MARPOL Annex VI were proposed; and
- .4 Inconsistencies between UNCLOS and draft amendments to MARPOL Annex VI in relation to the discharge of discharge water from EGCS were raised.

After consideration, MEPC 79 instructed PPR Sub-Committee to further consider the matter on EGCS discharge water emission factors with a view to advising the Committee and invited the Secretariat to consider providing a legal advice on the issue or inconsistency between MARPOL and UNCLOS to a future session.

3.2 Matters relating to biofuels and biofuel blends

MEPC 79 considered following issues:

- .1 Proposal for uniform NO_x assessment for existing ships running engines on biofuel blends, as per the simplified measurements method in the NO_x Code, noting that onboard simplified measurement method or direct method in accordance with NO_x Technical Code 2008 should be conducted when using fuel oil blending of more than 30% by volume of biofuel;
- .2 Amendments to the Unified Interpretation to MARPOL Annex VI for the use of synthetic drop-in fuels;
- .3 Further consideration of the remaining issues on biofuel blends, i.e. consequential amendments to MARPOL Annex VI and NO_x Technical Code 2008 so as to add the legal clarity on the sustainable use of biofuel blends and to ensure a more straightforward application of these regulations.

After consideration, MEPC 79 approved MEPC.1/Circ.795/Rev.7 containing the revised Unified Interpretation to MARPOL Annex VI, which stipulating that a marine diesel engine certified for NO_x requirements which can use a fuel oil blending of less than 30% by volume of biofuel and synthetic fuels should be permitted to use such a fuel oil without onboard NO_x verification.

With respect to the development of a standard test method for NO_x compliance and the need for a longer-term approach through the amendments to MARPOL Annex VI and NO_x Technical Code 2008 when using biofuels, MEPC 79 agreed to retain existing approach in accordance with the current Unified Interpretation on the use of biofuel approved by MEPC 78, given that simplified measurement method was not extensively used by the industry due to its complexity and burdens on ships.

3.3 Matters relating to Black Carbon

MEPC 79 considered proposed amendments to MARPOL Annex VI requiring ships operating in or near to the Arctic to only use marine distillate fuel or other cleaner alternative fuels to reduce black carbon emission in the Arctic, given that the current IMO's Arctic HFO ban is not a substitute for a black carbon control.

After consideration, MEPC 79 instructed PPR Sub-Committee to further consider the proposed amendments with a view advising the Committee.

3.4 Amendments to 2014 Guidelines on survey and certification of the EEDI

MEPC 79 adopted Res.MEPC.365(79) containing the amendments to 2014 Guidelines on survey and certification of the EEDI to update the guidelines to reflect the International Towing Tank Conference (ITTC) Recommended Procedures 2021. The major updates of the recommended procedure were the introduction of the SNNM method which allows estimation of the resistance increase due to waves in all directions of waves without the knowledge of the ship lines and the withdrawal of the shallow water correction according to "Lackenby".

3.5 Amendments to the 2018 Guidelines on the method of calculation of the EEDI for new ships

MEPC 79 adopted Res.MEPC.364(79) containing the following amendments to the Guidelines:

- .1 Paragraph 2.2.5.2 of the Guideline stipulates that in case where shaft generator is installed, $P_{PTO(i)}$ is 75% of the rated electrical output power of each shaft generator and the maximum allowable $P_{PTO(i)}$ deduction

is to be no more than $P_{AE}/0.75$. But, the relevant equation does reflect this understanding clearly. Thus, this amendment was agreed to clarify that the intent of the paragraph 2.2.5.2 is to limit the $P_{PTO(i)}$ deduction to no more than $P_{AE}/0.75$.

.2 Fuel parameters for Ethane containing default values for 'Lower Calorific Value', 'Carbon Content' and a conversion factor (C_f) between fuel consumption and CO_2 emission in the list of fuels were included.

.3 A clarification that in case of a ship with multiple load line certificates, the maximum certified summer draft should be used when determining the deadweight in calculating attained EEDI was included. It is to bring both the EEDI and EEXI frameworks into alignment with the approach adopted within the Carbon Intensity Indicator (CII) rating mechanism with respect to how multiple load lines are treated.

.4 MEPC 79 noted the general support on the proposed amendments to the Guidelines to apply shaft power limitation (Shapoli) concept to the EEDI framework, with the understanding that overridable power limitation could be a practical way forward for EEDI compliance. After considerations as to whether to use a P_{me} based on 83% or 75% of MCR, and the need for the consequential amendment to the NOx Technical Code 2008 as to whether the NOx certifications should be carried out with unlimited engine power or not, MEPC 79 agreed to continue its discussion at a future session.

3.6 Introduction of EEDI Phase 4

MEPC 79 considered the final report of the Correspondence Group on the possible introduction of EEDI Phase 4 with following outstanding points at issue:

- .1 Whether and how Lifecycle Assessment (LCA) of alternative fuels should be addressed in the EEDI;
- .2 Whether the EEDI Phase 4 should cover other GHG emissions than CO_2 ;
- .3 Other main components of possible EEDI Phase 4 other than those related to decision on .1 and .2 (i.e. implementation date, reduction rates and reference lines);
- .4 Other technical issues to be incorporated into the EEDI (categorized into specific issues to EEDI Phase 4 and issue can be reflected in the current EEDI framework through the usual update process);
- .5 Whether the role of the EEDI as a regulatory tool should be kept for the time being and requirements for the CO_2 emission performance of new ships should be maintained in order to reduce the carbon intensity of international shipping;
- .6 Whether to voluntarily include an energy efficiency indicator into the information described in an EEDI Technical File as well as the CO_2 emission performance indicator; and
- .7 Whether to include the CO_2 reduction effect of onboard CO_2 capturing devices in the EEDI calculation.

After consideration, MEPC 79 could not reach a consensus and invited further proposals to a future session. In particular, MEPC 79 noted the views that the discussion on the possible introduction of further EEDI phases should be kept in abeyance until the completion of the work on the LCA Guidelines, and it should be considered in a holistic matter following the revision of the Initial IMO Strategy on reduction of GHG emission from ships.

3.7 Unified interpretation to MARPOL Annex VI

MEPC 79 approved MEPC.1/Circ.795/Rev.7 containing the following outstanding issues:

- .1 With respect to the BOG (Boil-off gas) consumed onboard ships, the gas sent to the Gas Combustion Unit (GCU) is to be reported as fuel consumed in the IMO DCS Database;
- .2 In early 2023, the attained annual operational CII and its ratings will not be indicated in the revised Statement of Compliance (Appendix X of MARPOL Annex VI) until 2024 when the values are available;
- .3 If a new ship delivered in October or later, the following year will then be the first year of the three-year implementation plan and an inferior rating for the remainder of the calendar year of delivery needs not to be counted in for the determination of whether the ship should develop a Corrective Action Plan;
- .4 In case where a ship changing company, or changing from one Administration to another and from one company to another concurrently after 1 January 2023, the year of change should be the first year of the next three-year implementation plan;
- .5 In order to document how the required annual operational CII will be achieved during the next three years, the SEEMP Part III should be a rolling three-year plan, YYYY (first year of implementation plan), YYYY+1 and YYYY+2;
- .6 In case an inferior rating is given for data collected in calendar year YYYY, the revised SEEMP including the plan of corrective actions, should be verified in year YYYY+1, and it should be developed to achieve the required annual operational CII for data collected in the calendar year YYYY+2; and
- .7 Regarding the reporting of attained and required EEDI data in accordance with regulation 22.3, new data shall be submitted within seven months after the completion date of the initial survey or within seven months of 1 April 2022 for ships delivered before April 2022. This UI also clarifies the timing of data reporting depending on whether a major conversion has been made or not.

Implication Analysis

- Regarding the draft amendments to MARPOL Annex VI in relation to the discharge of EGCS wash water referred in paragraph 3.1 above, while this matter is the discussion for providing **a legal basis to regulate discharge of EGCS wash water in their territorial waters in accordance with MEPC.1/Circ.899**, it is not yet confirmed as to whether each port area currently regulating the discharge of wash water from EGCS eases their regulation or not. Thus, subject to the compliance with each port regulation, **ship owners and operators** are invited to particularly note the environmental risk assessment for the EGCS discharge water to be conducted by the port Authorities and its consequential revision or withdrawal of their regulations in the future.
- Regarding the **Bio/Synthetic fuel blends** referred in paragraph 3.2 above, for the use of fuel oil blending of less than 30% by volume of bio/synthetic fuels, it should be noted that onboard engines certified in accordance with the requirements of regulation 13 of MARPOL Annex VI should have no changes to its NOx critical components or settings/operating values outside those as given by that engine's approved Technical File, and those fuel oils should be certified with the **bunker delivery note** along with the detailed information to identify whether, and to what extent, a bio/synthetic fuel is blended into the product as

supplied. In case where a BND for bio/synthetic fuel blends is not provided, it is noted that those fuel blends may be used under the consultation with the Administrations in accordance with regulation 3.2 'Trials for Ship Emission Reduction and Control Technology Research' or regulation 4 'Equivalent' on a case by case basis.

- Regarding the amendments to 2018 Guidelines amendments to the 2018 Guidelines on the method of calculation of the EEDI for new ships referred in paragraph 3.5.4 above, considering that this matter is **the discussion to apply the methods to calculate EEXI for the ships applied with EPL or Shapoli to the EEDI calculation methods for new ships, ship builders and designers** are invited to particularly keep watching the discussion progress in the future in terms of the application of EEDI reduction phases for 3 ship types such as Bulk carrier, Tankers and Combination carrier to which the minimum propulsion power requirement applies.
- Regarding the EEDI Phase 4 referred in paragraph 3.6 above, although MEPC 79 did not agree to discuss about possible introduction of EEDI phase 4 but considering that the current EEDI framework regulating CO₂ emissions per tonne-mile could be extended to further regulate **non-CO₂ GHG substances** such as methane and nitrous oxide or **Well-to-wake emissions** based on Lifecycle Assessment of marine fuels so as to follow up the initial IMO GHG strategy, **ship builders and designers** are invited to particularly keep watching the discussion progress in the future in terms of the change of current EEDI regulatory framework.

4. Reduction of GHG emissions from ships (Agenda 7)

4.1 Outcome of 13th meeting of the Intersessional Working Group on Reduction of GHG Emissions from Ships (ISWG-GHG 13)

ISWG-GHG 13 was held from 5~9 December 2022 to continue the discussion of the following outstanding issues regarding further reduction of GHG from international shipping.

Finalization of the lesson-learned exercise of the comprehensive impact assessment of the short-term measure, and of the review of the Procedure for assessing impacts on States of candidate measures (MEPC.1/Circ.885)

The lesson-learned exercise is scheduled to be completed at MEPC 79 and future impact assessments for the adoption of mid- and long-term measures as of 2023 should complement the procedures in terms of the sequence, period and definition for task performance. ISWG-GHG 13 considered a proposal to improve the comprehensive impact assessment of IMO GHG reduction measures with sufficient period to conduct the assessment for qualitative tasks followed by quantitative tasks, over a roughly 6-month period (equal time set for each task).

After consideration, MEPC 79 approved MEPC.1/Circ.885/Rev.1 containing a revised procedure for assessing impacts on States of candidate measures for GHG reduction in shipping. The revised procedure explicitly requires that the impacts on States should be assessed before adoption of the measures, and also to detail the responsibilities of the IMO Secretariat to facilitate the comprehensive impact assessment.

Concrete proposal on the revision of the Initial Strategy, and initiation of the development of the Revised Strategy

ISWG-GHG 13 considered a number of proposals on the revision of the Initial Strategy as follows:

- .1 Intermediate target for 2040 (50% reduction in CO₂ emission from 2008);

- .2 Intermediate target of reducing CO₂ emissions to 40% by 2040;
- .3 Ambitious checkpoints for declining GHG emission by 2030 and 2040 and additional checkpoint if necessary;
- .4 Additional interim level of ambition for 2030 in terms of the percentage (5%) of energy used by international shipping derived from alternative fuels;
- .5 GHG lifecycle emissions from international shipping to phase out to zero emissions by 2050 at the latest that is consistent with Paris Agreement temperature goal;
- .6 Specific percentage of the global fleet operating on fuels and technologies with zero or near-zero emissions to increase by 2030 and 2040 (5% of the global fleet with zero or near-zero fuels/technologies by 2030 and 50% of the global fleet by 2040);
- .7 Complete emissions reduction no later than 2050, with more than 80% reduction by 2040, calculated on a Well-to-Wake basis;
- .8 Levels of ambition including an ambition for IMO Green Corridor¹ Programme;
- .9 Incentives for the ships with uptake of zero-GHG fuels;
- .10 The efficient production of zero-emission fuels and establishment of global port infrastructure to support ships operating on zero-emission fuels;
- .11 Equitable transition, capacity-building, technical cooperation and R&D for supporting SIDS and LDCs; and
- .12 In terms of the definition for zero-emission, the understanding ‘net-zero’, ‘near-zero’, ‘absolute zero’ and ‘zero’.

During discussion, there were significant divergent views between member States on the vision and levels of ambitions in the GHG reduction strategy, such as full decarbonization by 2050, further assessment on feasibility to achieve a revised ambition, potential impacts on State before adoption of revised strategy and the necessity of intermediate GHG reduction targets being set for 2030 and 2040. Although any decision on this matter could not be made at ISWG-GHG 13 and MEPC 79, it was agreed that the discussion on the revised strategy will be continued by ISWG-GHG 14 and 15, with a view to adoption of revised IMO GHG strategy at MEPC 80.

Basket of candidate mid-term measures

ISWG-GHG 13 considered a number of proposals on the basket of candidate mid-term measures in the context of Phase II of the work plan for the development of mid- and long-term measures as follows:

- .1 Emission Cap-and-Trade System (ECTS) and associated amendments to MARPOL Annex VI and outline of a new ECTS Code. It also includes a carbon price ceiling mechanism to supplement the concerns regarding carbon price volatility, and limitation of the total amount of Ship Emission Units available every

¹ **Green Corridors** Specific trade routes between major port of hubs for the ships using zero-emission solutions

year through periodical auctions managed by the Ship Emission Trading Body between 2027-2050;

.2 Proposed basket of measures, consisting of an ECTS, GHG Fuel Standard (GFS) and supported by National Action Plans, technical cooperation and green corridors;

.3 Proposed basket of measures combining a GFS with a GHG Levy, and pathways to address the negative impacts on developing countries, SIDS and LDCs by utilizing the funds;

.4 Discussions on mid-term measures must be cautious about overburdening the shipping industry and not to shift the upstream emission to ships. It also urges the need to flesh out the CBDR-RC principle, emphasizing the importance of strictly utilizing the revenue collected from economic measures for in-sector purposes and to mitigate negative impact on developing countries;

.5 Zero-Emission Shipping Incentive Scheme (ZESIS) applicable to ships of 5,000GT and above engaged in the international voyage. It also includes a mechanism to incentivize first movers, using revenues raised through GHG contributions to reward shipowners using zero-emission fuels;

.6 GHG Fuel Standard with a voluntary flexible mechanism that fosters innovation, incentivizes first movers, and maintains the level playing field. It also includes a remedial action that allows ships that cannot operate on low-GHG fuels to continue to operate, by using the Surplus Reward Units (Over-compliant ships earn rewards by selling the units to non-compliant ships);

.7 A flat rate contribution from ships as part of a fund and reward measure and the need to narrow the price gap between alternative and conventional fuels via a rewards programme for CO₂ emissions prevented by ships using eligible alternative fuels. It also proposes that an IMO Maritime Sustainability Fund (IMSF) could be used to fund rewards and to expedite an equitable transition; and

.8 A carbon levy (\$ 100) to be introduced in 2025 based on well-to-wake CO₂ equivalent emissions, in accordance with the draft guidelines on lifecycle GHG intensity of marine fuels (LCA guidelines). The levy contribution of each ship can be defined from data collected in IMO DCS. At each 5-year period the levy rate (per tonne of CO_{2eq}/GHG) will be reviewed and increased as necessary so as to further reduce or eliminate the price gap between fossil fuels and low- and zero-GHG technologies and fuels.

During the discussion, ISWG-GHG 13 particularly noted an increased support and convergence for a basket of measures combining technical and economic elements, i.e. a well-to-wake GHG intensity fuel standard in combination with a levy scheme imposing a set price on well-to-wake or tank-to-wake GHG emission. A levy scheme can also be combined with a rebate system where the revenues are provided to the ships using the zero emissions fuel and technologies to cover the price gap between fossil and zero emission fuels. Although any decision on this matter could not be made at ISWG-GHG 13 and MEPC 79, it was agreed that the discussion on mid-term measures will be continued by ISWG-GHG 14 and 15. The decision on which measures to develop into regulations will be made at MEPC 80.

For information, the pros and cons of each proposed mid-term measure are as follows:

Proposal	Concept	Advantage	Disadvantage
GFS (GHG Fuel Standard)	Limitation of ship's average Well to Wake GHG emission intensity(MJ/gCO _{2eq}) based on the annual fuel oil use with phased reinforcement	It is possible to confirm GHG reduction targets and project supply and costs of low and zero carbon fuel	It is difficult to procure funds for supporting developing countries and development of zero carbon technologies as it is not a fund based measure, and there is no

			incentives for first mover
ETS (Emission Cap and Trade)	Each ship will be given emission allowances by IMO, and the ship purchases the allowances in the carbon emission market if emitting in excess of the allocation	By regulating total amount of GHG from ships, it is possible to monitor whether clear reduction targets are achieved. The incentives for First Mover and facilitating the funds such as auction are possible	It is difficult to predict carbon price as its price is determined by the market, and unstable carbon prices cause uncertainty in investment (new builds and technology development) and administrative burden
GHG Levy	A system in which a certain amount (carbon price) per GHG emission is imposed to the ships, and managing the funds established by this way	It is easier to implement than emission trading system, generate substantial amount of funds depending on carbon prices, promote the transition to strengthen the market competitiveness of low and zero carbon fuels, and expand investment by industry due to constant and predictable carbon prices	It is difficult to confirm whether the reduction target is achieved (no direct correlation with reduction of GHG from shipping), and the agreement on carbon prices may be difficult since the IMO determines the carbon prices through the discussion in a policy and political manner
ZEV (Zero Emission Vessel) incentive	A certain amount per emission (carbon price) is imposed to the ships, and direct incentives by offering (rebate) some of funds raised to the shipping companies purchasing zero carbon fuels	It is possible to compensate for gap in fuel price at carbon prices lower than GHG levy. It is possible to revitalize investment (new builds and R&D) in the industries as carbon prices are low	Its definition (ZEV) should be provided, and it is difficult to confirm whether GHG reduction target has been achieved
IMSR (International Maritime Sustainability Funding and Reward)	Revenues are collected from the ships rated as D and E by using the CII rating system, and contributions are provided to ships rated as A and B. 5% incentives are further provided to ships entering and leaving the ports located at developing countries that are negatively impacted in terms of GHG reduction measures	By imposing contributions on the ships rated as D and E, uncertainty about ship's sustainable operation can be mitigated, and CII mechanism can be utilized in the medium and long term	The applicability is limited to the ships to which CII requirements apply, and operational efficiency can be improved by low-speed operation rather than fuel conversion, which may delay the introduction of zero carbon ships
Basket of Measures	To compensate for the flaws of each measure, technical measure (GFS) and market based measure (GHG Levy or ETS) are combined together	The flaws of the carbon levy, which is difficult to confirm whether the reduction target has been achieved, can be supplemented by GFS. There's less administrative burden compared to ETS	The flaws of the ETS, which is difficult to invest due to unstable carbon prices, cannot be compensated. There's more administrative burden compared to carbon levy
IMRB (International Maritime Research and Development Board)	Ships charge 2 dollars per ton of fuel oil purchased, and the funds collected will be used for the development of technologies related to zero carbon ships, fuels and infrastructure	Continuous discussion and improvement make it more complete in terms of implementation of the system, and process for managing the funds raised is possible	It is unlikely to be adopted as a single measure and is likely to be considered as a way to use the funds raised for market based measures (ETS and GHG Levy)

Interim report of the Correspondence Group on Marine Fuel Lifecycle GHG Analysis

ISWG-GHG 13 considered an interim report of the CG on Marine Fuel Lifecycle GHG Analysis and matters relating to the use of biofuels to reduce GHG emissions from ships as follows:

- 1 The initial list of fuel pathways (HFO, LFO, Diesel/Gas oil, LPG, LNG, CNG, Ethane, Vegetable oil-based fuel, Diesel, DME, Methanol, Ethanol, Hydrogen, Ammonia, Electricity) with a view to its inclusion in the

draft LCA guidelines;

.2 Consideration of Well-to-Wake CO₂e20 emissions (GWP20) including indirect land use change (ILUC), in IMO's LCA guidelines as demonstrated by a renewable LNG case study;

.3 It was proposed that any biofuel manufactured from recycled sustainable biomass, seed oil from tree species that do not compete for food and fodder, and certified as a sustainable fuel as per the LCA guidelines, be assigned zero CO₂eq value for use in IMO DCS and CII regulations; and

.4 Proposed interim guidelines for the usage of biofuel from crops and waste biomass to be developed with criteria for NO_x verification for the biofuel blend with both distillate and residual fossil fuels onboard and a weighted average representative emission factor (Cf) for biofuel blends;

MEPC 79 noted the progress made on the development of draft LCA guidelines and the initial list of fuel pathways to be included in the draft guidelines. The correspondence group will continue the work on the development of the LCA guidelines and its final report will be submitted to MEPC 80.

Further consideration of the revision of the Ship Fuel Oil Consumption Data Collection System (DCS)

ISWG-GHG 13 considered a proposal containing amendments to appendix IX of MARPOL Annex VI as follows:

.1 Inclusion of the annual aggregated transport work per ship and innovative energy efficiency technologies; and

.2 A higher granularity of the fuel consumption reporting (split of fuel consumed per main category of combustion system and between operational modes) and full public access to the DCS in a non-anonymized form or that different levels of access for different categories of users.

After consideration, ISWG-GHG 13 and MEPC 79 noted the broad support from member States for the inclusion of data on transport work and the possible use of innovative technologies and on the level of granularity of reported data. It was further agreed that this work will continue at ISWG-GHG 14.

4.2 Amendments to Res.MEPC.323(74) Invitation to Member States to Encourage Voluntary Cooperation between the Port and Shipping Sectors to Contribute to Reducing GHG Emission from Ships, and Res.MEPC.327(75) Encouragement of Member States to Develop and Submit Voluntary National Action Plans to Address GHG Emission from ships

MEPC 79 adopted Res.MEPC.366(79) and Res.MEPC.367(79) to encourage and incentivize 'route-based actions' or 'green corridors' by member States, and encouraging the production of renewable fuels for shipping in National Action Plans to address GHG Emission from Ships.

4.3 Onboard CO₂ capture (CO₂ removal)

MEPC 79 considered a number of proposals relating to the onboard CO₂ capture system as follows:

.1 Draft amendments to Res.MEPC.308(73) *2018 Guidelines on the method of calculation of the Attained EEDI for new ships* to revise the EEDI calculation formula for reflecting GHG reduction effect from onboard carbon capture system;

.2 Draft amendments to Res.MEPC.254(67) *2014 Guidelines on survey and certification of the EEDI* to incorporate the positive emission reduction effects by installation of onboard carbon capture system;

.3 Draft amendments to Res.MEPC.352(78) *2022 Guidelines on operational Carbon Intensity Indicators and the calculation methods* to revise the CII calculation formula for reflecting GHG reduction effect from onboard carbon capture system;

.4 A newly proposed MEPC Circular on sample format for the information to be included in the CO₂ receipt note, providing evidence for the quantity of CO₂ delivered ashore;

.5 A dedicated work stream to review the status of technological development of onboard carbon capture applications, including their potential in reducing GHG emissions from ships; identify possible options for the accounting, verification and certification of CO₂ captured onboard ships engaged in international voyages; and consider how to incorporate onboard carbon capture in the Organization's regulatory framework; and

.6 It was proposed that onboard CO₂ capture and the system's effectiveness for reduction of GHG emission should be reflected in all relevant frameworks relating to the GHG emissions such as EEDI, EEXI, CII as well as LCA guidelines so as to remove regulatory barriers to innovative technology.

MEPC 79 noted the views that, in particular, development of a specific work plan to initiate a holistic consideration on how to best reflect onboard CO₂ capture in various IMO instruments and a careful approach would be required on this issue, such as accounting, storage, disposal, and relevant certification schemes, to ensure effective implementation so that carbon captured would not be released back into the atmosphere.

MEPC 79 couldn't reach a consensus on the proposals, and invited interested member States and organizations to submit more information and concrete proposals to future session for further consideration.

4.4 Proposed amendments to the CII Guidelines

MEPC 79 considered a number of amendments to the CII Guidelines in terms of correction factors and new reference line for specific ship types and operating patterns as follows:

.1 Introduction of a correction factor (FC_{BOG}) for calculating the attained CII of steam driven LNG carriers, given the specific differences on fuel consumption of the steam driven LNG carriers as well as fleet compliance which allows ships to offset inferior ratings against ships with better ratings;

.2 Introduction of a correction factor ($FC_{electrical,i}$) for calculating the attained CII to cargo cooling/reliquefaction systems on refrigerated cargo carriers;

.3 A proposed new reference line and definition for self-unloading bulk carriers equipped with onboard cargo-handling systems that are powered by electricity generated onboard from fuel with a significant share of their CO₂ emissions stem from cargo handling;

.4 Introduction of a correction factor for short voyages and port waiting time; and

.5 An alternative CII metric for cruise passenger ships.

After consideration, MEPC 79 agreed to defer further consideration of the above proposals for consideration by

the working group in Air Pollution and Energy Efficiency to be established at MEPC 80, which will also consider a proposal on how the review of the short-term measures could be conducted in an effective way.

Implication Analysis

- Taking into account that the discussions on development of lifecycle GHG/Carbon intensity guidelines for all relevant types of fuels, mid- and long-term GHG reduction measures, and revision of the Initial IMO GHG Strategy and 2050 levels of ambition will be continued by future ISWG-GHG and MEPC meeting, readers are invited to note future discussion progress with following terms of references and agendas of ISWG-GHG:
 - **ISWG-GHG 14 (20 to 24 March 2023) and 15(26 to 30 June 2023)**
 - .1 Further consideration and finalization of the development of the draft Revised IMO Strategy on reduction of GHG emissions from ships;
 - .2 Further consideration and finalization of the assessment and selection of measure(s) to further develop in the context of Phase II of the Work plan for the development of mid- and long-term measures;
 - .3 Further consideration of the revision of the IMO ship fuel oil consumption Data Collection System (DCS); and
 - .4 Consideration of the final report of the Correspondence Group on Marine Fuel Life Cycle GHG Analysis with a view to finalization of the LCA Guidelines (for ISWG-GHG 15 only)
 - **MEPC 80 (3 to 7 July 2023)**
 - .1 Adoption of the Revised IMO Strategy on reduction of GHG emission from ships;
 - .2 Selection of candidate measures for mid- and long-term measure and commence Phase III of the Work plan for the development of mid- and long-term measures; and
 - .3 Approval of the interim Guidelines on Lifecycle GHG intensity of marine fuels.

5. Marine Plastic Litter from ships (Agenda 8)

MEPC 79 considered recommendations from the review of the terms of reference for the *IMO Study on marine plastic litter from ships*, given the report by an external consultant. The recommendations by an external consultant are as follows:

- .1 The recommendation to adopt a stepwise approach and pursue subprojects that address specific data gap (e.g. by region, by industry, by ship type or by type of litter) in order to build up a global data set to assess marine plastic litter from ships; and
- .2 Consideration on how the GloLitter Partnerships Project, with its established country and industry partnerships, could contribute towards the fulfillment of the terms of reference for the *IMO Study on marine plastic litter from ships*.

After consideration, MEPC 79 agreed to revise the terms of reference for the IMO study on marine plastic litter from ships to make it more specific by adopting a stepwise approach and pursue subprojects addressing specific data gap. MEPC 79 invited member States and international organizations to submit proposal on how to progress the IMO Study on Marine Plastic Litter from Ships to MEPC 80.

6. Report of other Sub-Committees (Agenda 9)

6.1 Report of III 8

MEPC 78 considered the issues related to Procedures for port State control, instructed III sub-Committee to whether it should be regarded as a detainable deficiency if the CII implementation plan and/or the plan of corrective actions for the ships rated as D for 3 consecutive years or rated as E are not implemented at the time of the inspection. MEPC 79 noted that III 8 considered this issue, and agreed that the absence of implementation by the ship as planned at the time of the inspection of the three-year implementation plan and/or the plan of corrective actions for a ship rated as D for three consecutive years or rated as E should not be regarded as a detainable deficiency.

MEPC 79 noted that III 8 concluded that under the AFS Convention there is no requirement for type approval as pre-qualification for anti-fouling paint products for issuance of an IAFA Certificate, though it should be at the discretion of the Administration to decide if more than what is required under the provisions of the Convention is needed.

6.2 Report of SSE 8

MEPC 77 approved a new output to develop draft amendments to the *2014 Standard specification for shipboard incinerator* (Res.MEPC.244(66)) by reviewing the provisions of its annex 2 on fire protection requirements for incinerators and waste stowage spaces, to remove perceived discrepancies between the standard and SOLAS chapter II-2. It was evidenced that SOLAS regulations require one of the fixed fire-extinguishing systems whereas Res.MEPC.244(66) specifies the fitting of an automatic sprinkler system.

SSE 8 agreed to delete annex 2 of the standard so that the requirements in SOLAS for the fire safety provisions and waste stowage spaced are implemented consistently. The draft amendments were submitted to MEPC 79 for adoption. MEPC 79 adopted Res.MEPC.368(79) on the amendments to the *2014 Standard specification for shipboard incinerator* (Res.MEPC.244(66)) by deleting the fire fighting requirements from the specification. Thus, the current fire fighting requirements of SOLAS Convention are to be complied with and applies to shipboard incinerators with capacities of up to 4,000 kW.

7. Identification and protection of Special Areas, ECAs and PSSAs (Agenda 10)

MEPC 79 agreed in principle to designate the North West Mediterranean as a PSSA (Particularly Sensitive Sea Area). Mediterranean sea are is recognized to an area of significant shipping activities which pose a risk to the diverse natural marine habitats as well as large marine mammals.

As the Committee agreed that the associated protective measures need to be further developed before the area is designated as a PSSA, it was further agreed to request NCSR Sub-Committee to further consider the appropriate protective measures for the area.

8. New work program (Agenda 12)

8.1 Revision of MARPOL Annex II in order to improve the effectiveness of cargo tank stripping, tank washing operations and prewash procedures for products with a high melting point and/or high viscosity

MEPC 79 approved a new output on “Amendments to MARPOL Annex II in order to improve the effectiveness of cargo tank stripping, tank washing operations and prewash procedures for products with a high melting point and/or high viscosity”, assigning the PPR Sub-Committee as the associated organ. In certain geographical areas

such as *the North West European waters* and others as referred in regulation 13.9 of MARPOL Annex II, a prewash shall be carried out for the ships carrying substances assigned to Pollution Category Y which are persistent floaters as defined in regulation 1.23 of MARPOL Annex II with a viscosity equal to or greater than 50 mPa.s at 20°C and/or with a melting point equal to or greater than 0°C, as identified by '16.2.7' in column 'o' of chapter 17 of the IBC Code.

While the section C in Appendix VI (Prewash procedure) of MARPOL Annex II stipulates that for the purposes of prewash procedures persistent floaters subject to regulation 13.7.1.4 of MARPOL Annex II shall be treated as solidifying or high-viscosity substances, it was shared that most paraffin-like substances in Pollution Category Y which are fall under regulation 13.7.1.4 of MARPOL Annex II have been found on beaches worldwide.

Thus, it was agreed that PPR Sub-Committee considers the improved cargo tank stripping, tank washing operations and prewash procedures for products with a high melting point and/or high viscosity for 2 years.

8.2 Amendments to the Revised guidelines and specifications for pollution prevention equipment for machinery space bilges of ships (Res.MEPC.107(49))

MEPC 79 approved a new output on "Revision of *the Revised guidelines and specifications for pollution prevention equipment for machinery space bilges of ships* (Res.MEPC.107(49)), assigning the PPR Sub-Committee as the associated organ. It has been found that the 15ppm bile alarm does not give a warning signal when the sample pipe is blocked, or the manual stop valve has been inadvertently or deliberately operated, resulting in no sample water entering the test and untreated oily water being discharged overboard.

The objective of this new output is to eliminate the possibility of oily water, in which oil content potentially exceeded 15 ppm, from being discharged overboard in the event that sample water was blocked from flowing through the 15ppm bilge alarm. Thus, it was agreed that PPR Sub-Committee considers the development of the improved guidelines and specification for bilge water separator for 2 years.

Should you have inquiries, please contact P.I.C. Thank you.

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