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# IMO Marine Environment Protection Committee Seventy-Sixth Session (MEPC 76)

## Agenda Preview

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# Overview of discussions

Below are some of the discussions expected at MEPC 76 which will have greater significance for current practices. More detail, and other discussions, are given under the relevant subject headings in the report.

- **Amendments to MARPOL Annex VI and short term GHG reduction**
  - Introducing new regulations 22 (attained EEXI), 25 (required EEXI) and 28 (operational carbon intensity) are due for adoption alongside the guidelines supporting EEXI and operational carbon intensity reduction measures.
  - Review of the results of Impact Assessment on States. ([Agenda item 3](#) and [Agenda item 7](#))
- **GHG reduction mid and long-term measures / R&D**
  - Discussions on enhancing the viability of low and zero-carbon fuels, market based measures / universal GHG levy.
  - Revised proposals for the International Maritime R&D Board (IMRB) and Fund (IMRF). ([Agenda item 7](#))
- **Aquatic environment**
  - Clarifications to the Form of the International Ballast Water Management Certificate (IBWMC).
  - Adoption of amendments to the AFS Convention prohibiting cybutryne. ([Agenda item 4](#))
  - Approval of MEPC Circulars to address marine plastic litter from ships. ([Agenda item 8](#))
- **SOx and Fuel**
  - Scoping of guidance work for discharge of scrubber water to be agreed.
  - Review of marine fuel quality - VLSFO vs HSFO and Impact of Black Carbon Emissions from shipping. ([Agenda item 9](#))
- **MARPOL Annex I**
  - Amendments to incorporate a prohibition on the use and carriage for use of heavy fuel oil as fuel by ships in Arctic waters, Guidelines for handling oily waste in machinery spaces and amendments to the IOPP Certificate and the Oil Record Book. ([Agenda item 3](#))

## Introduction

MEPC 76 will be held 10 – 17 June 2021 hosted remotely from the IMO in London. An intersessional working group on greenhouse gas reduction is being held 24-28 May 2021 as this Agenda Preview is published.

A virtual drafting group on amendments to mandatory instruments will undertake an editorial review of draft amendments to MARPOL Annexes I, IV and VI and the AFS Convention which were approved at MEPC 75. This is covered under agenda item 3. No other working groups will be established during the session.

In this instance due to the extraordinary circumstances related to Covid-19, delegations will review a selection of proposals covered under various agenda items and provide feedback to the IMO prior to the virtual meeting to aid decision making by the Committee.

This briefing summarises the discussions which are relevant to the work of Lloyd's Register.

**Additional Information**  
Lloyd's Register's [MEPC 75 Summary Report](#)

# Decisions of other bodies

(Agenda item 2)

<b>Additional Information</b> Lloyd's Register's <a href="#">MSC 102 Summary Report</a>
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In the interest of time, the proposals under this item will be considered entirely through correspondence before the virtual meeting.

MEPC 76 will consider the outcomes of LC 42/LP 15, FAL 44, MSC 102, TC 70, C 124 on matters of relevance to its work, some of which are outlined below:

- FAL 44
  - Regulatory scoping exercise for the use of Maritime Autonomous Surface Ships (MASS) was postponed until FAL 45.
  - Endorsed resolution MSC.473(ES.2) on *Recommended action to facilitate ship crew change, access to medical care and seafarer travel during the COVID-19 pandemic*.
- MSC 102
  - Authorised NCSR 8 to submit the revision of the *Guidelines on places of refuge for ships in need of assistance* (resolution A.949(23)) to MEPC and LEG for concurrent approval, with a view to subsequent adoption by A 32. This is likely to be considered by MEPC 77.
  - With a view to subsequent adoption, invites MEPC 76 to approve draft amendments to MARPOL Annex I; concurrently approve draft amendments to the IBC Code related to watertight doors on cargo ships and agree with their decision to apply them to all ships.
- LC 42/LP 15 discussed the following topics:
  - Development of further guidance on disposal site selection.
  - Disposal of fibreglass vessels: to initiate the development of guidance on the end-of-life management of fibre reinforced plastic vessels and alternatives to at-sea disposal in collaboration with the UN Environment Programme.
  - Development of default action lists and action levels for dredged material.
  - CO<sub>2</sub> sequestration in sub-seabed geological formations.
  - Monitoring and assessment of the marine environment: endorsed the re-establishment of a correspondence group on Reporting of Monitoring Activities.
  - Coastal management issues associated with activities to prevent marine pollution: Issues related to marine litter and microplastics. Consideration of a consultant's report on current practices of managing sewage sludge at sea was postponed the next session of Scientific Groups.

# Amendments to Mandatory Instruments

(Agenda item 3)

## Amendments to MARPOL Annex VI to reduce the carbon intensity of existing ships

MEPC 76 will consider, with a view to adopting, proposed amendments to MARPOL Annex VI concerning mandatory goal-based technical and operational measures to reduce carbon intensity of international shipping.

These amendments introduce a goal based short-term measure with Energy Efficiency Existing Ship Index (EEXI) and in-service carbon intensity management as functional requirements. Upon adoption of these amendments, a revised MARPOL Annex VI will come into effect.

A new regulation 22 (attained EEXI) and 25 (required EEXI) will require existing ships to improve their technical efficiency, so they are comparable to an equivalent new ship of the same type and deadweight which would be required to comply with the applicable EEDI Phase.

New regulation 28 (operational carbon intensity) requires a linear reduction in the in-service carbon intensity of ships between 2023 and 2030, such that the global fleet achieves an average reduction of at least 40% by 2030, relative to 2008. Ships will also be rated (A – E) based on their attained annual carbon intensity reduction measures by a Carbon Intensity Indicator (CII). Data submitted under regulation 22A (collection and reporting of ship fuel oil consumption data) will be used as the basis of calculation and verification of CII and determination of a rating. Corrective actions will be required for ships which are rated D for three consecutive years, or E.

A correspondence group set up to finalise a number of guidelines to facilitate the implementation of EEXI and Operational Carbon Intensity measures will report the outcome of their discussion to MEPC 76.

As directed by MEPC 75, a comprehensive impact assessment of the draft amendments to MARPOL Annex VI on States has been undertaken and was a prerequisite to adoption. The intent of this assessment was to identify and address any disproportionate impacts on States, including developing countries, in particular Least Developed Countries (LDCs) and Small Island Developing States (SIDS) as well as countries remote from their export markets.

MEPC 76 will also consider a number of proposals seeking changes or clarifications to the amendments under this agenda item, including the following:

- Suggestions that ice-classed ships are excluded from using data collected when sailing in ice conditions when calculating attained annual CII.
- Proposed modifications to the CII rating due to flag or company change due to concerns that the attained CII and consequent CII ratings in the year of change would be less representative. At the same time, contrarian views suggesting that the annual attained CII is calculated regardless of such change for a full calendar year.
- Proposal to ensure consistency between the draft new Regulations for EEXI, CII and SEEMP in way of entry into force dates and clearly specifying the vessels to which the requirements apply across regulations.

More discussion on these measures and the outcomes of the impact assessment are covered under [Agenda Item 7](#) of this report.

## Amendments to MARPOL Annex I

Deliberations on the potential impact of a heavy fuel oil spill on the Arctic environment and its local communities led to the drafting and subsequent approval of a new Regulation 43A to MARPOL Annex I to incorporate a prohibition on the use and carriage for use of heavy fuel oil as fuel by ships in Arctic waters.

Proposed new Regulation 43A contains provisions which allow for the following:

- A waiver from the HFO ban until 1 July 2029 for ships with oil fuel tanks within their double hull that comply with Regulation 12A of MARPOL Annex I or Regulation 1.2.1 of Chapter 1, Part II-A of the Polar Code.
- Arctic coastal countries to waive the requirements of this new regulation until 1 July 2029 for vessels flying their respective flags and operating in their respective waters.

Although these amendments are up for adoption at MEPC 76 and due to enter into force 1 November 2020, MEPC is expected to address concerns that the provisions do not go far enough.

## Exemption of UNSP barges from survey and certification requirements in MARPOL Annexes I, IV and VI

MEPC 76 is expected to adopt draft amendments to MARPOL Annexes I, IV and VI concerning the exemption of unmanned non-self-propelled (UNSP) barges from survey and certification requirements.

Upon adoption of these amendments, Draft MEPC.1 circular on *guidelines for exemption of unmanned non-self-propelled (UNSP) barges from the survey and certification requirements* under the MARPOL Convention is expected to be approved by MEPC 76.

Once adopted these amendments are expected to enter into force 1 November 2022.

## Minor amendment to MARPOL Annex VI – Regulation 13, Emission Control Area

Recalling a proposal on an issue during MEPC 71 where the wording in relation to the Baltic Sea and the North Sea Emission Control Areas, in respect of regulation 13, was deemed inappropriate. The issue being that the areas specified in Appendix VII of MARPOL Annex VI were those of the respective ECAs, whereas the definitions given by the cross-references to regulation 1.11.2 of MARPOL Annex I and regulation 1.14.6 of MARPOL Annex V were of the respective sea areas. For consistency within the various MARPOL Annexes, editorial amendment to Regulation 13 will read as Baltic Sea and North Sea “areas” instead of “emission control areas”.

## Model form of the International Anti-fouling System Certificate (IAFSC)

MEPC 76 is expected to adopt the draft amendments to Annexes 1 and 4 to the AFS Convention and the form of the IAFSC to include controls on cybutryne.

The amendments, which were approved by MEPC 75, require ships to stop using anti-fouling systems containing cybutryne from 1 January 2023, and to remove or seal such anti-fouling systems from existing ships with an appropriate barrier at the next scheduled renewal of the anti-fouling system after 1 January 2023, but no later than 60 months following the last application.

A new proposal to amend the table within the draft form of IAFSC to include ships that had applied an anti-fouling system containing cybutryne previously, but not currently contained in the external coating layer of their hull, will be considered during the session.

Upon adoption, the approved amendments are expected to enter into force on 1 January 2023.

## Harmful aquatic organisms in ballast water

(Agenda item 4)

In the interest of time, the proposals under this item will be considered entirely through correspondence before the virtual meeting.

MEPC 76 will consider the following topics:

### Verification of compliance monitoring devices (CMDs)

Upon invitation from MEPC 74, drafting of *ISO 3725 Ships and marine technology – Ballast water sampling – Verification testing protocol for CMDs* began in January 2020 during the meeting of the ISO TC8 Working Group on aquatic nuisance species

It is proposed that the current working draft is revised to include a simplified protocol that would focus on:

- A general approach for determining CMD trueness (i.e. accuracy), precision and reliability for any condition or variable of interest to IMO, Administrations or other end-users.
- Aspects such as measurement uncertainties of the CMD; the reference methods and consideration of systematic error and developing more detailed and appropriate methods for quantifying CMD reliability.

MEPC 76 is expected to instruct the PPR sub-committee to review the proposals by International Organization for Standardization (ISO).

### Form of International Ballast Water Management Certificate (IBWMC)

Reservations about the draft amendments to the form of the IBWMC were expressed during MEPC 74. It was argued that the entry for ballast water management methods other than those described in regulations D-1, D-2 and D-4 of the BWM Convention, as noted in the amendment to the form of the IBWMC, was difficult to interpret and therefore, the need for clarity and consistency while applying the requirements of the Convention.

### Type approval of ballast water management systems

MEPC 76 will also note the information provided towards type approval of a variety of BWMSs.

### Implementation of the BWM Convention

The following information will be noted:

- A paper discussing entries in the Ballast Water Record Book (BWRB) for commonly used ballast water operations on tankers, based on questions and feedback from shipowners, operators and feedback from flag Administrations and port State Authorities.
- Discussion on a rapid detailed method for assessing the viability of 10-50 µm phytoplankton in ballast water.
- A study evaluating the performance of ballast water management systems installed on board ships against the D-2 standard.

# Air pollution prevention

(Agenda item 5)

## Additional Information

Lloyd's Register's [PPR 7 Summary Report](#) and [PPR 8 Summary Report](#)

A correspondence group (CG) on Air Pollution and Energy Efficiency was formed during MEPC 75 to progress the work intersessionally and report to MEPC 76.

## Terms of reference for the CG on Air Pollution and Energy Efficiency

[Review the indicative example of a license for fuel oil supply, with a view to adding such a provision in the \*Guidance for best practice for member State/coastal State\* \(MEPC.1/Circ.884\)](#)

It was during the session of MEPC 74 when the need for introducing licensing schemes for bunker suppliers was recognised as an important first step to help ensure quality and compliance of fuel oil. This was followed by proposals encouraging member States to implement such a scheme within their jurisdiction.

Consequently, MEPC 76 will consider, with a view to approving, draft amendments to the *Guidance for best practice for member State/coastal State*, which contains the indicative example of a licence for fuel oil supply.

## Carbon intensity proxies for offshore and marine contracting vessels and cruise passenger ships

MEPC 76 will consider the pros and cons of a proposed Proxy A which is based on yearly energy consumption, and Proxy B, based on effective operational utilisation for offshore vessels. Although further work will be identified to implement either of the proxies which are dependent on engine running hours and installed power data; both of which are not currently noted by the IMO Data Collection System (DCS).

For cruise passenger ships the use of Available Lower Berth (ALB) was deemed to more appropriate as an indicator of capacity. Similar challenges of data gathering apply for ALB as this too is not covered under DCS.

## Performance indicators (PIs) related to the IMO Ship Fuel Oil Consumption Database

A number of newly developed potential PIs, some of which can be calculated using available data from the IMO DCS, will be presented to MEPC 76 for consideration. These include usage of defined parameters such as hours underway, hours of service operation and underway.

## Work on the Shaft/Engine Power Limitation concept

MEPC 76 is expected to approve a draft work plan to develop the guidelines on shaft/engine power limitation (S/EPL) system to comply with the EEDI or EEXI requirements and use of a power reserve. To maintain consistency between the two requirements and noting the progress made in drafting the EEXI guidelines, work is expected to continue intersessionally on the consolidated draft guidelines for planned adoption at MEPC 77.

## Revision of the minimum power guidelines

The consolidated version of the *2013 Interim guidelines for determining minimum propulsion power to maintain the manoeuvrability of ships in adverse conditions* (MEPC.1/Circ.850/Rev.2) is seen as the only statutory guidance which addresses the safety critical matter of ensuring that ships are provided with sufficient power to manoeuvre safely in adverse conditions.

The Guidelines, when initially drafted, were concerned with the minimum power required for tankers and bulk carriers, provides two assessment methods:

1. Level 1 minimum power lines based on installed power of the existing fleet taking the form  $(a \times \text{Deadweight}) + b$ ; and
2. Level 2 simplified assessment method considering added power in waves together with assumptions regarding severe weather likely to be encountered.

Based on data and analysis of minimum powering levels at a range of weather conditions and advance speeds, it was shown that the level 2 simplified assessment method was very sensitive to the conditions used for the assessment. Consequently, this challenged assumptions that the simplified assessment method would lead to a reduction in the required level of power.

MEPC 76 will consider, with a view to adoption, the draft amendments to the guidelines for determining minimum propulsion power to maintain the manoeuvrability of ships in adverse conditions.

#### [Amendments to the 2018 Guidelines on the method of calculation of the attained EEDI for new ships](#)

Expected to be adopted by MEPC 76, the proposed changes to the 2018 guidelines (Resolution MEPC.308(73) as amended by Resolution MEPC.322(74)) take into consideration the amendments made to MARPOL Annex VI as adopted by MEPC 75, for the mandatory reporting of the attained EEDI values and related information.

#### [Approval of draft amendments to circular MEPC.1/Circ.795/Rev.4](#)

Proposed updates to the circular to clarify dates related to EEDI Phase 2 and 3 for "new ships" are awaiting approval during this session.

### [MEPC 76 will note the following information under this agenda item:](#)

#### [IMO sulphur monitoring programme for 2020](#)

Information including, but not limited to the following:

- In 2020, a total of 137,306 samples were taken from a total of 113,307,010 tonnes of residual fuel oil supplied for use on board ships.
- In terms of the sulphur contents of the tested *residual* fuel oils, by quantity, 1.71% were not exceeding 0.10%; 77.94 % were not exceeding 0.50%, but above 0.10%; and 20.35% were exceeding 0.50%. Whereas, sulphur contents of the tested *distillate* fuel oils, by quantity, 93.99% were not exceeding 0.10%; 5.93 % were found above 0.1% but not exceeding 0.50%; and 0.08% were exceeding 0.50%
- Between 1 January 2020 and 1 March 2021, 59 Fuel Oil Non-Availability Reports (FONARs) had been reported in relation to non-availability of compliant fuel oil with a sulphur content not exceeding 0.50%.
- Until 1 March 2021, in total, there have been 3,204 reports for over 3000 ships noting equivalent means of compliance under regulation 4.2 in the MARPOL Annex VI module in the IMO's Global Integrated Shipping Information System (GISIS). Out of these, 3,161 reports relate to the use of Exhaust Gas Cleaning Systems (EGCS) as compared to 2,359 by 1 July 2020.

#### [Information on port State control \(PSC\) relating to 2020 Sulphur Cap Requirements](#)

- From January to August 2020, member Authorities of the Tokyo MoU conducted a total of 12,481 inspections, of which 13 ships were detained due to non-compliance with the sulphur limit requirements. 11 out of 13 detentions, representing 85%, were made to ships carrying or using non-compliant fuel oil. The other two detentions were related to a defective EGCS and fuel oil change-over procedure.



- In the same period, a total of 110 sulphur limit requirements related deficiencies were recorded, involving 103 ships. They were related to the IAPP Certificate, bunker delivery notes, fuel-change over procedure, EGCS, non-compliant fuel, and non-compliances with the International Safety Management Code (ISM Code).

### Implementation of Tier III NOx emissions regulations for large yachts of 24m load line length or over and less than 500 gross tonnage

Yachts of 24m load line length or over and below 500GT, fall under a temporary exemption granted from 1 January 2016 to 1 January 2021. This was agreed by IMO on the basis of demonstrated implementation challenges with fitting Selective Catalytic Reduction (SCR) technology specific to such vessels.

MEPC 75 considered a proposal that engines used specifically on yachts differentiate themselves from those in other applications, including commercial shipping applications due to their high-power density, thus requiring larger SCR units and/or additional in-engine NOx reductions. It was debated that since abatement technology which was appropriate to be installed in these yachts was yet to materialise, it therefore, made it unlikely for the full portfolio of engines and vessels to comply by the extended 1 January 2021 deadline.

MEPC 76 will note an update on this subject detailing the work done so far by the large yacht sector towards compliance with Tier III limits.

### The following topics are deferred to MEPC 77

- Proposed amendment to MEPC.1/Circ.883 regarding recommended actions to take when the EGCS system malfunctions.
- Discussions on the nature of Very Low Sulphur Fuel Oils and their potential impact on Black Carbon emissions and proposal for switching to distillates in the Arctic (if not considered during plenary).
- Report on the environmental impact assessment of discharge water from EGCS.
- Evaluation and harmonisation of rules and guidance on the discharge of liquid effluents from EGCS into waters, including conditions and areas.
- Overview of data on fuel oil quality and availability currently in the MARPOL Annex VI module in GISIS.

## Energy efficiency of ships

(Agenda item 6)

### Additional Information

[Lloyd's Register CO<sub>2</sub> Verifier: One simple way to comply with two regulations](#)

As noted for the preceding agenda item, a common correspondence group (CG) on Air Pollution and Energy Efficiency was formed during MEPC 75 to progress the work intersessionally and report to MEPC 76.

### Regulation 22A.10 of MARPOL Annex VI - IMO Ship Fuel Oil Consumption Database in GISIS – reporting year 2019

MEPC 76 will note the following findings in relation to the reported fuel consumption data for 2019:

- Data, not accounting for any errors, was reported by 27,221 ships with a combined gross tonnage of 1,187 million gross tonnes.
- 213 million tonnes of fuel, on a quantity basis, was used by the aforementioned 27,221 ships.

- 99.95% of the fuel used was either Heavy Fuel Oil, Light Fuel Oil, Diesel/Gas Oil or Liquid Natural Gas.
- The majority of the reported fuel oil was consumed by the following three EEDI ship types: containerships, bulk carriers and tankers.

MEPC 76 will consider the following recommended improvements to the IMO Ship Fuel Oil Consumption Database module on GISIS:

- When reporting "hours underway", to minimise errors in reporting with values exceeding those possible within a calendar year, GISIS should include a limit of 8,784 hours.
- Further clarification of categorisation of ship types to prevent data entry under the wrong ship category.
- Analysis of the fuels reported under the "Other" category in GISIS shows 11 ships were reported as using ethane as a fuel and 2 ships used biofuels. Consideration to be given to amending the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships*, as set out in resolution MEPC.308(73), to include ethane and biofuels.

Detailed discussions on the following matters are postponed until MEPC 77

- Possible Introduction of EEDI Phase 4.
- Technical consequences of ship machinery design in relation to the EEDI which considers issues including engine de-rating, passing through the barred speed range, shaft alignment, propulsion improving devices and model tests, manoeuvrability in heavy seas, and alternative fuels.
- EEDI Reduction beyond Phase 2 - Consideration of technical issues affecting future evolution of the EEDI regulation and decarbonising shipping.
- Update to model course 4.05 on the Energy Efficient Operation of Ships.
- Draft amendments to MEPC.1/Circ.815 for verification of the wind propulsion system.
- Proposed acquisition method of the wind propulsion system force matrix based on wind tunnel model test.
- Proposed amendments to the 2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships.

## Reduction of GHG emissions from ships

(Agenda item 7)

MEPC 76 will consider the outcome of Intersessional Working Group on Greenhouse Gas emissions (ISWG-GHG 8) (short-term measures) and matters relating to moving forward with mid- and long-term measures.

### ISWG-GHG 8

The eighth session of the ISWG-GHG 8 will meet between 24-28 May 2021 and report their findings to MEPC 76.

The working group is due to finalise the non-mandatory guidelines associated with the draft amendments to Chapter 4 of MARPOL Annex VI which introduce draft new regulations implementing short term technical measures (EEXI) and operational measures (CII).

### EEXI

The maturity of the non-mandatory guidance associated with EEXI suggests that significant changes to the guidance on calculation of the attained EEXI, survey and certification, and overridable power limitation are not expected.

Matters which will be considered include:

- Alternative methods for determining reference speed ( $V_{ref}$ ) using relevant data from the in-service performance measurements to develop a representative speed-power relation for use when calculating the attained EEXI. This proposal provides a compromise option for pre-EEDI certified ships which would otherwise need to choose between the involved process of sea trials and tank tests, or a conservative statistical method.
- Allowing new sea trials to comply with ISO 15016.
- Allowing the extrapolation of a pre-EEDI ship design draught to EEDI (maximum) draught to provide a better basis for determining  $V_{ref}$  than a conservative statistical method for ships with no sea trial data at any draught.
- Modifications to the performance margin in the statistical method for ships with no sea-trial data at any draught to make the results more reasonable and avoid disproportionate impacts on pre-EEDI ships.
- A proposal for a cubic capacity correction factor for vehicle carriers ( $f_{c_{VEHICLE}}$ ) to address the high number of existing ships which would need to use significant overridable power limitation to comply with EEXI; impacting on the economics of the sector.
- Handling of carbon capture technology.
- Using  $PME = 87\% MCR_{lim}$  when using overridable power limitation.

### Operational Carbon Intensity

Some of the more debatable issues relate to the guidance associated with operational carbon intensity. Matters to be considered and resolved include the following:

- Formulation of annual average reduction rates between 2023 and 2030. This includes setting rates based on demand-based (EEOI<sup>1</sup>) or supply-based (AER<sup>2</sup>, lags EEOI by circa 10%) trends since 2008, and setting reduction rates for individual ship types based on what the fleet as an average has achieved (equal contribution) or based on the achievements of particular ship types (ship-specific).
- Scope and definition of voyage exclusions other than those related to regulation 3.1 of MARPOL Annex VI (safety).
- Scope and definition of correction factors for cargo handling, including heating, cooling, tank washing, reefers on container ships and dry cargo handling.
- Acceptance of “fleet-level monitoring”. This mechanism would allow shipowners to offset under-performing ships in their fleets with the performance achieved by their most efficient ships. Additionally, it could help mitigate the negative consequences of requiring certain ships to optimise for AER. AER penalises high payload ships (i.e. with no ballast legs) and ships with a high frequency of port calls, including feeder services, short-sea trades and certain cruise ship itineraries). This is because CO<sub>2</sub> emissions have less of an impact on AER than distance travelled.
- The formulation of the rating mechanism. This includes considering size-dependent correction factors for the rating boundaries to reduce the proportion of ships of a particular type rated D or E purely by virtue of their capacity. Proposals are also made to widen the rating bands for general cargo ships and container ships below 20,000 DWT to reflect variations in operational profiles determined by ship size.
- Management system for ships to which operation CII requirements apply.
- Handling of carbon capture technology and a mechanism to credit this to the CII rating.

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<sup>1</sup> Energy Efficiency Operational Indicator which provides a metric of CO<sub>2</sub> emissions per cargo tonne mile.

<sup>2</sup> Annual Efficiency Ratio which provides a metric of CO<sub>2</sub> emissions per capacity tonne mile.

Due to the volume of work required on EEXI and the technical provisions of the operational carbon intensity reduction requirement, it is expected that further consideration of revised requirements for the Ship Energy Efficiency Management Plan (SEEMP) will be deferred to ISWG-GHG 9.

### Lloyd's Register's view

In general, Lloyd's Register:

- Supports the need to ensure that appropriate and verifiable approaches to determining  $V_{ref}$  are in place.
- Believe that it is vital that effective mechanisms for collecting and verifying voluntarily reported alternative CII are put in place to enable the use of these metrics at a later stage, preferably immediately following the review of the operational carbon intensity required in 2026.
- Note that correction factors have a significant role to play in mitigating the impacts of reliance on supply-based metrics by allowing the characteristics of ship types to be considered. Voyage exclusions may also be necessary in certain circumstances, but where a correction factor can be applied it is expected to be the preferred option.
- Believe that fleet-level monitoring also offers an equivalent compliance mechanism which would also help mitigate the reliance on supply-based metrics. The approach should be supported, but its usability relies on the acceptance of this approach by flag and port States.

### MEPC 76

MEPC 76 will consider the following themes under this agenda item.

### Adopting amendments to MARPOL Annex VI

Draft amendments to Chapter 4 of MARPOL Annex VI are expected to be adopted and will introduce:

- Draft new regulations 23 and 25: attained and required Energy Efficiency Existing Ship Index (EEXI), respectively.
- Draft new regulation 28: operational carbon intensity.

The entry into force of the amendments is proposed as 1 November 2022. However, there is a proposal to delay this until 1 January 2023 to allow for consistency between the draft new regulations.

The following proposals to be will be considered under Draft new regulations 23 and 25; including those deliberated by ISWG-GHG 8:

- Representation of the power of main  $P_{ME(i)}$  and auxiliary engines  $P_{AE(i)}$  in the formula to calculate attained EEXI where Shaft/Engine Power Limitation is installed. Consistency with the EEDI formula and what is deemed as an appropriate margin from the rated installed power (MCR) such that EEXI performance can be appropriately estimated.
- Measures for pre-EEDI ships to obtain ship speed  $V_{ref}$  by using sea trial records where results under the design load draught condition are available and to verify the robustness of such records by referencing the ISO 15016:2002 standard.

Proposals to be considered under draft new regulation 28 including those deliberated by ISWG-GHG 8:

- Modifications to the amendments to include correction factors and voyage exclusions e.g., for ice-classed ships navigating in ice conditions and other exclusions that went beyond regulation 3.1 of MARPOL Annex VI.

- Amended reference lines to allow comparisons between ships of the same type, but with different design and operational features.
- Method of arriving at the CII values for individual ship types recognising that for some ship AER which is a metric calculated as  $CO_2 \text{ emissions} / (Deadweight(DWT) \times Distance \text{ travelled})$  would be more appropriate than cgDIST which is  $CO_2 \text{ emissions} / (Gross \ Tonnage \ (GT) \times Distance \ \text{travelled})$ . For example, it was argued that cgDIST was more appropriate for cruise passenger ships having non-conventional propulsion with GT being a more representative capacity indicator. Whereas AER, i.e. with DWT as proxy, was generally supported for ships such as bulk carriers, gas carriers, tankers, general cargo, ro-ro cargo ships.

The assessment of impacts on States is expected to inform the adoption of the amendments to MARPOL Annex VI.

## Research and Development

MEPC 76 will consider a revised proposal for the International Maritime R&D Board and Fund (IMRB/F) which includes detailed amendments to MARPOL Annex VI. The discussion is expected to focus on the policy aspects of centrally financed and coordinated R&D to accelerate the introduction of zero-emissions vessels into the fleet.

However, the proposed amendments are considered premature by stakeholders that are concerned that a universal levy at a rate of US\$0.624 per tonne of CO<sub>2</sub> emitted per tonne of fuel (HFO, LNG, LPG, methanol and ethanol) purchased for consumption does not adequately reflect the principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC). The implication is that alternative mechanisms, which focus on developed countries leading on R&D funding and subsequent technology transfer, should be considered.

Arguments on the legalities of introducing amendments related to IMRB/F will be heard on the basis that there is precedence of a range of operational and technical measures have been adopted under MARPOL over the years.

Equally, criticism of the practical value of the IMRB/F will also be heard by MEPC 76. Such criticism focuses on the fact that the IMRB/F addresses R&D, rather than deployment of low- and zero-carbon fuels and therefore is incompatible with the Initial IMO Strategy.

### Lloyd's Register's view

In general, Lloyd's Register:

- Agrees that the IMRB/F is politically important and demonstrates a commitment from industry to fund its own transition, but its practical impact remains difficult to assess.
- Notes that criticism of the effectiveness of subsidy means that the IMO could consider de-risking investment by offering a much clearer and bolder pathway towards its interim level of ambition for 2050.
- Notes that R&D is not universally considered to be the fundamental blocker to a market for low- and zero-carbon fuels: scaled and commercially viable solutions based on existing technologies is perceived as the main challenge today.

## Proposals related to ambition, mid- and long-term measures

MEPC 76 is expected to address calls to accelerate consideration of mid- and long-term measures. On the basis of the documents submitted, the concepts for regulatory mechanisms which could be used to enable the effective uptake of alternative low-carbon and zero-carbon fuels include:

- Focus on sources of market-failure, with priority given to enhancing the viability of low- and zero-carbon fuels.
- A fuel CO<sub>2</sub>/GHG limit to determine the maximum CO<sub>2</sub>/GHG emissions that a fuel used in shipping may generate.
- A cap and trading scheme to control emissions and to require the polluter to pay for those emissions.
- Carbon intensity indicators and credit trading/fleet averaging, potentially to allow in-sector generation of offsets.
- A universal levy of US\$100 per CO<sub>2</sub>equivalent tonne. The levy point would either be at the point of purchase or based on total annual emissions. The revenue generated from the scheme is proposed to be distributed so that at least 51% is pledged to the UNFCCC Global Climate Fund with another 33% being directed towards the IMRB/F.
- A GHG tax or levy in a quantum of US\$250 – 400 per tonne CO<sub>2</sub>equivalent to address the price competitiveness of alternatives to fossil fuels.
- A low-GHG fuel standard on an actual, average or pooled basis.

### Lloyd's Register's view

In general, Lloyd's Register:

- Supports acceleration of discussion on market-based measures, without a preference for a particular mechanism. Notwithstanding, the purpose of the mechanism and the quantum of any carbon price should be appropriate to the policy objective, and trivial polluter pays outcomes which do not actively encourage the uptake of alternative low- and zero-carbon fuels should be avoided.
- Believes that how revenue is used will be critical and caution is needed to ensure that market-based measures revenues are prioritised for use in-sector (e.g. subsidies to address fuel prices in favour of low- and zero-carbon options) and in upstream sectors to enable the production, delivery, bunkering and consumption of alternative low- and zero-carbon fuels. Disproportionate allocation of revenues towards more general climate adaptation financing risks slowing down the process of decarbonisation in shipping. Moreover, shipping is not the only industrial sector that has a climate impact and therefore should not be singled out as needing to contribute significant funds to general climate adaptation financing.
- Looks forward to clarification on proposals for CO<sub>2</sub>/GHG limits for marine fuels, and whether the intent is to apply these limits based on lifecycle or tank-to-wake (TTW) approach. This is clearly an important issue and demonstrates the significance of lifecycle analysis to mid- and long-term measures.

### The following topics are deferred to MEPC 77

- The need to consider matters related to the use of biofuels, in particular the need to address the issue of NO<sub>x</sub> certification when using biofuels is highlighted.
- Prediction and Verification of CO<sub>2</sub> Emission Savings with Wind Propulsion Systems.
- Proposal to reflect the onboard CO<sub>2</sub> captured (CO<sub>2</sub> removal) in EEDI and EEXI.
- Proposal to consider the impact all greenhouse gases emitted from ships, including methane.

# Action Plan to address marine plastic litter from ships

(Agenda item 8)

Recognising the harmful effects on marine life and biodiversity, human health as well as negative impacts on activities such as tourism, fisheries and shipping, the IMO adopted resolution MEPC.310(73) *Action Plan to Address Marine Plastic Litter from Ships* in October 2018.

Under this plan the IMO will review and assess the need for updating actions and/or incorporating new actions to the plan annually as well as a comprehensive review assessing the effectiveness of the actions within the plan after five years.

Under this item, MEPC 76 is expected to consider the following:

Work of the Correspondence Group on Development of a Strategy to Address Marine Plastic Litter from Ships. The objective is, to guide the implementation of the Action Plan to best achieve its outcomes, by the establishment of a timeline and identification of appropriate modalities.

This strategy will be reviewed periodically to ensure that it continues to deliver against its objective and outcomes and MEPC 76 is expected to assess the progress made on the identified actions. This will include a progress report by the GESAMP Working Group on Sea-based Sources of Marine Litter.

Time permitting, MEPC 76 will also consider a proposal which makes the marking of fishing gear with the ship's IMO number mandatory. The rationale behind this is the claim that fishing gear has the largest potential impact out of all the sea-based plastic litter sources and despite a global ban on the discharge of fishing gear at sea. Fishing gear may be lost at sea by accident, abandonment or deliberate disposal is commonly referred to as Abandoned, Lost or otherwise Discarded Fishing Gear (ALDFG).

## Pollution prevention and response

(Agenda item 9)

### Additional Information

Lloyd's Register's [PPR 7 Summary Report](#) and [PPR 8 Summary Report](#)

MEPC 76 will consider the following topics under this agenda item:

#### Review of 2020 marine fuels quality

In response to the concerns raised by the shipping industry on the varying characteristics and uncertainty around Very Low Sulphur Fuel Oil (VLSFO), ISO reviewed the characteristics and reported performance of VLSFOs supplied to ships in the period January to June 2020 based on test data, from more than 100,000 bunkers as loaded. This was compared with the quality of high sulphur fuel oil (HSFO) supplied in the period January to June 2018.

The findings suggest that in comparison with the supplied HSFOs, VLSFOs were generally seen to have lower viscosity, lower density, lower micro carbon residue (MCR) and lower calculated carbon aromaticity index (CCAI), higher net specific energy and a higher pour point. All of which generally pointed to VLSFOs tending towards being paraffinic in nature and with potentially better ignition and combustion properties in comparison with HSFOs.

The findings from this study will be taken into consideration when ISO undertakes revision work on ISO 8217:2017 *Petroleum products – Fuels (class F) – Specifications of marine fuels*.

### Scrubber water discharge

Scrubber discharge water contains sulphur oxides, nitrogen oxides and other contaminants transferred from the engine's exhaust gas. There are views that this mix of compounds when discharged overboard has negative impacts on the marine environment and that measures such as discharge ban in particularly sensitive sea areas and special areas; stringent limits for contaminants and further development of standards and protocols for measuring, monitoring and reporting on scrubber discharge water parameters should be considered.

In this context, and recognising the need for uniform and clear regulatory measures to manage the environmental and economic impacts both for the industry and countries, MEPC 76 is expected to approve the scope of work on a newly titled document "*Evaluation and harmonization of rules and guidance on the discharge of discharge water from EGCSs into the aquatic environment, including conditions and areas*".

### Review of integrated bilge water treatment system (IBTS) 2020 Guidelines and amendments to IOPP Certificate and Oil Record Book

It was previously argued that specifying permitted methods of disposal of oily bilge water, and the resulting amendments to the Form of the IOPP Certificate and the Oil Record Book was inconsistent with the spirit of MARPOL Annex I. The case in point being the management of oily bilge water by evaporation. Whereas views on the contrary suggest that this adds more transparency and provides for more accuracy in record keeping with regard to management of oily wastes on ships.

Against this background, MEPC 76 is expected to consider and approve the *2020 Guidelines for systems for handling oily wastes in machinery spaces of ships incorporating guidance notes for an integrated bilge water treatment system* (2020 IBTS Guidelines) and the following draft consequential amendments to MARPOL Annex I:

- Appendix II (Form of the IOPP Certificate and Supplements).
- Appendix III (Form of Oil Record Book).

### Impact on the Arctic of Black Carbon emissions from international shipping

MEPC 76 will consider the following discussions on this subject:

- Note that Black Carbon (BC) emissions from international shipping depended on many factors such as type of engine, fuel formulation, engine load, and engine maintenance. More information was required on the composition of the fuel oils compliant with the 0.50% m/m sulphur limit under MARPOL Annex VI.
- Note the information provided by ISO on fuel oil quality of VLSFOs.
- The need for a standardised sampling, conditioning and measurement protocol, including a traceable reference method and an uncertainty analysis, to make accurate and comparable measurement of BC emissions.
- Potential for limiting the aromatic content in marine fuels in reducing BC emissions and the influence of distillate fuels on BC emissions.
- Proposal for a new MEPC resolution on addressing BC emissions.



## Action Plan to address marine plastic litter from ships

MEPC 76 is expected to approve the following documents:

- Draft MEPC Circular on Provision of adequate facilities at ports and terminals for the reception of plastic waste from ships.
- Draft MEPC Circular on Sharing of results from research on marine litter and encouraging studies to better understand microplastics from ships.

## Procedures for PSC on the use of electronic record books

MEPC 76 will endorse the development of an interim guidance for surveyors, including a sample form to facilitate the endorsement of a cargo operation in an electronic Cargo Record Book.

## Guidelines for port State control under MARPOL Annex VI

A review of supporting information with a view to developing amendments to the *2019 Guidelines for port State control under MARPOL Annex VI Chapter 3* (resolution MEPC.321(74)) to include provisions relating to Chapter 4 of MARPOL Annex VI.

## Approval of unified interpretations of the NOx Technical Code

Draft MEPC Circular revoking MEPC.1/Circ.865 is expected to be revoked subject to the MEPC approval of UI to the NOx Technical Code.

## Outcome of PPR 8

MEPC 76 will consider the following:

### Safety and pollution hazards of chemicals

- Approve the draft amendments to Appendix I of MARPOL Annex II related to the GESAMP Hazard Evaluation Procedure for Chemicals Carried by Ships, 2019.
- Note that the outcome of GESAMP/EHS 57 has been disseminated as PPR.1/Circ.8.
- Concur with evaluation of products included in lists 1, 3 and 5 and cleaning additives in annex 10 of MEPC.2/Circ.26 issued on 1 December 2020.
- Endorse the establishment of a generic entry for "Palm oil mill effluent (POME) technical oil" in list 1 of the MEPC.2 circular on Provisional categorisation of liquid substances in accordance with MARPOL Annex II and the IBC Code.

### Draft guidelines on mitigation measures to reduce risks of use and carriage for use of HFO as fuel by ships in Arctic waters

- To be reviewed by NCSR, SDC and HTW sub-committees who will advise PPR 9 of the outcome.

### The following topics are deferred to MEPC 77:

- Consideration towards approval of draft MEPC resolution on the *2020 Guidelines for exhaust gas cleaning systems* including proposals to amend the definition and technical requirements for phenanthrene equivalent PAH<sub>phe</sub> analysis.
- Consideration towards approval of draft revised MEPC circular on *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 EGCS Guidelines*, for dissemination as MEPC.1/Circ.883/Rev.1.

- Proposal to revise regulation 13.2.2 of MARPOL Annex VI to clarify that a marine diesel engine replacing a boiler shall be considered a replacement engine and consideration of consequential amendments to resolution MEPC.230(65).

## Reports of Other Sub-Committees

(Agenda item 10)

MEPC 76 will focus on the outcomes of SDC 7 and III 6 under this item.

### Outcome of Ship Design and Construction (SDC 7)

**Additional Information**  
Lloyd's Register's [SDC 7 Summary Report](#)

MSC 102 approved draft amendments concerning watertight doors on cargo ships, for the following instruments:

- 1988 LL Protocol
- IBC Code (pending concurrent approval by MEPC 76)
- IGC Code
- MARPOL Annex I

MEPC 76 will consider the following actions:

- Note the aforementioned draft amendments.
- Approve, in concurrence with MSC 102, the draft amendments to the IBC Code, with a view to subsequent adoption at a future session for entry into force on 1 January 2024.
- Note the advice from MSC 102 that the aforementioned draft amendments have no impact on existing ships; that they should be applied to all ships and, therefore, concur with this decision when considering the draft amendments to MARPOL Annex I, Regulation 28, with a view to adoption at a future session for entry into force on 1 January 2024.

### Implementation of IMO Instruments (III 6)

**Additional information**  
Lloyd's Register's [III 6 Summary Report](#)

MEPC 76 will consider the following:

- Justification for and a decision on the inclusion of a new output on "Producing a new entrant training manual for port State control personnel" for voluntary use.
- Justification for and a decision on the inclusion of a new output on "Development of guidance in relation to the IMO Member State Audit Scheme (IMSAS) to assist in the implementation of the III Code".

# Technical cooperation activities for the protection of the marine environment

(Agenda item 11)

MEPC 76 will consider the following activities under this item:

[Update on activities under Integrated Technical Cooperation Programme \(ITCP\), Response Centre for the Mediterranean Sea \(REMPEC\) and Major Projects](#)

- ITCP and REMPEC activities during the period from 1 January to 31 December 2020 included the following areas of work, will be noted:
  - National workshop on implementation and enforcement of MARPOL Annex V and port reception facilities resulting in some 28 national participants trained.
  - National workshop on ratification and effective implementation of MARPOL Annex VI – Initial IMO Strategy on the reduction of GHGs from ships resulting in around 31 national participants trained.
  - Regional webinar on the BWM Convention – Some 69 participants attended a webinar held to give participants an overview of the BWM Convention, discuss exemptions under the Convention, and update them on revisions to the Mediterranean BWM Strategy.
  - Inter-agency consultative mission on the mitigation of risk and oil spill from the FSO SAFER.
  - Deployment of a response expert following an oil leak from the bulk carrier MV Wakashio - Technical advice and recommendations made to the Government of Mauritius.
  - Regional workshop on cooperation in preparedness and response to marine oil spills – Zanzibar, Tanzania.
  - Preparedness, Response and Co-operation to pollution Incidents by Hazardous and Noxious Substances (OPRC-HNS) Protocol - Regional workshop to enhance marine oil and HNS regional cooperation in the Mediterranean (MEDEXPOL 2020).
  - Identification and removal of barriers to countries achieving compliance with ocean disposal agreements.
  - Project Steering Committee (PSCOM) meeting under the ASEAN Maritime Transport Working Group (MTWG) and seven country bilateral meetings to address the COVID-19 challenges.
  - Enhancing the management of marine litter from sea-based sources (GloLitter Project).
  - Guidance on Particularly Sensitive Sea Areas (PSSA) identification and designation in relation to Specially Protected Areas of Mediterranean Importance (SPAMIs).
  - Study on trends and outlook of marine pollution from ships and activities and of maritime traffic and offshore activities in the Mediterranean.
- Some of the revised thematic priorities related to the marine environment for inclusion in the ITCP for the 2022-2023 biennium, subject to MEPC 76 are listed as follows:
  - Assist countries with the implementation of MARPOL, notably Annexes V and VI, and related instruments, and, in particular, the Initial IMO Strategy on reduction of GHG emissions from ships, the consistent implementation of the 0.50% sulphur limit, the IMO Action Plan to address marine plastic litter from ships.
  - Endorse the reinstatement of a dedicated global programme on Reducing atmospheric emissions from ships and in ports, and effective implementation of IMO's Initial GHG Strategy.
  - Strengthening national and regional capacity and fostering regional cooperation for effective and consistent implementation of the BWM Convention, the AFS Convention and the Biofouling Guidelines.
  - Strengthening national and regional capacity and fostering regional cooperation for the ratification and effective implementation of the Hong Kong Convention on Ship Recycling.

- Assist countries with the implementation of the International Convention on Oil Pollution Preparedness, Response and Co-operation and the OPRC-HNS Protocol and enhance regional cooperation in marine pollution preparedness, response and coordination.

## Work programme of the Committee and subsidiary bodies

(Agenda item 12)

MEPC 76 will consider the following topics under this item:

[Proposal for review of the 2014 Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life \(MEPC.1/Circ.833\)](#)

Since the 2014 Guidelines were approved, it is claimed that there have been significant advances in technologies that either directly or indirectly reduce the underwater noise output of a vessel. It is therefore proposed that a review of the guidelines is undertaken to promote uptake and identification of new technology and innovations; considering the work underway on EEDI and GHG and the relationship between energy efficiency technologies with underwater noise emitted from vessels. If approved by MEPC 76, this work output is expected to be undertaken by the SDC sub-committee.

## Any other business

(Agenda item 13)

MEPC 76 will consider the following actions on the topics under this agenda item:

### [Risk assessment of anti-fouling systems](#)

The AFS Convention allows anti-fouling systems to be banned through an amendment to its Annex 1. It is proposed that this decision should be backed by robust risk assessment conducted by using scientific techniques to analyse the hazards, potential for exposure, and adverse effects caused by specific contaminants. Whilst the proposal recognises that the Convention contains the necessary elements to allow for a risk assessment to take place, the specific methodology or guidance for conducting such as assessment is absent. MEPC 76 will therefore invite expressions of interest for a new work output in this area from interested parties.

### [Industry standard on in-water cleaning with capture](#)

MEPC 76 will review a proposal discussing an industry standard on in-water cleaning with capture that was published in January 2021 with a view to having it reviewed by the PPR sub-committee, alongside *2011 Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species* (resolution MEPC.207(62)).

### [Other discussions to be noted](#)

- Status report on FSO SAFER and the Oil Pollution Preparedness Response and Cooperation related technical assistance work carried out by IMO.
- Information on the adoption and implementation of a roadmap for the possible designation of the Mediterranean Sea as an Emission Control Area for Sulphur Oxides pursuant to MARPOL Annex VI.
- A report describing IMO food waste regulation and possible reforms and amendments.



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