



The 82nd session of Marine Environment Protection Committee (hereinafter referred to as MEPC) was convened as a hybrid meeting from 30th September to 4th October 2024 to discuss a wide range of issues under the purview of the Committee. This news flash briefs on the outcomes of MEPC 82 on major technical issues.

Executive summary

The following was agreed at MEPC 82:

- **IMO Mid-term measures to further reduce GHG emission from international shipping**
 - Technical measures are designed that the non-compliant ships using fossil fuels that cannot meet Goal-Based Marine Fuel Standard may comply with the standard by purchasing Surplus Compliance Units from the ships using alternative fuels with low GHG emissions or GHG Remedial Compliance Units from GFS Registry with the predetermined price, and ships using alternative fuels with low GHG emissions can receive incentives to compensate for the capital expenditure put into new building construction and the price gap between alternative fuels and fossil fuels.
 - But, in calculating the attained GHG Fuel Intensity (GFI), it was not decided whether to consider the marine fuel's lifecycle GHG emissions (Well-to-Wake basis) according to LCA guidelines or onboard GHG emissions (Tank-to-Wake basis). In addition, it was not decided whether to introduce a separate levy to be paid per tonne of GHG emission as an economic measure in addition to the trading/purchase of GHG credits or not.
 - For continuing the development of the Mid-term measures, MEPC 82 agreed to hold two times inter-sessional working group ahead of MEPC 83, i.e., 17 - 21 February 2025 (full 5-days) and 2 days a week before MEPC 83 to be held in April.
- **Review of short-term measures (Carbon Intensity Indicator, CII)**
 - For reviewing the short-term measures, the relevant data on CII metrics, Correction factors and voyage adjustments, Enhancement of the enforcement mechanism, Enhancement of IMO DCS, Revision of the CII reduction factors, etc. have been collected.
 - But, to assess the effectiveness of the CII framework with the sufficient implementation data, two-step approach (first: CII reduction rate and correction factors and second: substantial modification of CII implementation framework) was agreed.
 - Moreover, MEPC 82 further agreed to establish a Correspondence Group and an Intersessional Working Group (ISWG, for 3 days a week before MEPC 83) to conduct the review of short-term measures in detail.
- **Res.MEPC.392(82)** - Canadian Arctic Water and Norwegian Sea Area as ECAs
- **Res.MEPC.393(82)** - Best practice on recommendation to reduce Black Carbon emissions
- **Res.MEPC.394(82)** - Guidelines on Black Carbon emission measurement, monitoring and reporting
- **Res.MEPC.395(82)** - Revision to SEEMP related guidelines in relation to the data granularity
- **Res.MEPC.396(82)** - Nusa Penida Islands and Gili Matra Islands in Lombok Strait of Indonesia (PSSA)

- [MEPC.1/Circ.590/Rev.1](#) - Revised tank cleaning additives guidance note and reporting form
- [MEPC.1/Circ.906/Rev.1](#) - Revised guidelines for the reduction of underwater noise from shipping
- [MEPC.1/Circ.913](#) - Unified interpretation in relation to the revised IMO DCS framework
- [MEPC.1/Circ.914](#) - Revision to the sample format for the Confirmation of Compliance
- [MEPC.1/Circ.915](#) - Measures to reduce risks of use/carriage of HFO as fuel by ships in Arctic water
- [BWM.2/Circ.43/Rev.2](#) - Approval of modifications to BWMS with existing type approval
- [BWM.2/Circ.80/Rev.1](#) - Revised guidance for completing the BWRB (CWQ operation)
- [HKSRC.2/Circ.1](#) - The implementation of the Hong Kong and Basel Convention
- [AFS.3/Circ.6](#) - Best management practices for removal of anti-fouling coatings from ships

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

1.1 Basket of candidate mid-term measures to further reduce GHG emission from international shipping

Last MEPC 81 agreed on an illustration of how an “IMO Net-Zero Framework” as amendments to MARPOL Annex VI on legal implementation of IMO Mid-term measures could be set out as follows:

1. Chapter 1 (Definitions);
2. Chapter 2 (Survey, Certification and Port State Control);
3. Chapter 4 (SEEMP and Data collection);
4. A new Chapter 5 (Regulations on the IMO net-zero framework) including sub-chapters on:
 - Goal-based marine fuel standard with the phased reduction of the marine fuel’s GHG intensity;
 - Economic elements to incentivize the transition to net-zero.
5. Appendices (forms of certification)

In addition, an informal meeting to develop a consolidated draft text that includes all proposals for amendments to MARPOL Annex VI submitted so far and structure of the IMO net-zero framework was held in Bonn, Germany, on 8 and 9 June 2024, which will be used as a base document for further consideration at ISWG-GHG 17 and MEPC 82. In developing a consolidated text of MARPOL Annex VI for implementation of IMO Mid-term measures, ISWG-GHG 17 and MEPC 82 continued to consider the outstanding elements contained in the proposed basket of candidate mid-term measures as follows:

Framework	Key functions
GHG Fuel Standard with a flexible mechanism and a GHG pricing mechanism	<ul style="list-style-type: none"> ● Applying the GHG reduction targets (annual reduction for 2027 to 2035, 2040, 2045 and 2050) from the 2023 revised Strategy to establish a GHG emissions pathway in absolute terms. ● The attained GFI (GHG Fuel Intensity) will be calculated based on the WtW GHG emissions, as defined in the LCA Guidelines. It also includes a remedial action that allows ships that cannot operate on low-GHG fuels to continue to operate, by using the Surplus Compliance Units (SCU)¹ or Remedial Compliance Units (GCU)². ● The universal GHG contribution of \$100 per tonnes of CO_{2eq} was proposed and the uptake of zero or near-zero GHG fuels which

¹ Over-compliant ships earn rewards by selling the units to non-compliant ships

² Non-compliant ships buy GHG Remedial Units at a certain price from GFS Registry as a last resort compliance option

	<p>emit less than 10 gCO_{2eq}/MJ will be subject to the incentives.</p>
<p>International Maritime Sustainable Fuels and Fund (INSF&F) mechanism</p>	<ul style="list-style-type: none"> ● IMSF&F is to set up a required limit to the TtW³ GHG intensity indicator of fuels/energy used onboard ships (required GFI, in gCO_{2eq}/MJ) and WtT⁴ value will be considered as an adjustment factor to incentivize the ships using zero or near-zero GHG fuels. ● It also provides a flexible mechanism allowing the transaction of Surplus Units (SU) between ships in a compliance pool. Non-compliant ships can obtain Remedial Units (RU) through monetary contributions to the Sustainable Shipping Fund (SSF). ● Under this framework, the application of an independent levy is not required to avoid double taxation.
<p>Universal mandatory GHG Levy with a simplified Global GHG Fuel Standard</p>	<ul style="list-style-type: none"> ● A carbon levy (\$ 150) to be introduced in 2027 based on well-to-wake CO_{2eq}, in accordance with the 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 to further reduce or eliminate the price gap between fossil fuels and low- and zero-GHG technologies and fuels. ● Flexibility mechanisms such as credit trading SCU/GCU units, pooling and FONAR are not accepted under this framework.
<p>Simplified Global GHG Fuel Standard with Pooling⁵ Compliance mechanism</p>	<ul style="list-style-type: none"> ● The 5% reduction in GFI for 2030 and 30% reduction in GFI for 2040 were proposed, subject to the review of alternative fuel availability to be undertaken by 2028 which is similar with the approach used for the IMO 2020 sulphur limits. ● A flat rate contribution (\$18.75 per tonne of CO_{2e} emitted, equivalent to about \$60 per tonne of conventional fuel) from ships as part of a fund and a reward (\$100 per tonne of CO_{2e} prevented) and the need to narrow the price gap between alternative and conventional fuels via a rewards programme for CO_{2eq} or GHG emissions prevented by ships using eligible alternative fuels were proposed. ● The simplified GFS does not involve any financial penalties for non-compliance with the required GFI, while it includes provisions for an “energy pooling compliance mechanism” that may be used on a voluntary basis by ships to comply with the GFS. ● Bunker Delivery Note (BDN) can be used as a basis for compliance

³ Tank-To-Wake(Propeller) emissions factor, also known as downstream or direct emissions, is an average of all the GHG emission released into the atmosphere from a fuel consumption to operate a ship.

⁴ Well-To-Tank emissions factor, also known as upstream or indirect emissions, is an average of all the GHG emissions released into the atmosphere from the production, processing and delivery of a fuel or energy vector.

⁵ The mechanism would permit a ship, or ships, which 'over-comply' with the required GFI - operated by the same or different companies and registered with one or more flag states - to share the 'excess' required GFI with another ship or ships in the 'pool' that may be unable to comply fully with the requirement.

	<p>with the required GFI for individual ship. Under this scheme, a ship not able to purchase compliant fuel oil to meet the required GFI is allowed to consider FONAR (Fuel Oil Non-Availability Report) system.</p>
<p>Green Balance Mechanism (GBM)</p>	<ul style="list-style-type: none"> ● Green Balance GFI to enable the use of green fuel, based on a GFI reference line which is aligned with IMO’s net-zero endpoint, was proposed. ● Incentivization and penalization would be determined by the performance of a ship relative to the GFI and Green Balance GFI reference line. The GBM would use WtW calculations to establish the attained GFI value for the reporting period and allows for the use of flexible compliance mechanisms or pooling of ships. ● Under this framework, the application of an independent levy is not required. Payment into, and allocation from, the Fund would be proportional to the GHG reduction achieved as follows: <ul style="list-style-type: none"> - Ships which have an attained GFI equal to, or less than 65% reduction from the reference GFI would be required to contribute into the green balance fund; - Ships with an attained GFI values equal to or better than 65% reduction from the reference GFI, but less than 80% reduction, will receive a green balance allocation from the green balance fund; - Ships with an attained GFI value equal to or better than 80% reduction from the reference GFI will also receive a higher level of green balance allocation.

ISWG-GHG 17 and MEPC 82 have continued developing “IMO Net-Zero Framework” as amendments to MARPOL Annex VI on legal implementation of IMO Mid-term measures for the purpose of incorporating into one single text and agreed following outstanding elements:

1. **Applicability of Mid-term measures:** it applies to all ships of 5,000 GT and above. But, subject to a review of implementation of Mid-term measures, it may be extended to ships of 400 GT and above.
2. **Technical measures:** Marine Fuel Standard (GHG Fuel Intensity expressed in gCO_{2e}/MJ)
 - While the uptake of alternative fuels needs to be introduced in the international shipping to meet Goal-Based Marine Fuel Standard as a technical measure, an Alternative Compliance Mechanism which enables non-compliant ships using fossil fuels to be continuously operated will be introduced.
 - It was designed that the non-compliant ships using fossil fuels that cannot meet Goal-Based Marine Fuel Standard may comply with the standard by purchasing Surplus Compliance Units from the ships using alternative fuels with low GHG emissions or GHG Remedial Compliance Units from GFS Registry with the predetermined price, and ships using alternative fuels with low GHG emissions can receive incentives to compensate for the capital expenditure put into new building construction and the price gap between alternative fuels and fossil fuels.
 - Moreover, a Pooling compliance allowed for non-compliant ships by teaming up with over-compliant ships will be introduced, this mechanism would permit over-compliant ships to share

their emission credits with non-compliant ships in the same pool.

3. Economic measures: GHG levy or contribution per tonne of CO_{2e}

- There were many supports for inclusion of an economic measure in the “IMO Net-Zero Framework” to promote and incentivize the energy transition of international shipping.
- With respect to a form of collection of payments and distribution of revenues collected from GHG pricing mechanism, it was agreed on the need to further work on a framework for the disbursement of revenues (e.g. financial structure of disbursement: grants, concessional loans, etc., eligibility criteria for activities and/or projects, etc).
- There was a preference for the establishment of a fund under the remit/oversight/kept within the structure of the Organization, and it was agreed on the need to work upon the basic functions of a fund, as well as the establishment of a governance structure to oversee the Fund’s activities that is geographically balanced, given the experience from other international organizations regarding fund governance.

However, it could not be reached on a consensus on the following point at issues:

1. Technical measures

- Of the following methods, there was no agreement on how to calculate the attained GHG Fuel Intensity (GFI) of individual ship:
 1. Calculation of individual ship’s GHG Fuel Intensity (GFI), taking into account the marine fuel’s lifecycle GHG emissions (Well-to-Wake basis) according to LCA guidelines;
 2. Applying a correction factor for ships servicing eligible ports of developing countries that are expected to be negatively impacted by the mid-term measures to the individual ship’s GHG Fuel Intensity calculated based on onboard GHG emissions (Tank-to-Wake basis); or
- Calculation methodology to determine the reduction factor and whether and how to address “strive” values which were defined in the indicative checkpoints of the 2023 revised GHG strategy (30% reduction by 2030 and 70% reduction by 2040) in this calculation; and
- The determination of the time period for reduction step (individual year or five-year periods).

2. Economic measures

- Possible approaches to generate revenue (e.g., a mandatory predictable financial contribution or revenue raised as a by-product from the acquisition of GFI remedial units). This means whether to introduce a separate levy per tonne of GHG emission as an economic measure in addition to the trade/purchase of GHG credits permitted by alternative compliance mechanism;
- The methodology to determine an appropriate GHG price/contribution rate and whether it should be phased or adjusted over time;
- The application scope of the economic element in terms of ship sizes and emissions (e.g., WtW or TtW GHG emissions); and
- The necessity of associating a trustee with the management of the fund.

The discussions to develop Mid-term measures for further reducing GHG emissions from international shipping will be continued by future ISWG-GHG and MEPC meeting, and the disbursement of the revenues which will be generated through the economic measures and establishment of a Fund will also be holistically discussed. In order for continuing the development of the Mid-term measures, MEPC 82 agreed to hold two times inter-sessional working group ahead of MEPC 83, i.e., 17 - 21 February 2025 (full 5-days) and 2 days

a week before MEPC 83 to be held in April.

Draft amendments to MARPOL Annex VI for implementation of Mid-term measures will be approved at MEPC 83 which will be held on the first half of 2025, and then after adoption of those amendments by extra session of MEPC which will be held in the latter half of 2025, it will enter into force in 2027.

1.2 Comprehensive impact assessment of the basket of candidate GHG reduction mid-term measures

The 2023 IMO GHG Strategy outlines that impacts on States of a measure/combination of measures should be assessed and taken into account as appropriate before adoption of the measures, in accordance with the Revised procedure on assessing impacts on State of candidate measures (MEPC.1/Circ.885/Rev.1), and previous MEPC 80 approved the terms of reference and arrangements for conducting a comprehensive impact assessment of the basket of candidate GHG reduction mid-term measures.

In this regard, MEPC 82 approved the final report of comprehensive impact assessment containing the following outstanding elements:

1. Task 1, Literature review: the analysis showed that a wide range of technologies (wind, solar, biofuels, hydrogen, methanol, ammonia, synthetic fuel and battery) could help reducing the GHG emissions from shipping, highlighting that a phased increase in carbon pricing rates, e.g. from \$75 per tonne CO₂ in 2030 and \$150 per tonne in 2040, could drive substantial CO₂ reductions but slightly raise shipping costs;
2. Task 2, Assessment of the impacts of the basket of candidate measures on the fleet: the study defines two well-to-wake GHG emission trajectories to 2050 according to the *Base* and *Strive* goals in indicative checkpoints, and the IMO GHG Strategy's level of ambition to reach net-zero GHG emissions by 2050;
3. Task 3, Assessment of the impacts of the basket of candidate measures on States: the study defines the impacts of three different hypothetical revenue disbursement scheme collected through the mid-term measures, (1) with revenues disbursed to all States, (2) with revenues disbursed to developing economies, SIDS and LDCs only, (3) with revenues disbursed exclusively to SIDS and LDCs as well as one intermediate scenario without any revenue disbursement;
4. Task 4, Complementary qualitative/quantitative stakeholders analysis, including relevant illustrative case studies: the study examines costs and timing due to ship-side and ocean transit time and economic impact implications on 39 actual commodities shipped to or from 10 different countries on selected trade routes. For each of the 39 commodity case studies, it provide the separate and combined ship-side (CAPEX, OPEX, carbon capture and control, regulatory costs) and cargo-side (cargo volume, ad valorem rate, longer transit times, distance to market) cost changes.
5. Task 5, Identification of areas of missing data, quality assurance and quality control (QA/QC), uncertainty and sensitivity analyze and integration between various tasks: the study defines

Given the comprehensive impact assessment reports on task 3 above had not addressed the potential impacts of the basket of candidate mid-term measures on food security in detail, MEPC 82 agreed to carry out supplementary work on assessing the potential impacts on food security, in particular on essential food commodities and critical agricultural input, notably in net food importing developing countries. And the Committee also agreed to organize a one-day GHG-Expert Workshop (GHG -EW 6) to facilitate the understanding of the possible impacts of the basket of candidate measures on food security.

1.3 5th IMO GHG Study

While MEPC 82 considered the following possible terms of reference of the GHG Study and timelines, due to the various views as to whether the analysis of the relationship between maritime emissions and nature of traded goods should be carried out and the analysis of relevant fuel/technology projections should be included in the study etc., the Committee agreed to further consider this matter at next MEPC 83.



1. GHG emission inventories: annual GHG emission estimates for the year 2008 (baseline) and 2018-2024, using emission factors consistent with the LCA Guidelines (for both Tank-to-Wake and Well-to-Wake emissions);
2. Estimates of carbon intensity: given a goal to achieve 40% reduction of carbon intensity by 2030, the progress towards that goal by providing carbon intensity estimates for 2008 and 2018 to 2025;
3. Projection of future GHG emissions: progress towards the achievement of the levels of ambition and indicative checkpoints set out in the 2023 revised IMO GHG Strategy by providing updated emission projections for the period 2025-2050 with projection for both TtW and WtW emissions, as well as updated maritime transport demand projections and associated energy consumption projections of the world fleet; and
4. Timelines
 - MEPC 83 to approve terms of reference of the study;
 - MEPC 84 to consider an interim report on the 5th IMO GHG Study;
 - MEPC 85 to consider the final report on the 5th IMO GHG Study with a view to approval.

2. Air Pollution and Energy Efficiency (Agenda 5 and 6)

2.1 Measures to reduce the impact on the Arctic of Black Carbon emissions from international shipping

MEPC 82 adopted the following Guidance and Guidelines in relation to the reduction of black carbon emissions in the Arctic water:

- Res.MEPC.393(82) *Guidance on best practice on recommendatory goal-based control measures to reduce the impact on the Arctic of Black Carbon emissions from international shipping*. The guidance particularly provides a series of technologies which can be deployed by ships operating in the Arctic water to reduce black carbon emissions. The appendix of this guidance also provides “Technology options, measures, applicability and other considerations for black carbon emission reduction for existing ships”.
- Res.MEPC.394(82) *Guidelines on recommendatory Black Carbon emission measurement, monitoring and reporting*. These guidelines encourage ships installed with marine diesel engines with a power output of more than 130 kW to report the black carbon emissions data to their Administration annually which will be forwarded to the IMO.

2.2 Editorial corrections to the 2021 EGCS Guidelines

MEPC 82 agreed to issue a corrigendum to modify paragraphs 7.2.4 and 7.2.6 of the 2021 EGCS Guidelines (Res.MEPC.340(77)) as follows:

- “7.2.4 recording the aggregated time in excess of 15 minutes over any rolling 12-hour period that the differential PAH value is above the set limit value by **not** more than 100%;
- ...
- 7.2.6 recording the aggregated time in excess of 15 minutes over any rolling 12-hour period that the rolling average differential turbidity value is above the set limit by **not** more than 20%.”

2.3 Amendments to MARPOL Annex VI and NOx Technical Code 2008 concerning the use of multiple engine operational profile for a marine diesel engine

MEPC 82 approved draft amendments to MARPOL Annex VI and NOx Technical Code 2008 concerning the use of Multiple Engine Operational Profile⁶ (MEOP) for a marine diesel engine, with a view to adoption by MEPC 83.

It has been identified that while the engine operational profile would be considered as engine tuning for optimizing fuel consumption, it could also increase NOx emissions from the operation of marine diesel engine. To ensure that NOx emissions do not exceed the limit values referred to in regulation 13 of MARPOL Annex VI at all operating load points of the marine diesel engines which have multiple engine operational profile, the need to amend MARPOL Annex VI and NOx Technical Code 2008 has been raised. From this perspective, the amendments on the use of MEOP including clarifying the engine test cycles were prepared to allow for multi-operational profiles for marine diesel engine and will apply to individual marine diesel engine or an engine group/family on or after the date of entry into force of the amendments. The emissions at additional load points (beyond the current four load points according to NOx Code test cycles) will be required to be demonstrated, as the emissions in “not-to-exceed zones⁷” need to be verified. The engine designer clearly needs to document “auxiliary control devices”, which are functions or control strategies to protect the engine and/or its ancillary equipment against operating conditions that could result in damage or failure.

The amendments further clarify that the engines installed in existing ships are not subject to the amendments, except in the case of substantial modifications. For the engines installed onboard ships constructed before 1 January 2000, the amendments apply to engine which undergo a substantial modification. However, for the engine installed onboard ships constructed on or after 1 January 2000, the amendments apply to the engine which undergo a substantial modification if an auxiliary control device is used and/or the engine has multiple operational profile.

2.4 Amendments to NOx Technical Code 2008 concerning re-certification of an engine subject to substantial modification

MEPC 82 approved draft amendments to NOx Technical Code 2008, defining the procedures and the emission tests to be conducted for existing engines after the retrofitting of modern engine technologies which improve the energy efficiency whilst maintaining the levels for NOx emission regulations, along with

⁶ Engine Operational Profile means a particular set of NOx influencing settings applied in the base emission control strategy which influences the NOx emission performance. Those settings may relate to, but are not limited to, fuel injection, inlet and exhaust valve operation, charge air management, exhaust bypass/wastegate or exhaust after treatment controls and auxiliary control devices.

⁷ Not-to-exceed zone means the power or torque and speed area of a marine diesel engine within the limit area of the not to exceed zone as declared by the applicant that the engine is certificated to operate within under steady state conditions.

a flowchart illustrating the certification process for an engine subject to substantial modification, with a view adoption by MEPC 83. Moreover, an additional MEPC Circular document will be approved before the entry into force of these amendments to provide guidance as to the extent and detail of information to be included in the Engine Emission Test Plan, which would be beneficial to both Administrations and applicants in outlining the planning required prior to an onboard Engine emission test and thereby assisting in an uniform application of the process.

The relevant examples of retrofit include, but are not limited to, retrofits of the engines for dual fuel or multi-fuel operation, i.e. operation on alternative fuels, extensive derating of engines, cut-off of turbochargers or complete engine cylinders or retrofit of new NO_x abatement technologies to optimize fuel consumption.

2.5 Review of short-term measures (reducing carbon intensity from international shipping)

Regulation 28.11 of MARPOL Annex VI requires that a review shall be completed by 1 January 2026 to assess the effectiveness of the regulations in reducing the carbon intensity on international shipping, the need for reinforced corrective actions or other means of remedy, the need for enhancement of the enforcement mechanism, the need for enhancement of the data collection system, and the revision of the CII reduction rates. In this respect, last MEPC 80 agreed the timeline required for conducting the review of short-term measures as follows:



Source: IMO

1. Data gathering stage: from MEPC 80 to MEPC 82;
2. Data analysis stage: Working Group at MEPC 82 to be continued by a Correspondence Group; and
3. Convention and Guidelines review stage through an Intersessional Working Group between MEPC 82 and MEPC 83 as well as a Working Group at MEPC 83.

The data submitted and collected by MEPC 82 on the implementation short-term measures are as follows:

1. CII metrics
 - Implication of operational factors on the CII metric. It emphasizes the need for consideration of the implication of operational factors, in particular port waiting time, on the CII metrics
 - Alternative metric for cruise passenger ships, ro-ro cargo and ro-ro passenger ships. It provides information on the development of an alternative metric for these ship types
 - Transport work proxy. It provides information on a study on the comparison between the carbon intensity of ships calculated based on the DWT/GT and the actual cargo carried as a transport work
 - Energy-based metric. It proposes the development of a new “energy-based” CII metric that may only be met with reduced energy use (e.g. MJ/t-mn), e.g. without using alternative fuels with lower carbon content
2. Correction factors and voyage adjustments
 - Port waiting time. It proposes the development of a voyage adjustment for port waiting time with the analysis of the impact of port waiting time on the attained CII
 - Fleet compliance option. It proposes the development of a fleet compliance option, which would allow ship operators to offset D or E ratings against ships which have better ratings
 - Short voyages. It proposes the development of a correction factor for short voyages with

- analysis of short voyages on the attained CII
 - Ship loading condition. It analyzes the impact of ship loading condition on the attained CII
 - Adverse weather conditions. It proposes development of a voyage adjustment for adverse weather
 - Correction factors for specific ship types (LNG Carrier for electrical consumption for cargo transfer and BOG management, Inert gas generators onboard tankers, cargo cooling onboard refrigerated cargo carriers, self-unloading bulk carrier involved in ship-to-ship transfer and transshipment (shuttling) services, etc)
3. Reinforced corrective actions or other means of remedy. It means the analysis of general awareness and experience with the SEEMP as a tool to assist in managing ships' energy efficiency performance and analysis of specific experience with developing an "implementation plan" and/or a "plan of corrective action" as part of the SEEMP.
 4. Enhancement of the enforcement mechanism. It means to consider whether adjusted CII metrics may potentially allow more targeted enforcement measures, the possibilities to enhance the ability of PSC to enforce the short-term measure and possible enforcement mechanisms other than PSC with respect to the SEEMP (e.g. ISM Code or ISO 50001 series (Energy Management)).
 5. Enhancement of the Data Collection System. It means to consider whether further enforcements of the IMO DCS are needed, if so, whether other data collection and reporting mechanisms may support the review of the short-term measures, e.g. reporting with ports on arrival times.
 6. Revision of the CII reduction factors. It means to consider whether reviewing the annual CII reduction factors as set out in the G3 guidelines should be initiated, whether potential changes to the metrics would require adjustments to the CII reduction factors.

Given that the sufficient implementation data is necessary to assess the effectiveness of the CII framework, MEPC 82 agreed the following two-step approach to conduct the review of short-term measures:

1. First step: aiming to agree on reduction factors for the year 2027 to 2030, as well as potentially minor adjustments to the CII (as correcting manifest errors and correction factors on port waiting time and short voyage, etc) to be completed by 1 January 2026; and
2. Second step: to assess major adjustments (as substantial modification of CII implementation framework, change in the metric itself, splitting the indicator into an in-port and an under way component, moving to an energy-based metric and potential change of enforcement regime) starting in 2026, given the IMO GHG Mid-term measures, three years of CII reporting, the continuity of the measure after 2030 and the path towards the 2030 objectives of the 2023 IMO GHG Strategy.

Moreover, MEPC 82 agreed to establish a Correspondence Group and an Intersessional Working Group with following terms of references to conduct the review of short-term measures in an efficient manner:

Terms of reference for a Correspondence Group and an Intersessional Working Group (ISWG, before MEPC 83 i.e. end of March 2025):

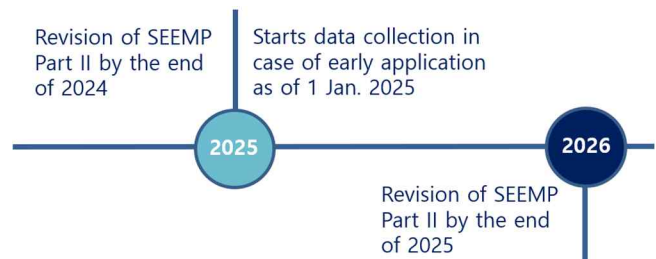
1. Further consider possible options to address the identified challenges/gaps in the short-term GHG reduction measure; and
2. Develop draft amendments to existing instruments and/or develop new instruments, as appropriate.

2.6 Unified Interpretation to MARPOL Annex VI in relation to the revised IMO DCS framework

While last MEPC 81 adopted Res.MEPC.358(81) containing draft amendments to MARPOL Annex VI concerning the accessibility of the data in the IMO Ship Fuel Oil Consumption Database (IMO DCS), inclusion of data on transport work and enhanced level of granularity in the IMO DCS, it was further agreed to invite the early application of these amendments from 1 January 2025.

In this regard, MEPC 82 approved MEPC.1/Circ.913 containing a unified interpretation clarifying that:

1. Given the revised IMO DCS framework for data granularity will enter into force in August 2025 but the framework is being implemented throughout the collection and reporting over a calendar year, all data portions for the same calendar year are to be collected and reported at the same level of granularity. Namely, unless expressly provided otherwise by the Administration, the data with granularity should be collected as of 1 January 2026; and
2. SEEMP Part II providing the ship-specific methodologies for collecting fuel oil consumption data should be revised to collect the data with granularity prior to collecting data specified in appendix IX of MARPOL Annex VI as amended by Res.MEPC.385(81). This means that is case where the Administration requires to implement the data granularity as of 1 January 2025, the SEEMP Part II should be revised by the end of 2024.



2.7 Revision to SEEMP related Guidelines and Appendix IX of MARPOL Annex VI in relation to the data granularity

Given that consequential updates to the standardized data-reporting format for the data collection system and operational carbon intensity (appendix 3 of the SEEMP Guidelines) were inadvertently missed during the finalization of the amendments to appendix IX of MARPOL Annex VI (Res.MEPC.385(81)), MEPC 82 adopted Res.MEPC.395(82) containing the amendments to the SEEMP Guidelines which was updated to be in line with the amendments to MARPOL Annex VI derived from the IMO DCS data granularity;

Furthermore, in case a ship changes its flag in the middle of a calendar year, regulation 27 (IMO DCS) requires that the respective data under each flag is reported to each flag State for separate reporting to the Organization, while regulation 28 (CII) requires that the gaining flag Administration reports the aggregated data of the whole calendar year. However, the format given in appendix IX does not distinguish this difference. Thus, MEPC 82 approved draft amendments to appendix IX of MARPOL Annex VI to explicitly specify the data collection period after flag change with a view to adoption at MEPC 83.

2.8 The availability of bio marine fuels at ports in GISIS

Given the emerging necessity for the use of bio marine fuels in the international shipping, MEPC 82 agreed to revise the current IMO GISIS (Global Integrated Shipping Information System) module “MARPOL Annex VI, regulation 18.1” to include information on the availability of bio marine fuels at ports.

The screenshot shows the IMO GISIS: MARPOL Annex VI interface. It displays a navigation menu with 'Reg. 4.2', 'Reg. 11.4', 'Reg. 13.7.1', 'Reg. 13.2', 'Reg. 17.2', 'Reg. 17.3', 'Reg. 18.1', and 'Reg. 18.2'. The main content area is titled 'Regulation 18.1 Fuel oil availability'. Below this, there is a dropdown menu for 'Display notifications from: Republic of Korea'. A table lists various flag states with columns for 'Flagging Party', 'Port/terminal', and 'Date of notification'. The table includes entries for Republic of Korea, Oman, and others.

Flagging Party	Port/terminal	Date of notification
Republic of Korea	Sokcho, Republic of Korea (KRSOCH)	
Republic of Korea	Omsan, Republic of Korea (KRONOS)	
Republic of Korea	Samcheok (ex Samcheok), Republic of Korea (KRSJOK)	
Republic of Korea	OKayo, Republic of Korea (KROKYO)	
Republic of Korea	Gunsan (ex Kunsan), Republic of Korea (KRGUNV)	
Republic of Korea	Taejeon, Republic of Korea (KRTSJE)	
Republic of Korea	Misan, Republic of Korea (KRMISA)	
Republic of Korea	Mokpo, Republic of Korea (KRMPOK)	

Source: IMO

2.9 Revision to the sample format for the Confirmation of Compliance (MEPC.1/Circ.876)

A confirmation of compliance for the approval of SEEMP Part II has been issued to the ships of 5,000 GT and above due to the implementation of the IMO DCS requirements which were entered into force on 1 March 2018. However, the sample format in MEPC.1/Circ.876 still refers to regulation 22.2 of MARPOL Annex VI, which was re-numbered as regulation 26.2, with the entry into force of the amendments to MARPOL Annex VI effective from 1 November 2022 in relation to the implementation of IMO GHG short-term measures (EEXI and CII).

Thus, MEPC 82 approved MEPC.1/Circ.914 providing the revised sample format for the Confirmation of Compliance to update the reference to regulation 26.2 of MARPOL Annex VI in the CoC, as well as the changes of the reference to the 2022 Guidelines for the development of a SEEMP (Res.MEPC.346(78)) instead of the 2016 Guidelines for the development of a SEEMP (Res.MEPC.282(70)).

3. Ballast Water Management Convention (Agenda 4)

3.1 1 Final Approval was granted

- HiBallast 2.0™ BWMS (Republic of Korea)

3.2 1 Final Approval was not granted

- OceanGuard® Sim BWMS (Denmark)

3.3 Type approved BWMSs reported to MEPC 82 (total 1 unit)

- EcoGuardian NF™ BWMS (Liberia) which was type approved in accordance with BWMS Code adopted by resolution MEPC.300(72).

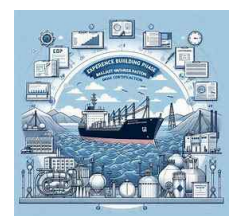
3.4 Modifications to BWMS after type approval

MEPC 82 approved BWM.2/Circ.43/Rev.2 containing the revised Guidance for Administrations on the type approval process for BWMS aimed to support approval of modifications to a BWMS with existing type approval. The revised guidance clarifies:

1. Various documents and/or materials to be prepared by BWMS manufactures for modifications to a BWMS with existing type approval such as a clear description of the BWMS modifications and technical information to support an evaluation of the appropriateness of the modification;
2. Process for evaluation of modifications to a BWMS with an existing type approval and its flow chart;
3. Definition of “major component (TRO or relevant sensor, Electrolysis chamber, Electrolysis cell, Filter, UV Chamber, UV intensity and transmittance sector)” and “non-major component (pumps, valves, common electrical components (fuses, circuit breaker), differential pressure sensor / temperature sensor)”, etc.

3.5 Experience Building Phase (EBP) and Convention Review Plan (CRP) under the BWM Convention

MEPC 82 continued the work with a view to drafting of amendments to the relevant provisions in BWM Convention proposed for revision and/or development in accordance



with a Convention review plan as follows:

BWM Convention provision	Revision and/or development
Regulation A-3 (Exceptions)	<ul style="list-style-type: none"> Amendments to regulation A-3.4 for allowing circumstances when the ship will discharge unmanaged or partially managed ballast water and sediments on the high seas (challenging water quality, contingency measures and/or PSC requirement on BWE+BWT)
Regulation B-1 (BWMP)	<ul style="list-style-type: none"> Amendments to identify ships with BWMS that are type approved in accordance with the BWMS Code as opposed to older version of the G8 guidelines, create a standardized BWMP template and add a new requirement that ships plan for contingency measures, etc.
Regulation B-2 (BWRB)	<ul style="list-style-type: none"> Amendments to add a new requirement that a BWMS maintenance log be added to the BWRB, reflecting the OEM manual and maintenance schedule and be kept updated and signed by crew involved in each action
Regulation B-6 (Duties)	<ul style="list-style-type: none"> Amendments to add a new requirement for crew familiarization of BWMS
Regulation D-2 (Ballast performance standard)	<ul style="list-style-type: none"> Amendments to establish a maximum allowable discharge concentration (MADC) for BWMS that use active substances, to ensure that in-service ships regularly discharge effectively neutralized ballast water, for BWMS utilizing active substances
Regulation D-3 (Approval of BWMS)	<ul style="list-style-type: none"> Amendments to create a new requirement that any type approved BWMS installed on a ship to meet the D-2 standard shall be maintained in good working order
Regulation E-1 (Surveys)	<ul style="list-style-type: none"> Amendments to include a requirement that annual surveys confirm required maintenance has been undertaken by verifying the BWRB, including the ballast water maintenance log. A requirement for a biological efficacy test (sampling and analysis) to be undertaken as part of intermediate and renewal surveys

MEPC 82 agreed to continue the correspondence group activity with a view to developing amendments to the relevant provisions in BWM Convention and associated instrument for revision and/or development as above. In addition, it is to be noted that a final report of the correspondence group will be submitted to MEPC 83, and then draft amendments to BWM Convention and its associated instruments will be approved by MEPC 84 (Spring 2026) and adopted by MEPC 85 (Autumn 2026).

3.6 Amendments to BWM.2/Circ.80 to provide guidance for completing the ballast water record book

Last MEPC 81 adopted Res.MEPC.387(71) on *Interim guidance on the application of the BWM Convention to ships operating in challenging water quality conditions*, while BWM.2/Circ.80 providing guidance on completing the revised format of ballast water record book does not include the detailed guidance on how to complete the record book in cases where the ships operate in ports area having challenging water quality.

In this regard, MEPC 82 approved BWM.2/Circ.80/Rev.1 providing the concrete examples for recording CWQ operations and its contingency processes. The revised recording guidance clarifies how to complete the ballast water record book when encountering challenging water quality under the sequence of events

such as ballast uptake, interruption due to water quality, BWMS bypassed and uptake of minimal ballast water, BWMS repaired, remaining ballasting at nearby location, Exchange + Treatment undertaken with tank flushing as well as discharge of ballast water at receiving port.

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

4.1 Amendments to MARPOL Annex VI designating Canadian Arctic Water and Norwegian Sea Area as Emission Control Areas (ECAs)

MEPC 82 adopted Res.MEPC.392(81) containing draft amendments to regulations 13, 14 and appendix 7 of MARPOL Annex VI to designate the Canadian Arctic Water and the Norwegian Sea Area as Emission Control Areas (ECAs). These amendments will enter into force on 1 March 2026, and provide the following NOx and SOx requirements for ships operating in the regions:

1. Canadian Arctic Water
 - Tier III NOx requirements shall apply to the ships constructed on or after 1 January 2025 and operating in Canadian Arctic Water.
 - 0.1% m/m sulphur requirements shall apply to the ships operating in Canadian Arctic Water on or after 1 March 2027.
2. Norwegian Sea Area
 - Tier III NOx requirements shall apply to the ships constructed on or after 1 March 2026⁸ and operating in Norwegian Sea Area.
 - 0.1% m/m sulphur requirements shall apply to the ships operating in Norwegian Sea Area on or after 1 March 2027.

These amendments, considering that Tier III NOx standard in Norwegian Sea Area follows the three-date criteria, also provide the revised format of supplement to IAPP Certificate to further state building contract date and delivery date of the ships.



Figure 1 Proposed Canadian Arctic water ECA Boundary

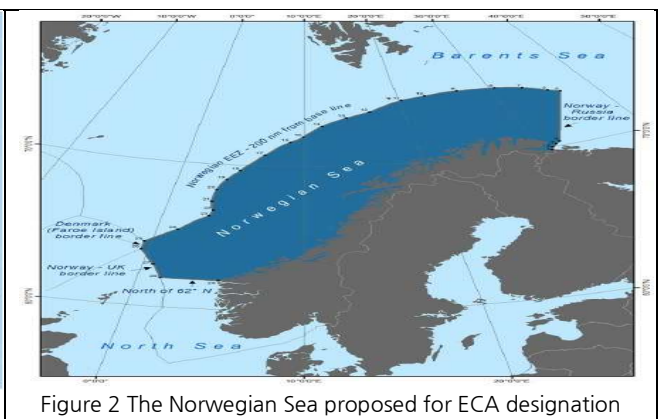


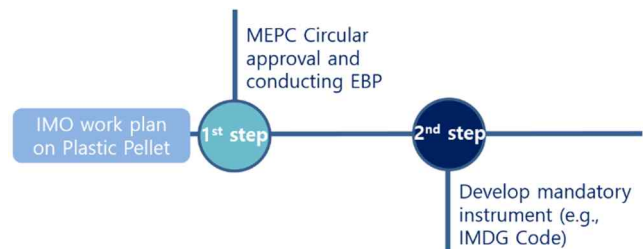
Figure 2 The Norwegian Sea proposed for ECA designation

⁸ Ship constructed on or after 1 March 2026 means a ship:
 .1 for which the building contract is placed on or after 1 March 2026; or
 .2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 September 2026; or
 .3 the delivery of which is on or after 1 March 2030.

5. Marine Plastic Litter from ships (Agenda 8)

5.1 Plastic Pellet

Due to the lack of clarity on the most appropriate mandatory instrument to reduce the environmental risk associated with the maritime transportation of plastic pellets in freight containers, two-step approach has been considered: 1) developing a voluntary MEPC circular; and 2) developing a mandatory instrument by experience gained from the voluntary measures proposed in the circular.



In this regard, last MEPC 81 approved MEPC.1/Circ.909 on Recommendations for the carriage of plastic pellets by sea in freight containers, which was developed for the purpose of reducing the environmental risks associated with the carriage of plastic pellets in packaged from by sea. As a follow-up action to this point, MEPC 82 approved Guidelines on good practice relating to clean-up of plastic pellets from ship-source release. These guidelines provide practical guidance to member States and other entities when responding to ship-source releases of plastic pellets and highlight how the response to spills of plastic pellets might differ from more established oil spill response.

In addition, regarding how to progress the second stage of the work to develop mandatory instruments on the requirements for the carriage of plastic pellets by sea in freight containers, MEPC 82 agreed to include this work item within the scope of output 4.3 “Follow-up work emanating from the Action Plan to address marine plastic litter from ships”.

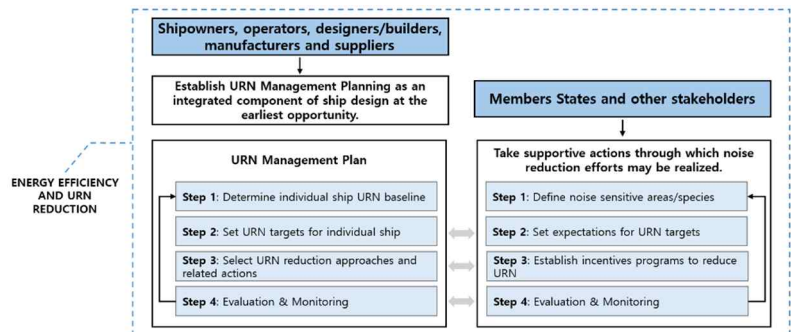
6. Reduction of Underwater Radiated Noise from Commercial Shipping (Agenda 9)

MEPC 82 approved the draft action plan for the reduction of underwater noise from commercial shipping, which outlines overall tasks for implementation by relevant organs and bodies, including:

- Establish an Experience-Building Phase (EBP) for the Revised Guidelines;
- Enhance public awareness, education, and seafarer training;
- Standardize URN Management Planning process;
- Develop URN Targets;
- Create IMO processes/technical groups to share information and take into consideration other IMO regulatory goals;
- Develop tools to collect data and share information;
- Encourage research on URN and GHG/URN and Biofouling;
- Encourage research on impacts of URN on species and habitats

Furthermore, MEPC 82 approved MEPC.1/Circ.906/Rev.1 containing amendments to the revised guidelines for the reduction of underwater radiated noise from shipping to address adverse impacts on marine life. The revised guidelines provide a new Appendix IV with respect to the underwater radiated noise management planning chart. The reference chart is intended as a tool to support shipowners and other stakeholders by visualizing a process for the development of an underwater radiated noise management plan.

Moreover, MEPC 82 noted that the work of the SDC Sub-Committee on the 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) and identification of next steps had been completed, and agreed to continue the work on reducing underwater radiated noise from ships by introducing an EBP and changing the title of the relevant work to “Experience Building Phase for the Reduction of Underwater Radiated Noise (MEPC.1/Circ.906/Rev.1). The Committee, noting that the three-year experience-building phase stated in the draft action plan may need to be revisited for an extension of up to two years, further agreed to place the revised output on the agendas of MEPC 82 through to MEPC 85 to promote greater access to knowledge and research on URN.



7. Report of PPR Sub-Committees (Agenda 10)

7.1 Revision of MEPC.1/Circ.590 *Revised tank cleaning additives guidance note and reporting form*

Having considered a need to provide more information to manufacturers of tank cleaning additives which are normally used in cleaning cargo tank inside after carriage of chemical cargoes and to ensure a more consistent approach in the assessment, PPR Sub-Committee previously agreed to revise MEPC.1/Circ.590. MEPC 82 noted that PPR 11 agreed the revised circular developed by ESPH 29 and approved the revised circular as MEPC.1/Circ.590/Rev.1. This revised circular will be used by manufacturers of tank cleaning additives in their submission of data through their Administrations for evaluation by the ESPH Technical Group.

7.2 Guidelines for developing a local oil/hazardous and noxious substances marine pollution contingency plan

MEPC 82 approved *Guidelines for developing a local oil/hazardous and noxious substances marine pollution contingency plan*. The purpose of these guidelines is to assist local governmental institutions in developing a marine pollution contingency plan. The guidance is targeted at those entities responsible for planning the initial response to a maritime incident threatening a local jurisdiction.

7.3 Guidelines on mitigation measures to reduce risks of use and carriage of HFO as fuel by ships in Arctic water

MEPC 82 approved MEPC.1/Circ.915 *Guidelines on mitigation measures to reduce risks of use and carriage of HFO as fuel by ships in Arctic water*. The purpose of these guidelines is to assist Arctic coastal States to implement measures at national levels to reduce the risk of the use and carriage for use of HFO as fuel on ships in Arctic waters, and to take decisions on waivers pursuant to regulation 43A.4 for ships while operating in Arctic waters subject to their sovereignty or jurisdiction. The guidelines recommend that fuel tanks intended for receiving HFO be located at a distance of not less than 0.76m from the outer plating.

8. Identification and protection of Special Areas, ECAs and PSSAs (Agenda 12)

8.1 Designation of the Nusa Penida Islands and Gili Matra Islands in Lombok Strait as a Particularly Sensitive Sea Area (PSSA)

MEPC 82 adopted Res.MEPC.396(82) on designation of the Nusa Penida Islands and Gili Matra Islands in Lombok Strait of Indonesia, as a Particularly Sensitive Sea Area (PSSA) containing the recommendatory additional protective measures. This area is recognized as an area of significant shipping activities which pose a risk to the diverse natural marine habitats as well as large marine mammals. The protective measures contain the recommended traffic travel patterns which are designed to safeguard the region's ecological integrity (to minimize damage to coral reefs, reduce disturbance to marine flora and marine pollution arising from shipping activities). Under the routeing system proposed, all type of the vessels navigating in this region should sail in the direction of that lane, as indicated in Figure 3 and 4 as below:

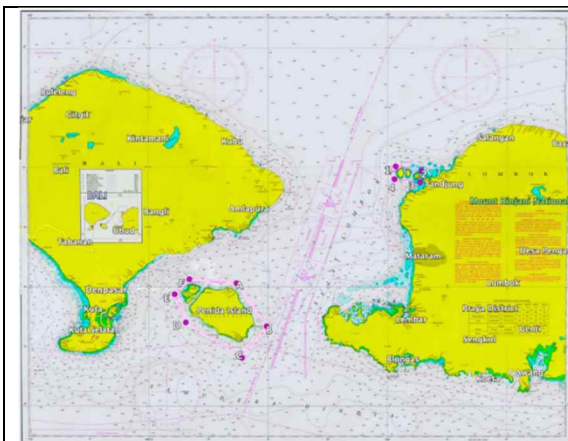


Figure 3 PSSA (Nusa Penida and Gili Matra Islands)

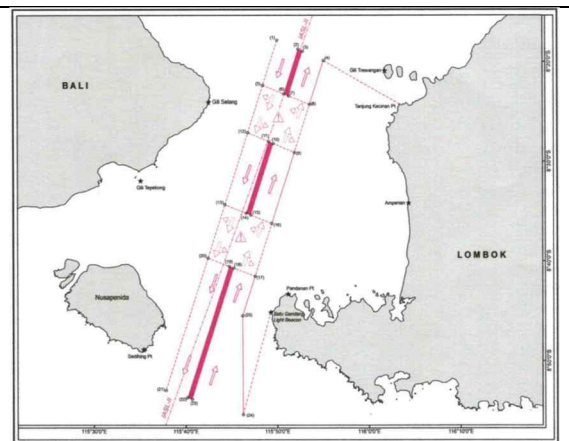


Figure 4 Traffic Separation Scheme in Lombok Strait

9. New Output (Agenda 14)

9.1 Revision of MARPOL Annex VI and the NOx Technical Code 2008 to address concerns about high NOx emissions from Tier II and Tier III compliant ships relative to the intended purpose of regulation 13 of MARPOL Annex VI

The following concerns have been raised that the actual NOx emission levels may be exceeding the Tier III standards when ships with IMO NOx Tier III propulsion engine are operating within ECAs at low loads (below 25% Maximum Continuous Rating (MCR)), such as in port, coastal, and inland areas, ship speed reduction zones:

1. The combination of the marine engine test cycle and the MARPOL Annex VI and NTC (NOx Technical Code) auxiliary control device (ACD) could result in disabling Tier III NOx technology at low engine loads, leading to little or no NOx reductions in an ECA;
2. The keel laying dates incentivize behavior (early keel-laying) to avoid compliance with the Tier III NOx limits;
3. There are challenges in linking compliance procedures to be real-world operational load-behavior of marine diesel engines; and
4. Remote measurements to be conducted by service suppliers on a regular basis need to be introduced to provide indicative information on in-use emissions and ensure that the engines are compliant with Tier III NOx limits for their whole lifetime.

Following consideration, MEPC 82 agreed to review and revise MARPOL Annex VI and the NOX Technical Code 2008 to address concerns about high NOX emissions from Tier II and Tier III compliant ships relative to the intended purpose of regulation 13 of MARPOL Annex VI, assigning the PPR Sub-Committee as the associated organ, with two sessions needed to complete the work.

10. Any other business (Agenda 16)

10.1 Guidance on the implementation of the Hong Kong and Basel Conventions with respect to the transboundary movement of ships intended for recycling

Last MEPC 81 noted that a ship issued with an International Ready for Recycling Certificate (IRRC) under the Hong Kong Convention may be considered a hazardous waste under the relevant provisions of the Basel Convention, consequently the ship could be at a risk of being detained due to the non-compliance with the Basel Convention requirements during entire validity period of the IRRC (up to 3 months).



To resolve such a legal inconsistency between Hong Kong and Basel Conventions, MEPC 82 approved HKSRC.2/Circ.1 providing guidance on the implementation of the Hong Kong and Basel Conventions with respect to the transboundary movement of ships intended for recycling, clarifying that, for the States that is a Party to both the Hong Kong Convention and Basel Convention, since the relevant arrangements have been made to ensure environmentally sound management of hazardous wastes and other wastes (arising from ship recycling) as required by the Basel Convention, the provisions of Basel Convention shall not affect transboundary movements which take place pursuant to the Hong Kong Convention.

10.2 Revised guidance on best management practices for removal of anti-fouling coatings from ships

MEPC 75 had requested the Secretariat of the London Convention and Protocol to consider a revision of the guidance on best management practices for removal of anti-fouling coatings from ships, including TBT hull paints, in light of the introduction of controls on cybutryne under the AFS Convention.

Given that a review of the revised guidance in connection with the adoption of the 2023 Guidelines for the control and management of ships' bio-fouling to minimize the transfer of invasive aquatic species (Res.MEPC.378(80)) had been conducted by the Secretariat, MEPC 82 approved AFS.3/Circ.6 providing the revised guidance on best management practices for removal of anti-fouling coatings from ships.

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