IMO UPDATE: MARINE ENVIRONMENT PROTECTION COMMITTEE – MEPC 76

Relevant for ship owners and managers. June 2021

The 76th session of the IMO's Marine Environment Protection Committee (MEPC 76) was held remotely with a limited agenda from 10 to 17 June 2021. MEPC 76 adopted technical and operational measures to reduce carbon intensity of international shipping, taking effect from 2023. The measures include the Energy Efficiency Existing Ship Index (EEXI), the enhanced Ship Energy Efficiency Management Plan (SEEMP) and the Carbon Intensity Indicator (CII) rating scheme.

Meeting highlights

- Adopted technical and operational measures (EEXI, CII and SEEMP) to reduce carbon intensity of international shipping, including supporting guidelines
- Adopted prohibition on the use and carriage for use as fuel of heavy fuel oil by ships in Arctic waters
- Adopted ban on cybutryne in anti-fouling systems

Adoption of amendments to mandatory instruments
The MEPC 76 adopted amendments to the following IMO instruments:

MARPOL Annex VI – technical and operational measures to reduce carbon intensity of international shipping
Amendments to MARPOL Annex VI were adopted, introducing mandatory goal-based technical and operational measures to reduce carbon intensity of international shipping. The measures include:

- The Energy Efficiency Existing Ship Index (EEXI), applicable from the first annual, intermediate or renewal IAPP survey after 1 January 2023
- The enhanced Ship Energy Efficiency Management Plan (SEEMP), whereby an approved SEEMP needs to be kept on board from 1 January 2023
- The operational Carbon Intensity Indicator (CII) rating scheme, taking effect from 1 January 2023

In addition, the amendments include an option for excluding unmanned non-self-propelled (UNSP) barges from survey and certification requirements.

The amendments will enter into force on 1 November 2022 and were adopted as a new consolidated MARPOL Annex VI, including restructuring and renumbering of existing regulations. The appendix to this newsletter shows an overview of which regulations in Chapter 4 apply to which ship types and sizes.

MARPOL Annex I – prohibition on the use and carriage for use as fuel of heavy fuel oil by ships in Arctic waters
Amendments to MARPOL Annex I, prohibiting heavy fuel oil to be used or carried for use in Arctic waters, were adopted. The prohibition will apply from 1 July 2024, except for vessels subject to protected fuel oil tanks under MARPOL Annex I or the Polar Code for which the prohibition will apply from 1 July 2029. A state with a coastline which borders on Arctic waters may waive the requirement until 1 July 2029 for ships without fuel oil tank protection, operating in waters subject to its sovereignty or jurisdiction.

The amendments will enter into force on 1 November 2022.

MARPOL Annexes I and IV – exemption of unmanned non-self-propelled UNSP barges from survey and certification requirements

Amendments to MARPOL Annex I and Annex IV excluding UNSP barges from survey and certification requirements for pollution prevention by oil and sewage were adopted. The exemptions under Annex I are based on the barge not carrying oil or fitted with any oil tanks or machinery that generates oil residues. Likewise, for Annex IV on the barge not used for holding sewage or having any arrangement that could produce sewage.

Guidelines for exemption of UNSP barges from the survey and certification requirements were approved. UNSP barges being exempted will be issued an exemption certificate valid for 5 years instead of the relevant MARPOL certificate.

The amendments will enter into force on 1 November 2022.

Anti-Fouling Systems on Ships Convention (AFS) – controls on cybutryne and form of the International Anti-fouling System Certificate

Amendments to the AFS Convention to include controls on cybutryne and an operative paragraph with respect to issuance of the new International Anti-fouling System Certificate (IAFSC) were adopted.

This introduces a ban to apply or re-apply anti-fouling systems containing cybutryne from 1 January 2023. All ships should remove or seal such anti-fouling systems at the next scheduled renewal of the anti-fouling system after 1 January 2023, but no later than 60 months following the last application of such anti-fouling system prior to 1 January 2023.

The requirement to remove or seal does not apply to fixed and floating platforms, FSUs and FPSOs constructed prior to 1 January 2023 and not dry-docked on or after that date; ships not engaged in international voyages; and ships of less than 400 GT engaged in international voyages, if accepted by the coastal state.

The amendments will enter into force on 1 January 2023.

Harmful aquatic organisms in ballast water
Due to time constraints at this session, further work on ballast water management was deferred to MEPC 77.

Air pollution and energy efficiency

Energy Efficiency Design Index

MEPC 76 agreed to progress the work on the Shaft/Engine Power Limitation concept to apply also to the EEDI framework for new ships, with a view to finalization at MEPC 77 in November 2021.

MEPC 76 approved amendments to the guidelines for determining minimum propulsion power to maintain the manoeuvrability of ships in adverse conditions. The amendments include changes to the definition of adverse weather conditions and a new minimum power assessment method.

MEPC 76 updated Unified Interpretations clarifying the dates related to EEDI Phase 2 and 3 for "new ships", as amendments to circular MEPC.1/Circ.795/Rev.4.

NOx Technical Code

MEPC 76 approved Unified Interpretations to the NOx Technical Code 2008, clarifying requirements for testing and certification of engines with Selective Catalytic Reduction (SCR) systems.

Due to time constraints at this session, further work on air pollution and energy efficiency was deferred to MEPC 77 in November 2021.

Reduction of GHG emissions

Technical guidelines for the EEXI, CII and SEEMP

Building on the outcomes of ISWG-GHG 8 held two weeks prior to MEPC, technical guidelines for the EEXI and CII were adopted.

The key decision was the establishment of reduction factors for the CII. With 2019 as the base year for the reference lines, the reduction factor defines the mid-point of the C-rating band for each year. The CII reduction rates were set to increase by 1 percentage point (pp) per year for 2020–2022, followed by 2 pp per year for 2023–2026. The rates for 2027–2030 will be decided as part of the review to be concluded by 1 January 2026.

The reduction factors are as follows:

Year	Reduction from 2019 reference (mid-point of C-rating band)
2023	5%
2024	7%
2025	9%
2026	11%
2027–2030	To be decided

Remaining work will be conducted through a Correspondence Group reporting to MEPC 78 in 2022, and includes:

- Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)
- Guidelines on correction factors for certain ship types, operational profiles and/or voyages for the CII calculations (G5)
- Guidelines on the audit and verification processes of SEEMP, including for ships required to develop a plan of corrective actions (PCA)
- Development of possible parameters and templates for reporting, verification and submission of data for trial CIIs of individual ships on a voluntary basis
- Various other guidelines, e.g. Procedures for Port State Control (PSC) and Verification of ship fuel oil consumption data (DCS)
- Guidelines on aggregation and reporting of ship's fuel consumption data to the new Administration and/or Company in the event of change from one Administration to another and/or from one Company to another

Energy Efficiency Existing Ship Index (EEXI)

MEPC 76 adopted the following EEXI guidelines:

- Guidelines on the method of calculation of the attained Energy Efficiency Existing Ship Index (EEXI)
- Guidelines on survey and certification of the Energy Efficiency Existing Ship Index (EEXI)
- Guidelines on the shaft / engine power limitation system to comply with the EEXI requirements and use of a power reserve

The key decisions regarding EEXI guidelines include:

- In case an engine power limitation (EPL) is installed, the engine power in the EEXI calculation (PME) should be 83% of the maximum limited power (MCR_{lim}) or 75% of maximum power (MCR), whichever is lower.
- Numerical calculations were accepted as an alternative to tank tests when calculating the speed in the EEXI calculation (v_{ref}).
- Additional options for calculating v_{ref} using in-service speed measurements will be further discussed and may be included at a later stage.
- Consideration of energy efficiency technologies such as wind propulsion systems was deferred.
- An additional capacity correction factor for ro-ro cargo ships (vehicle carrier) was agreed.

Carbon Intensity Indicator (CII)

MEPC 76 adopted the following CII guidelines:

- Guidelines on operational carbon intensity indicators and the calculation methods (G1)
- Guidelines on the reference lines for use with operational carbon intensity indicators (G2)
- Guidelines on the operational carbon intensity reduction factors relative to reference lines (G3)
- Guidelines on the operational carbon intensity rating of ships (G4)

The key decisions regarding CII guidelines include:

- The calculation guidelines (G1) were adopted without any correction factors, exceptions or exclusions.
- A new correction factor guideline (G5) will be discussed in a Correspondence Group and agreed by MEPC 78 in 2022 at the latest.
- The reference line guideline (G2) was adopted with no acceptance of proposals for split reference lines and no separate category for high-speed craft.
- The reduction factor guidelines (G3) were adopted using a phased approach for the required reduction rates.
- The rating guidelines (G4) were adopted with no changes being made. Some issues may be raised in the Correspondence Group dealing with correction factors.

MEPC 76 added a provision in MARPOL allowing flag administrations access to reported data needed to calculate the annual CII in case of a change of ship Company or flag during a calendar year.

Ship Energy Efficiency Management Plan (SEEMP)

The draft SEEMP guidelines were not finalized due to time constraints and were sent to a Correspondence Group for further work and adoption at MEPC 78 in 2022 at the latest.

Proposals for allowing fleet averaging of the CII were not agreed but may, in principle, be considered in future as an option under mid- and long-term measures.

MEPC 76 agreed to make the regulatory text clear in that the verification and audit requirement for the SEEMP would only apply to ships above 5,000 GT subject to the CII requirements.

Comprehensive Impact Assessment

A Comprehensive Impact Assessment had been completed prior to MEPC 76 analysing the impact of the adopted measures. MEPC agreed that the potential impacts on states did not stand in the way of adopting the agreed regulations. Proposals for the exclusion of countries, trades or ships from the requirements were rejected but will be kept under review and revisited in 2026. To cater to uncertainties and concerns raised by some parties, it was agreed to keep the Impact Assessment under review.

International Maritime Research and Development Board (IMRB)

There were no conclusions on the establishment of the IMRB fund mechanism. Further submissions are invited to MEPC 77 in November 2021, where the proposal may be considered in connection with discussions on mid- and long-term measures, and in particular the discussions of market-based measures (MBM).

Mid- and long-term measures, including market-based measures

MEPC 76 recognized the urgent need to progress the establishment of mid- and long-term measures and agreed on a working plan to this end. The work will include consideration of MBMs, as well as further discussion on measures to catalyse a fuel transition, including a potential GHG footprint requirement for fuels. While a specific proposal for a USD 100/tonne CO2 bunker levy was not discussed in detail, this along with in-depth discussions on other mid- and long-term measures will continue at the next working group (ISWG-GHG 9) in October 2021. The intent is to have agreed measures for further development by spring 2023, in time for the review of the IMO GHG Strategy.

Marine plastic litter

MEPC approved two circulars regarding marine plastic litter:

- A circular on the provision of adequate facilities at ports and terminals for the reception of plastic waste from ships
- A circular on the sharing of results from research on marine litter and encouraging studies to better understand microplastics from ships

Due to time constraints at this session, further work on marine plastic litter was deferred to MEPC 77.

Pollution prevention and response

Due to time constraints at this session, further work on this topic including on safety and pollution hazards of chemicals, exhaust gas cleaning systems and black carbon, was deferred to MEPC 77.

Work programme

A new output related to underwater noise was agreed with a target completion in 2023.

Correspondence Groups established

The following Correspondence Group was established:

- Carbon Intensity Reduction

Recommendations

DNV recommends that our customers evaluate possible technical and operational modifications to comply with the upcoming requirement and prepare for the development of an EEXI Technical File and an SEEMP.

For more information about the regulations and DNV services, visit:

- www.dnv.com/decarbonization
- www.dnv.com/cii
- www.dnv.com/eexi

Customers should also note and prepare for the upcoming prohibition on the use of heavy fuel oil in the Arctic and the ban on cybutryne in anti-fouling systems.

Appendix

- Provisional list of resolutions and circulars (page 5)
- Scope of regulations in Chapter 4 of MARPOL Annex VI (page 6)

Contact

For customers:
DATE – Direct Access to Technical Experts via *My Services* on Veracity.

Otherwise:
Use our office locator to find the nearest DNV office.

Provisional list of resolutions and circulars

Please note that the list and document references are provisional.

Resolution MEPC.328(76)
Amendments to the Annex of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL Annex VI)

Resolution MEPC.329(76)
Amendments to the Annex of the International Convention for the Prevention of Pollution From Ships, 1973, as modified by the Protocol of 1978 relating thereto - Amendments to MARPOL Annex I (Prohibition on the use and carriage for use as fuel of heavy fuel oil By ships in Arctic waters)

Resolution MEPC.330(76)
Amendments to the Annex of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto - Amendments to MARPOL Annexes I and IV (Exemption of unmanned non-self-propelled barges from survey and certification requirements)

Resolution MEPC.331(76)
Amendments to the International Convention on the Control of Harmful Anti-Fouling Systems on Ships, 2001 - Amendments to Annexes 1 And 4 (Controls on cybutryne and form of the International Anti-Fouling System Certificate)

Resolution MEPC.332(76)
2021 Guidelines on the method of calculation of the attained Energy Efficiency Existing Ship Index (EEXI)

Resolution MEPC.333(76)
2021 Guidelines on survey and certification of the Energy Efficiency Existing Ship Index (EEXI)

Resolution MEPC.334(76)
2021 Guidelines on the shaft/engine power limitation system to comply with the EEXI requirements and use of a power reserve

Resolution MEPC.335(76)
2021 Guidelines on operational carbon intensity indicators and the calculation methods (CII Guidelines, G1)

Resolution MEPC.336(76)
2021 Guidelines on the reference lines for use with operational carbon intensity indicators (CII Reference Lines Guidelines, G2)

Resolution MEPC.337(76)
2021 Guidelines on the operational carbon intensity reduction factors relative to reference lines (CII Reduction Factor Guidelines, G3)

Resolution MEPC.338(76)
2021 Guidelines on the operational carbon intensity rating of ships (CII Rating Guidelines, G4)

Circular MEPC.1/Circ.892
Guidelines for exemption of unmanned non-self-propelled (UNSP) barges from the survey and certification requirements under the MARPOL Convention

Circular MEPC.1/Circ.893
Provision of adequate facilities at ports and terminals for the reception of plastic waste from ships

Circular MEPC.1/Circ.894
Sharing of results from research on marine litter and encouraging studies to better understand microplastics from ships

Circular MEPC.1/Circ.895
Unified interpretations to the NOX Technical Code 2008, as amended

Circular MEPC.1/Circ.795/Rev.5
Unified interpretations to MARPOL ANNEX VI

Scope of regulations in Chapter 4 of MARPOL Annex VI

The following table shows which regulations in the amended Chapter 4 of MARPOL Annex VI apply to certain ship types and sizes.

	Ship type/characteristics	Reg. 22: **Attained EEDI**	Reg. 23: **Attained EEXI**	Reg. 24: **Required EEDI**	Reg. 25: **Required EEXI**	Reg. 26.1: **Basic SEEMP**	Reg. 27: **DCS** Reg. 26.2: **SEEMP Part 2**	Reg. 28: **CII rating** Reg. 26.3: **Enh. SEEMP**
Conventional propulsion	Bulk carrier	≥ 400 GT	≥ 400 GT	≥ 10000 DWT	≥ 10000 DWT	≥ 400 GT	≥ 5000 GT	≥ 5000 GT
	Gas carrier	≥ 400 GT	≥ 400 GT	≥ 2000 DWT	≥ 2000 DWT	≥ 400 GT	≥ 5000 GT	≥ 5000 GT
	Tanker	≥ 400 GT	≥ 400 GT	≥ 4000 DWT	≥ 4000 DWT	≥ 400 GT	≥ 5000 GT	≥ 5000 GT
	Container ship	≥ 400 GT	≥ 400 GT	≥ 10000 DWT	≥ 10000 DWT	≥ 400 GT	≥ 5000 GT	≥ 5000 GT
	General cargo ship (except livestock carrier, barge carrier, heavy load carrier, yacht carrier, nuclear fuel carrier)	≥ 400 GT	≥ 400 GT	≥ 3000 DWT	≥ 3000 DWT	≥ 400 GT	≥ 5000 GT	≥ 5000 GT
	Refrigerated cargo carrier	≥ 400 GT	≥ 400 GT	≥ 3000 DWT	≥ 3000 DWT	≥ 400 GT	≥ 5000 GT	≥ 5000 GT
	Combination carrier	≥ 400 GT	≥ 400 GT	≥ 4000 DWT	≥ 4000 DWT	≥ 400 GT	≥ 5000 GT	≥ 5000 GT
	Ro-ro vehicle carrier	≥ 400 GT	≥ 400 GT	≥ 10000 DWT	≥ 10000 DWT	≥ 400 GT	≥ 5000 GT	≥ 5000 GT
	Ro-ro cargo ship	≥ 400 GT	≥ 400 GT	≥ 1000 DWT	≥ 1000 DWT	≥ 400 GT	≥ 5000 GT	≥ 5000 GT
	Ro-ro passenger ship	≥ 400 GT	≥ 400 GT	≥ 250+ DWT and ≥400 GT	≥ 250 DWT and ≥400 GT	≥ 400 GT	≥ 5000 GT	≥ 5000 GT
	Cruise ship	≥ 400 GT	≥ 400 GT	N/A	N/A	≥ 400 GT	≥ 5000 GT	≥ 5000 GT
	Passenger ship (except ro-ro passenger and cruise)	≥ 400 GT	N/A	N/A	N/A	≥ 400 GT	≥ 5000 GT	N/A
	Other ship with conventional propulsion, (e.g. heavy load carrier, livestock carrier, offshore)	N/A	N/A	N/A	N/A	≥ 400 GT	≥ 5000 GT	N/A
	LNG carrier with any propulsion system	≥ 400 GT	≥ 400 GT	≥ 10000 DWT	≥ 10000 DWT	≥ 400 GT	≥ 5000 GT	≥ 5000 GT
	Cruise ship with non-conventional propulsion	≥ 400 GT	≥ 400 GT	≥ 25000 GT	≥ 25000 GT	≥ 400 GT	≥ 5000 GT	≥ 5000 GT
	Livestock carrier, barge carrier, heavy load carrier, yacht carrier, nuclear fuel carrier and passenger ship with non-conventional propulsion, and Category A Polar Code ship	N/A	N/A	N/A	N/A	≥ 400 GT	≥ 5000 GT	N/A
	Other ship with non-conventional propulsion	N/A	N/A	N/A	N/A	≥ 400 GT	≥ 5000 GT	N/A
	Platforms including FPSOs and FSUs and drilling rigs	N/A	N/A	N/A	N/A	N/A	N/A	N/A