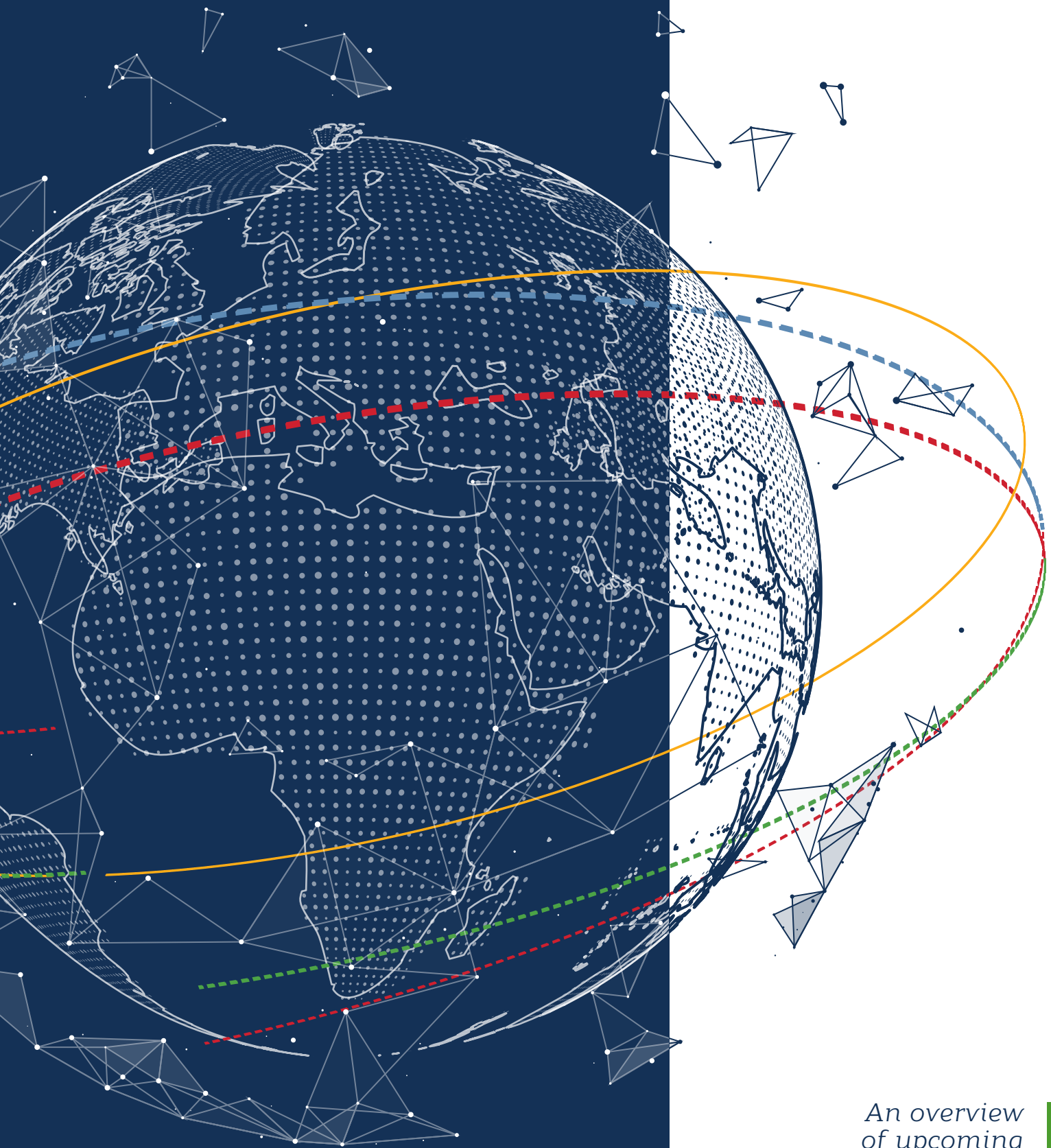
REGULATORY
Trends and Impact

SECOND EDITION



An overview of upcoming **INTERNATIONAL AND REGIONAL** *regulatory developments*

ABS

Published January 2025

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INTRODUCTION

The International Maritime Organization (IMO) has made several important developments in recent years, focusing on environmental sustainability, maritime safety and technological innovation. The IMO is also addressing the growing concerns over cybersecurity risks in maritime operations, enhancing ship safety standards with a focus on improving crew training, implementing new technologies and ensuring that international regulations keep pace with innovations such as autonomous shipping.

Following last year's successful publication of ABS *Regulatory Trends 2023*, ABS continues its commitment to provide owners, operators and the marine industry with the status of the latest IMO developments.

The second edition of *Regulatory Trends and Impact* provides a comprehensive summary of the regulatory developments from the IMO, including the latest adopted regulations and the ones under discussion that are expected to be adopted.

The IMO developments are presented in two main sections:

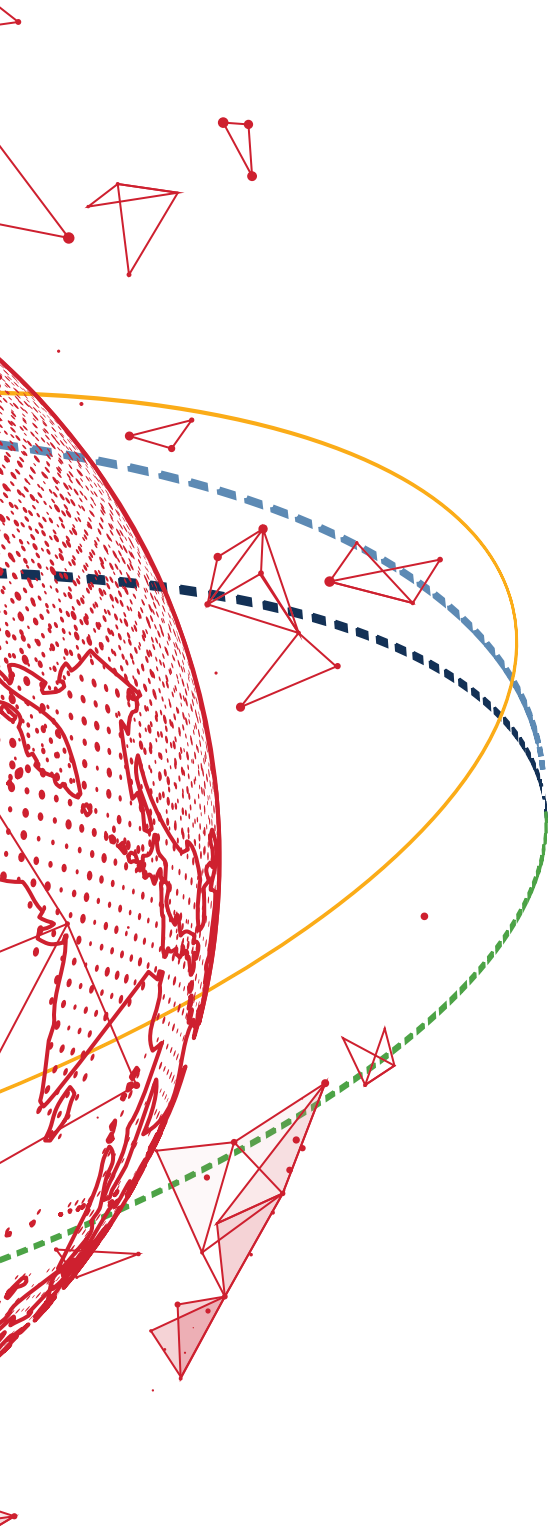
1. Environmental Protection (including the outcomes of MEPC 81 and MEPC 82): This section highlights the IMO development efforts on greenhouse gas (GHG) strategies and reducing shipping's carbon intensity.
2. Maritime Safety (including the outcomes of MSC 107 and MSC 108, and the relevant updates of MSC 109 related to the use of ammonia as fuel): This section presents the latest developments on the safety use of alternative fuels and cybersecurity.

This publication also summarizes the main regulatory developments at regional and country-specific levels. These regional and national regulatory developments are often testbeds for finding solutions that can have global applications in the future but must be accounted for in current vessel operations.

The second edition of ABS *Regulatory Trends and Impact* is current as of December 2024, and ABS will continue to monitor any IMO activities and provide updated guidance to help navigate the regulatory landscape.

KEY DEVELOPMENTS

- IMO GHG Reduction Mid-Term Measures
- Guidance for Alternative Fuels
- EU Fit for 55 – FuelEU Maritime Regulation
- U.S. EPA Vessel Incident Discharge Act (VIDA)
- Maritime Cybersecurity



Part One

INTERNATIONAL DEVELOPMENTS

IMO Environmental Protection

IMO Maritime Safety

REGULATORY OVERVIEW

2024

2025

MARITIME SAFETY

1 January 2024
IMDG Code
Edition (41-22)

1 January 2024
SOLAS II-1
Safe mooring requirements

1 January 2024
IGF Code
- Pressure relief system
- Fire extinguishing in the fuel preparation room
- Various amendments

May 2024
Liquefied Hydrogen in Bulk Fuel
Revised Interim Recommendations for the Carriage of Liquefied Hydrogen in Bulk

1 July 2024
NEW SOLAS XV
Industrial personnel and new IP Code

1 July 2024
Guidelines for LPG as Fuel

1 July 2024
ESP Code
Additional survey requirements

1 January 2025
IMSBC Code
Amendment (07-23)

1 July 2025
Electronic Certificates of Seafarers

1 January 2026
SOLAS Chapter V
Electronic inclinometers on containerships and bulk carriers

1 January 2026
STCW Code
New Provisions on Bullying and Harassment

1 January 2026
SOLAS II-1
New OLAW Regulations

1 January 2026
SOLAS III
Annual thorough examination and operational test concerning ventilation system (Amendments to MSC.402(96))

1 January 2026
SOLAS II-2
Prevention of Fire and Explosion

1 January 2026
LSA Code
- Ventilation of TEL
- Single hook and fall systems
- In water performa of lifejackets
- Lowering speed of survival crafts and rescue boats

1 July 2026
IGC Code
Use of cargoes identified as toxic products (e.g., ammonia) as f

GBS MASS Code de

2023

2024

Revision of Initial IMO GHG Strategy

LCA Guidelines
Life-cycle GHG/Carbon Intensity Guidelines

7 July 2023
2023 Biofouling Guidelines
Guidelines for the Control and Management of Ship's Biofouling

1 October 2023
Interim Guidance
Uptake of sustainable biofuels

1 May 2024
MARPOL Annex V
Marine Plastic Litter from Ships

1 May 2024
MARPOL Annex VI
- Bunker delivery note information
- Mediterranean SO_x ECA
- Information included in Fuel Oil Consumption Reporting

1 July 2024
Arctic HFO Ban

1 Feb 2025
BWM
Changes to the form of the Ballast Water Record Book (BWRB)

BWM
- Ports with Challenging Water Quality
- Temporary Storage of Treated Sewage/Gray Water in Ballast Tanks

Use of Ballast Record

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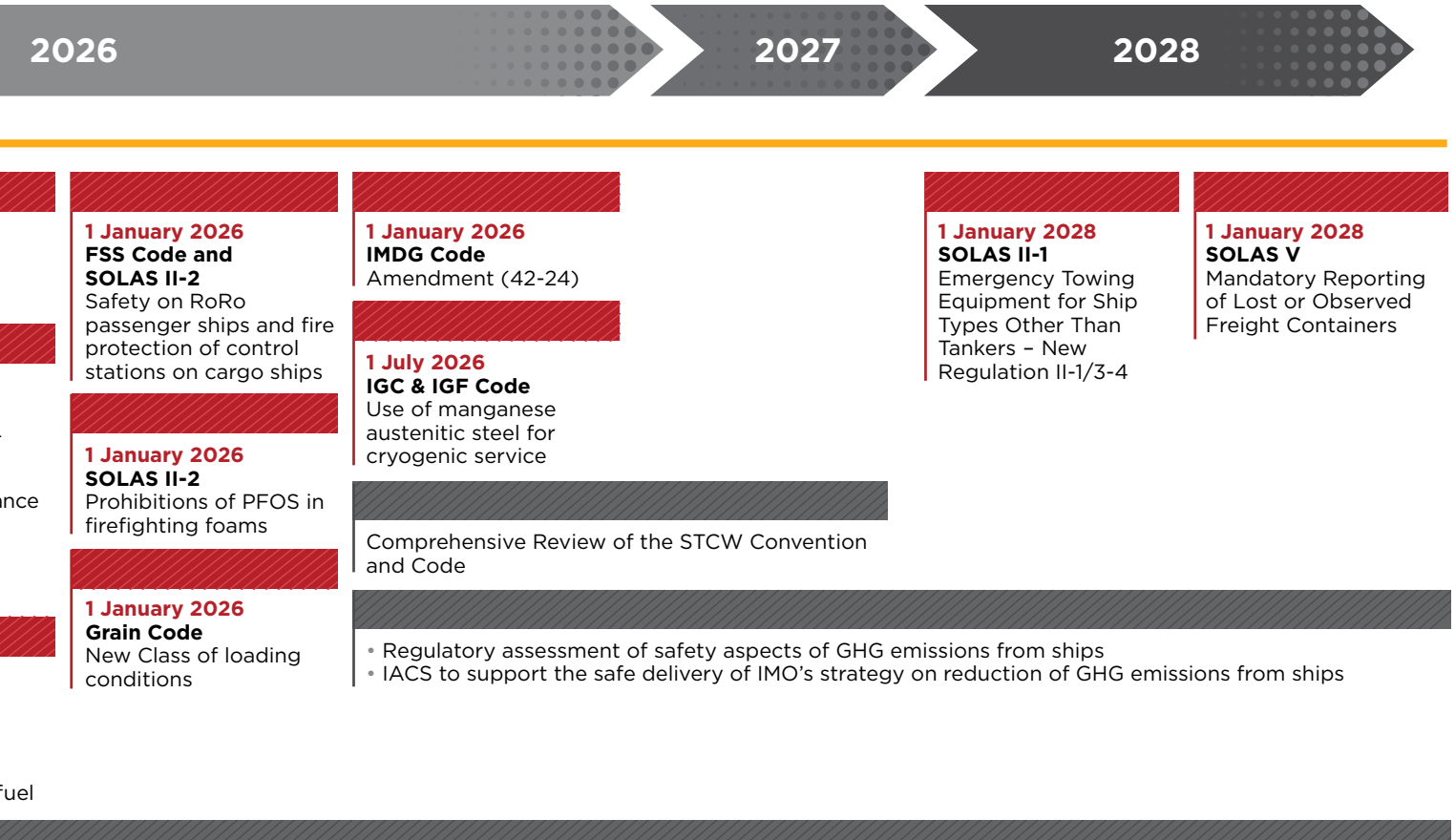
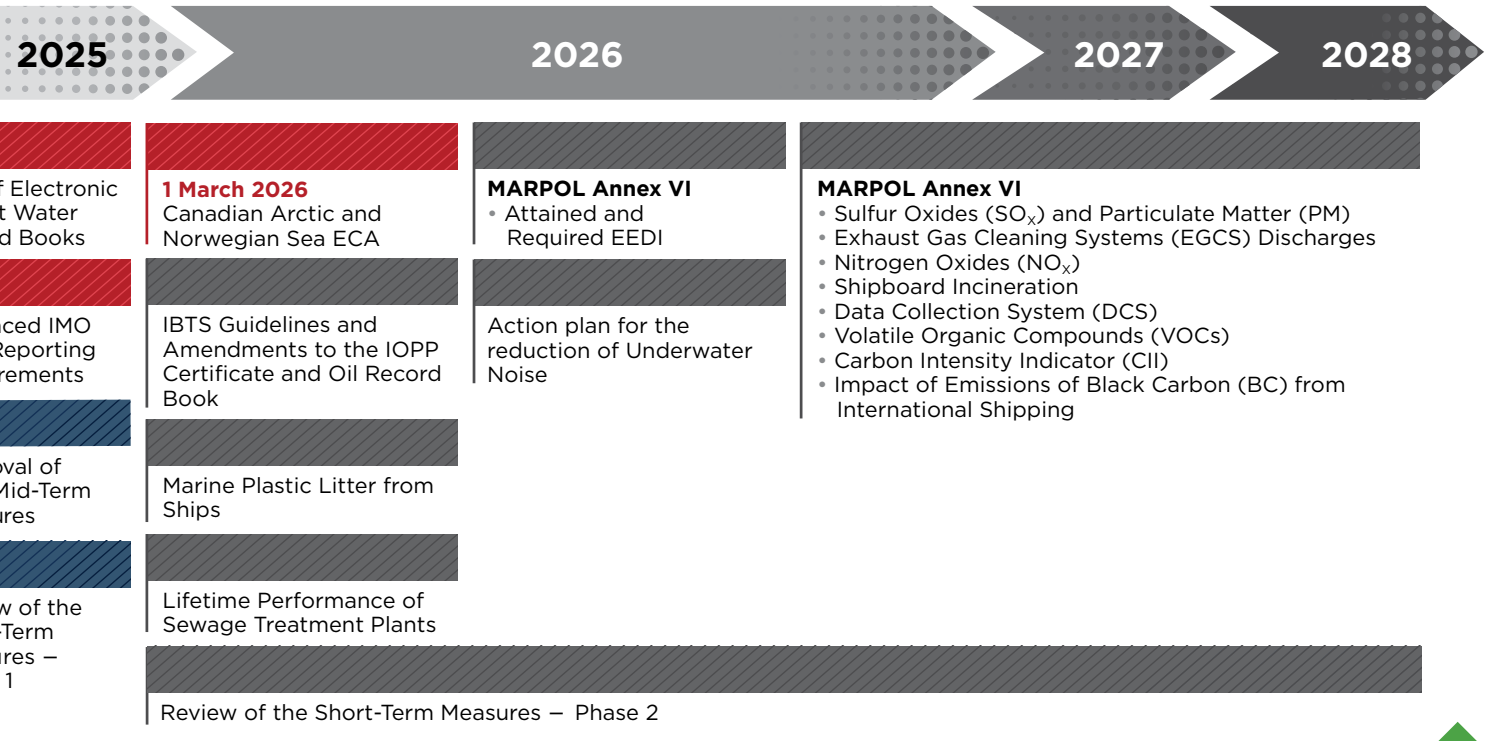
Appro GHG M Measu

Reviev Short- Measu Phase


2026
2027
2028
1 January 2026
FSS Code and
SOLAS II-2
Safety on RoRo passenger ships and fire protection of control stations on cargo ships
1 January 2026
IMDG Code
Amendment (42-24)
1 July 2026
IGC & IGF Code
Use of manganese austenitic steel for cryogenic service
1 January 2028
SOLAS II-1
Emergency Towing Equipment for Ship Types Other Than Tankers – New Regulation II-1/3-4
1 January 2028
SOLAS V
Mandatory Reporting of Lost or Observed Freight Containers
1 January 2026
SOLAS II-2
Prohibitions of PFOS in firefighting foams
Comprehensive Review of the STCW Convention and Code
1 January 2026
Grain Code
New Class of loading conditions
• Regulatory assessment of safety aspects of GHG emissions from ships
• IACS to support the safe delivery of IMO's strategy on reduction of GHG emissions from ships
Adopted by IMO
Finalized/Soon to be Adopted
Anticipated to Enter into Force
Ongoing Discussion
(*Indicative Placement in the Timeline)


2025
2026
2027
2028
1 March 2026
Canadian Arctic and Norwegian Sea ECA
MARPOL Annex VI
• Attained and Required EEDI
MARPOL Annex VI
• Sulfur Oxides (SO_x) and Particulate Matter (PM)
• Exhaust Gas Cleaning Systems (EGCS) Discharges
• Nitrogen Oxides (NO_x)
• Shipboard Incineration
• Data Collection System (DCS)
• Volatile Organic Compounds (VOCs)
• Carbon Intensity Indicator (CII)
• Impact of Emissions of Black Carbon (BC) from International Shipping
IBTS Guidelines and Amendments to the IOPP Certificate and Oil Record Book
Action plan for the reduction of Underwater Noise
Marine Plastic Litter from Ships
Lifetime Performance of Sewage Treatment Plants
Review of the Short-Term Measures – Phase 2

IMO ENVIRONMENTAL PROTECTION

GREENHOUSE GAS REDUCTION

ADOPTED BY IMO

2023 IMO GHG STRATEGY

Adopted: 7 July 2023 (MEPC 80)

At MEPC 80, the IMO adopted the 2023 Revised IMO Strategy on Reduction of GHG Emissions from Ships. The 2023 IMO GHG Strategy increases the levels of ambition compared to the Initial IMO Strategy on Reduction of GHG Emissions from Ships. The levels of ambition and indicative checkpoints shall consider the Well-to-Wake (WtW) GHG emissions of marine fuels, as addressed in the Guidelines on lifecycle GHG intensity of marine fuels (LCA Guidelines) with the overall objective of reducing GHG emissions of international shipping without a shift to other sectors.

Levels of ambition directing the 2023 IMO GHG Strategy are as follows:

1. **Carbon intensity of the ship to decline through further improvement of the energy efficiency for new ships:**

   To review with the aim of strengthening the energy efficiency design requirements for ships.

2. **Carbon intensity of international shipping to decline.**

   To reduce carbon dioxide (CO_2) emissions per transport work, as an average across international shipping, by at least 40 percent by 2030, compared to 2008.

3. **Uptake of zero or near-zero GHG emission technologies, fuels and/or energy sources to increase.**

   Uptake of zero or near-zero GHG emission technologies, fuels and/or energy sources to represent at least 5 percent, striving for 10 percent, of the energy used by international shipping by 2030.

4. **GHG emissions from international shipping to reach net zero.**

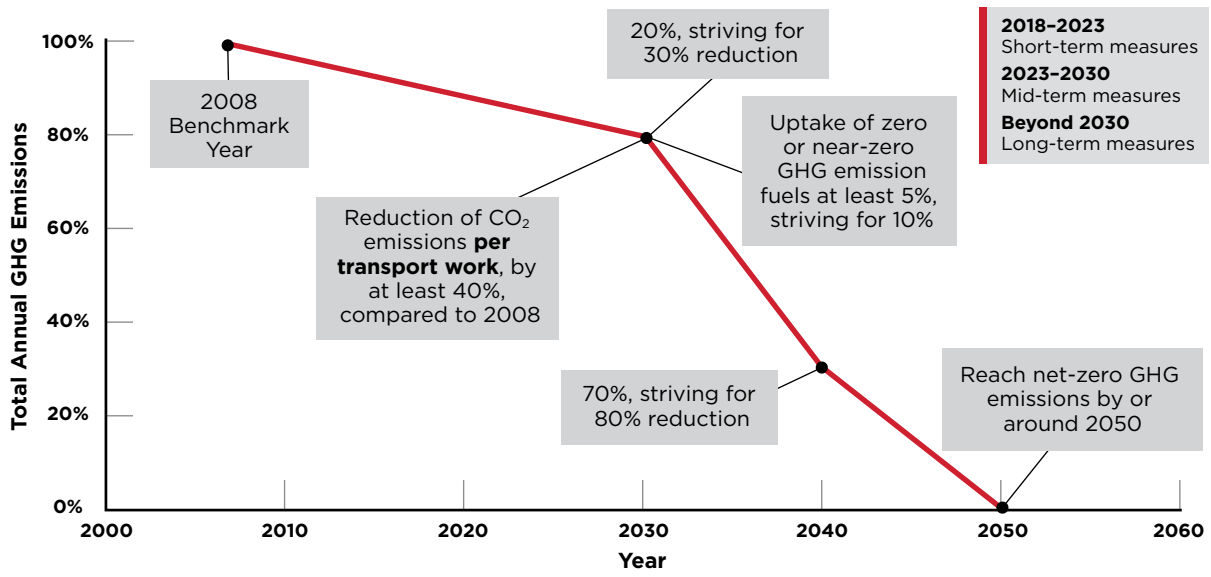
   To minimize GHG emissions from international shipping as soon as possible and to reach net-zero GHG emissions by or around 2050.

In addition, the Committee established two indicative checkpoints to reach net-zero GHG emissions from international shipping:

1. To reduce the total annual GHG emissions from international shipping by at least 20 percent, striving for 30 percent in 2030, compared to 2008.
2. To reduce the total annual GHG emissions from international shipping by at least 70 percent, striving for 80 percent by 2040, compared to 2008.

The IMO GHG Strategy is subject to a five-year review, with the next review to happen in 2028.

IMO GHG Reduction Targets



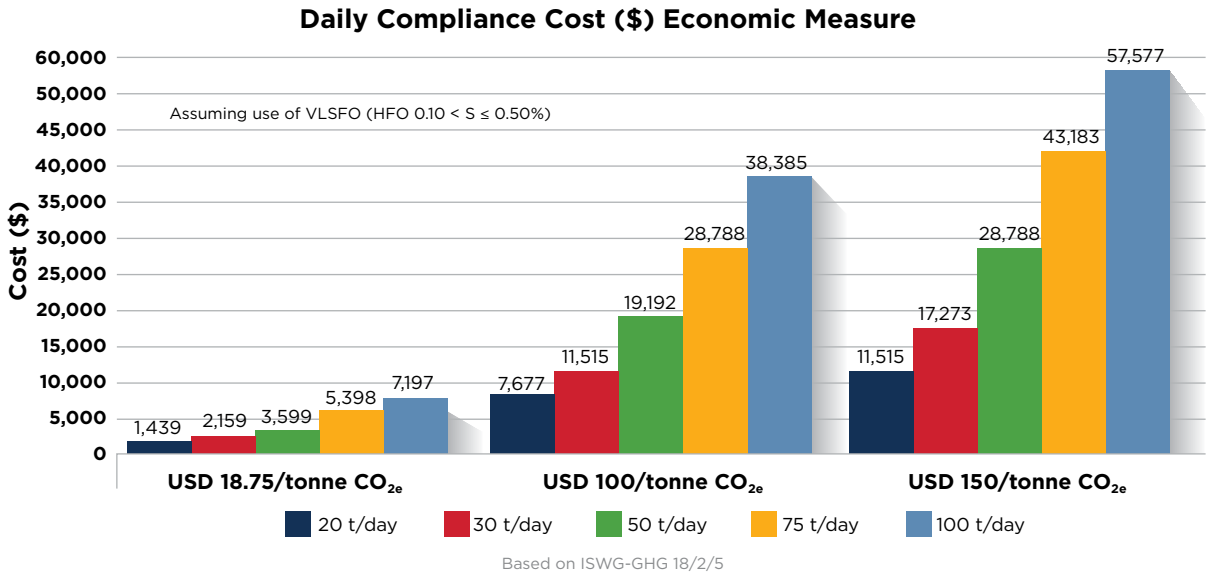
ONGOING DISCUSSION

DEVELOPMENT OF THE BASKET OF CANDIDATE MID-TERM GHG REDUCTION MEASURES

In Development: Anticipating entry into force in 2027

Achieving the ambitious targets of the 2023 IMO GHG Reduction Strategy will require additional measures to complement the existing short-term measures. These mid-term measures are currently being developed within the IMO's Marine Environmental Protection Committee (MEPC) and are expected to be finalized and approved by MEPC 83 in April 2025.

The mid-term measures are anticipated to consist of a technical element, which will likely be a measurement of the ship's GHG intensity per energy consumed on board – the GHG Fuel Standard (GFS) – combined with a phased reduction of the Greenhouse Gas Fuel Intensity (GFI) over time, and an economic element, which will attach a price to CO_2 emissions to incentivize shipowners and operators to reduce their carbon emissions by selecting cleaner fuels and energy-efficient technologies.



Numerous proposals regarding technical and economic measures were submitted in past MEPC Committees. To facilitate further discussion toward finalization, the IMO agreed to develop a draft regulatory framework – the IMO Net-Zero Framework – for the mid-term measures. This regulatory framework outlines the amendments to the existing MARPOL Annex VI requirements. It introduces a new Chapter V in Annex VI in the form of goal-based provisions, which details the requirements for both the technical and economic measures.

In the development of the basket of mid-term measures based on the draft amendments to MARPOL Annex VI and the new Chapter V for the IMO Net-Zero Framework, the IMO is considering the following issues:

- **Attained Annual GHG Fuel Intensity (Attained Annual GFI)** – The equation dedicated to the calculation methodology for the required GFI and how to consider the WtW emissions of marine fuels or proposals to include provisions and variables in the equation related to a possible correction factor for ships serving ports of developing countries.
- **Target/Required Annual GHG Fuel Intensity (Target/Required Annual GFI** – Whether the regulation should set a target or a required annual GFI, how the value of the reduction factor (Z factor) should be determined and if its trajectory should be set for each individual year or on a periodical basis.
- **Central Oversight/Management of a Fund/Facility and Collection of Revenue** – Governance of the fund, oversight of the fund/facility under the IMO's remit, the need for transparency, accountability and good governance of revenue management, and a balanced geographical representativeness of its membership.

- **Distribution of Revenue** – Possible operational revenue distribution modalities and areas of disbursement, eligibility of non-party ships, which elements could be contained in MARPOL Annex VI, and the definition of the legal, financial and operational requirements associated with the establishment of a fund/facility and associated oversight.
- **Economic Mechanism(s) to Incentivize the Transition to Net Zero** – Options for (an) economic mechanism(s) to incentivize the transition to net zero.

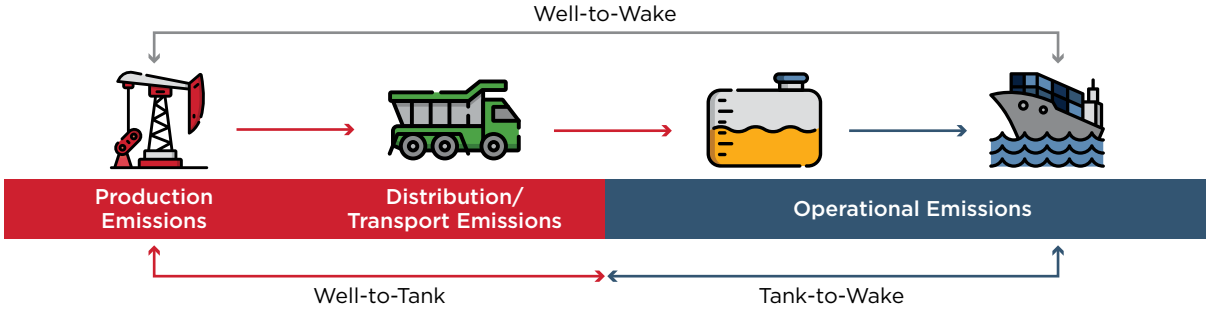
2024 MARINE FUEL LIFE CYCLE GUIDELINES

Adopted: 22 March 2024 (MEPC 81)

The LCA Guidelines aim to provide guidance on life-cycle GHG intensity assessment for all fuels and other energy carriers (e.g., electricity) used on board a ship. They cover the whole fuel life cycle, from feedstock extraction/cultivation/recovery, feedstock conversion to a fuel product, transportation and distribution/bunkering to fuel utilization on board a ship.

The guidelines address Well-to-Tank (WtT), Tank-to-Wake (TtW) and WtW GHG intensity and sustainability themes/aspects related to marine fuels/energy carriers (e.g., electricity for shore power) used for ship propulsion and power generation on board. They consider CO_2, methane (CH_4) and nitrous oxide (N_2O).

At MEPC 81, the IMO adopted Resolution MEPC.391(81), 2024 Guidelines on life-cycle GHG intensity of marine fuels (2024 LCA Guidelines), incorporating, among other things, amendments in relation to the quantification of parameters for biofuel production, evaluation of carbon GHG intensity of electricity and TtW methodologies for actual/onboard emission factors. In addition, to facilitate future submission of WtT and TtW default emission factor data, the IMO introduced a new Appendix V, providing the template for such submissions and invited member States to prepare and submit proposals for default emission factors. To ensure that new technological advances and scientific knowledge are considered, the LCA Guidelines are under continuous technical review, particularly in relation to the WtT, TtW and WtW emission factors and the new proposed fuel pathways.



CARBON CAPTURE AND STORAGE (CCS)

In Development: 2025 and Onward

At MEPC 81, the IMO established a Correspondence Group to consider issues related to onboard carbon capture and develop a work plan to develop a regulatory framework for the use of onboard carbon capture systems, except for matters related to accounting for CO_2 captured on board ships. Among the topics the Correspondence Group will address are:

- Review of the existing IMO regulatory framework to identify existing instruments to be amended and potential additional guidelines
- Consider the energy consumption of onboard carbon capture units, the overall net GHG balance and the transfer of captured material onshore
- Reflect on carbon capture in existing IMO instruments such as Energy Efficiency Design Index (EEDI), Energy Efficiency Existing Ship Index (EEXI) and Carbon Intensity Indicator (CII)

The outcome of the Correspondence Group will be presented at MEPC 83 for further consideration.

MEPC.1/Circ.913

MEPC.395(82)

MEPC.390(81)

ADOPTED BY IMO

AIR POLLUTION AND ENERGY EFFICIENCY

AMENDMENTS TO THE IMO DATA COLLECTING SYSTEM (DCS)

Approved: 4 October 2024 (MEPC 82)

The IMO at MEPC 81 adopted amendments to Appendix IX of MARPOL Annex VI, introducing increased data granularity requirements, including, among other things, the reporting of fuel consumption per consumer type and data on transport work. These amendments are expected to enter into force on 1 August 2025, while also inviting the parties to consider their early application from 1 January 2025.

Noting the fact that the amendments are expected to enter into force halfway through a calendar year, which would result in two distinct levels of granularity for the data gathered in that calendar year, the IMO approved circular MEPC.1/Circ.913, providing the following guidance on the timeline for the application of those amendments:

- For ships flying the flag of the Administration that implements the amendments early (1 January 2025), revise and verify the Ship Energy Efficiency Management Plan (SEEMP) prior to 1 January 2025 and collect data with increased granularity throughout the entire year of 2025 and beyond.
- For ships flying the flag of the Administration that implements the amendments on the entry-into-force date (1 August 2025), revise and verify the SEEMP prior to 1 January 2026 and collect data with the existing level of granularity for the entire year of 2025 and with increased granularity from 1 January 2026.
- For ships delivered on or after 1 August 2025, collect data at the enhanced level of granularity from the date of delivery and onward.

AMENDMENTS TO THE SEEMP GUIDELINES

Adopted: 4 October 2024 (MEPC 82)

Following the amendments to Appendix IX of MARPOL Annex VI that introduce increased data granularity, the IMO adopted the 2024 *Guidelines for the Development of a Ship Energy Efficiency Management Plan (SEEMP)* (Resolution MEPC.395(82)) to ensure the smooth implementation of the amendments. The 2024 Guidelines introduce provisions to Section 7 to identify possible methods for the collection of fuel oil consumption per consumer type, clarify that the laden distance should be calculated as the distance sailed when the ship is loaded and provide a definition of the transport work metric to be reported for each ship type. Furthermore, guidance is provided on calculating the total amount of onshore power supplied, which shall be recorded based on relevant documents by the power supplier or the bill from the port or electricity provider and is to be included in the electronic record to be retained on board.

AMENDMENTS TO THE 2021 GUIDELINES ON THE SHAFT POWER LIMITATION (SHAPOLI) AND ENGINE POWER LIMITATION (EPL) SYSTEM TO COMPLY WITH THE EEXI REQUIREMENTS AND USE OF A POWER RESERVE

Adopted: 22 March 2024 (MEPC 81)

At MEPC 81, the IMO adopted the *Amendments to the 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)). These amendments introduce:

- Additional technical requirements for the EPL/SHaPoLi system to enable its consistent use through the utilization of an alarm system
- A new provision that in case of a short-term unintentional exceedance of the power limit, the system may inhibit the initiation of the exceedance alarm for up to five minutes
- The use of the power reserve is distinguished from the precautionary unlimiting of an EPL/SHaPoLi system, where an EPL/SHaPoLi override is activated pre-emptively when hazards are anticipated
- Amendments in paragraph 2.2.1 to clarify the condition in which the use of a power reserve would be allowed

- A new paragraph 6 specifying the additional documents needed to be updated to include the ship's maneuvering characteristics in both scenarios of having all shaft and engine power available and limited, namely the pilot card, the wheelhouse poster and the maneuvering booklet

More information can be found on the ABS EPL/SHaPoLi webpage.

REDUCTION OF THE IMPACT ON THE ARCTIC OF EMISSIONS OF BLACK CARBON (BC) FROM INTERNATIONAL SHIPPING

Adopted: 4 October 2024 (MEPC 82)

In MEPC 82, the IMO adopted Resolution MEPC.393(82), *Guidance on Best Practice on Recommendatory Goal-Based Measures to Reduce the Impact on the Arctic of Black Carbon Emissions from International Shipping*, which is intended to assist ship operators/companies in their efforts to reduce BC emissions from their ships operating in or near the Arctic in measurable and concrete ways. In addition, the IMO adopted Resolution MEPC.394(82), *Guidelines on Recommendatory Black Carbon Emission Measurement, Monitoring and Reporting*, providing recommendations for the measurement, monitoring and reporting of BC emissions data from marine diesel engines or exhaust gas treatment systems.

ADOPTION OF THE CANADIAN ARCTIC AND NORWEGIAN SEA EMISSIONS CONTROL AREAS (ECAS) FOR NITROGEN OXIDES (NO_x), SULFUR OXIDES (SO_x) AND PARTICULATE MATTER (PM)

Adopted: Entry into force 1 March 2026

The IMO adopted Resolution MEPC.392(82) – *Amendments to MARPOL Annex VI (Designation of the Canadian Arctic and the Norwegian Sea as Emission Control Areas for Nitrogen Oxides, Sulfur Oxides and Particulate Matter, as appropriate)*. The designation of the ECAs is necessary to protect public health and ecologically sensitive Arctic ecosystems by reducing harmful air pollution and emissions. These new ECAs also aim to address long-standing concerns of BC emissions in the Arctic region. The entry into force date of the Canadian Arctic and Norwegian Sea ECAs will be 1 March 2026.

Canadian Arctic ECA

- **SO_x and PM:**
  The Canadian Arctic ECA will impose a fuel oil sulfur content limit of 0.10 percent by mass.
- **NO_x:**
  The Canadian Arctic ECA will apply to ships constructed (keel laying date) on or after 1 January 2025 and will be operating in the Canadian Arctic ECA.

Norwegian Sea ECA

- **SO_x and PM:**
  The Norwegian Sea ECA will impose a fuel oil sulfur content limit of 0.10 percent by mass.
- **NO_x:**
  The Norwegian Sea ECA will apply to ships constructed on or after 1 March 2026 and operating in the Norwegian Sea ECA. Ships constructed on or after 1 March 2026 will mean a ship:
  1. For which the building contract is placed on or after 1 March 2026
  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
  3. The delivery of which is on or after 1 March 2030

ONGOING DISCUSSION

REVIEW PLAN FOR SHORT-TERM GHG REDUCTION MEASURE

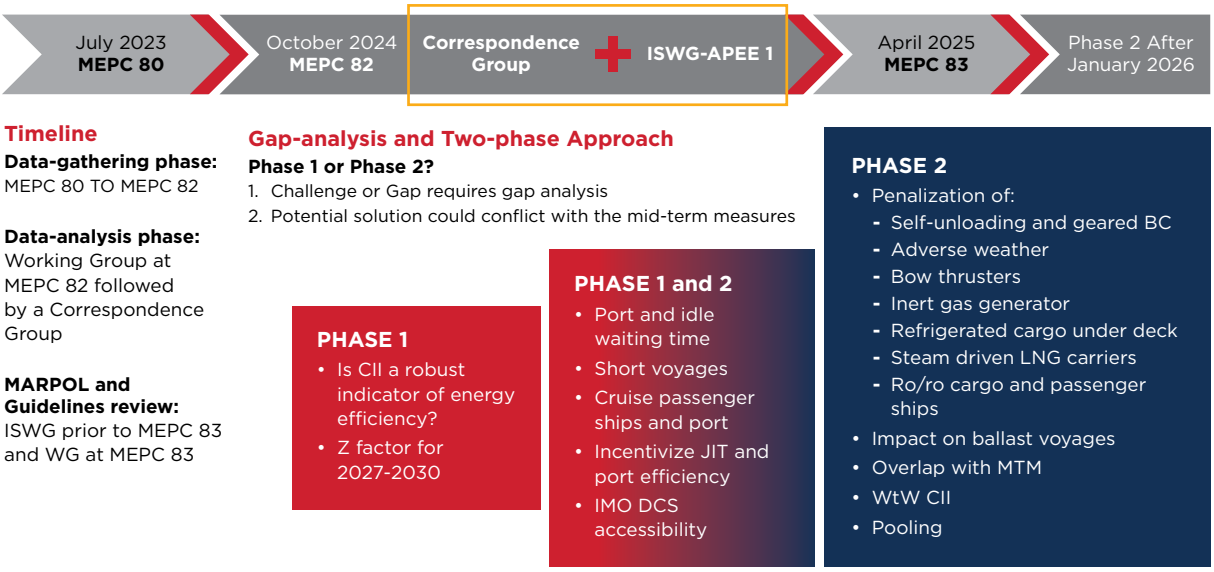
In Development: 2026 and Onward

At MEPC 80, the IMO agreed to the following timeline for the review of the short-term measures:

- From MEPC 80 to MEPC 82, the data-gathering phase
- At MEPC 82, a working group should analyze the data continued by a Correspondence Group
- An intersessional working group between MEPC 82 and MEPC 83, along with a working group at MEPC 83, to review the MARPOL Convention and the Guidelines

At MEPC 82, the IMO agreed on a way forward for the review of the short-term GHG reduction measure and decided to conduct the review based on a gap analysis and a two-phase approach addressing some issues prior to 1 January 2026 (phase 1), whereas other issues may be extended after 1 January 2026 (phase 2).

After extensive discussion, the IMO agreed to the following indicative timeframe:



According to Regulation 25.3 of MARPOL Annex VI, the EEXI framework must also be completed by 1 January 2026. In this regard, the IMO invited interested member States and international organizations to submit data and proposals for assessing its effectiveness.

MARINE BIOSAFETY

TEMPORARY STORAGE OF GREY WATER OR TREATED SEWAGE IN BALLAST TANKS

ADOPTED BY IMO

BWM.2/Circ.82

Approved: Effective from March 2024

The IMO approved circular BWM.2/Circ.82 on the *Guidance on the Temporary Storage of Grey Water (GW) and/or Treated Sewage (TS) in Ballast Water Tanks*. The guidance is required for exceptional situations where, to comply with coastal State regulations or inadequate reception facilities at ports, drydocks and terminals, it may become necessary to store TS or GW in ballast water tanks.

The guidelines provide general guidance for using a particular ballast water tank for the temporary storage of TS/GW to prevent contamination of the ballast system by TS/GW and accidental discharge of TS/GW within restricted waters. They also provide a procedure for restoring a ballast water tank from TS/GW storage back to the ballast water service.

APPLICATION OF THE BALLAST WATER MANAGEMENT (BWM) CONVENTION TO SHIPS OPERATING AT PORTS WITH CHALLENGING WATER QUALITY

MEPC.387(81)

Adopted: Effective from March 2024

The IMO adopted Resolution MEPC.387(81), *Interim Guidance on the Application of the BWM Convention to Ships Operating in Challenging Water Quality Conditions*. The purpose of the interim guidance is to assist ships in planning for compliance with the BWM Convention and the D-2 discharge standard when a type-approved ballast water management system (BWMS) encounters operational limitations or has difficulty meeting operational demand in challenging water quality (CWQ) conditions and may also serve as a practical operational guide for ships and voyage planners in this regard. It guides ships operating in CWQ regarding pre-planning, assessment, troubleshooting and mitigation, CWQ triggers, alternatives to bypass, bypass procedure decontamination, communication and record-keeping.

The document also includes sections intended to guide Administrations, port States and BWMS manufacturers in providing appropriate support and oversight to ships before, during and after CWQ operations.

USE OF ELECTRONIC BALLAST WATER RECORD BOOK

Adopted: Entry into force 1 October 2025

The IMO adopted the MEPC Resolution MEPC.383(81), *Amendments to the International Convention for the Control and Management of Ship's Ballast Water and Sediments, 2004 (Use of Electronic Record Books (ERB))*, amending the International Convention for the Control and management of Ship's Ballast Water and Sediments, 2004, Appendix II (Form of Ballast Water Record Book).

Regulation A-1 Definitions is amended to insert a new paragraph 9, which defines an ERB as "a device or system, approved by the Administration, used to electronically record the entries for each ballast water operation as required under this Convention in lieu of a hard copy record book."

Furthermore, Regulation B-2 is amended to require that electronic BWRBs be approved by the flag Administration in accordance with the IMO's guidelines specified in resolution MEPC.372(80). It also provides that if the record book entries are in electronic form, each group of electronic entries is to be verified by the master in a timely manner.

More information can be found on the ABS ERB webpage.

REVISION OF GUIDANCE ON BALLAST WATER RECORD-KEEPING AND REPORTING

Approved: Effective from October 2024

The IMO approved circular BWM.2/Circ.80/Rev.1 2024 *Guidance on Ballast Water Record-Keeping and Reporting*, providing additional scenarios 3 and 4 related to operations in CWQ in Appendix I of the guidance.

Following the adoption at MEPC 81 of the *Interim Guidance on the Application of the BWM Convention to Ships Operating in Challenging Water Quality Conditions* (resolution MEPC.387(81)), the revised guidelines incorporated two CWQ-related scenarios into the Ballast Water Record Book to guide the operators as to the appropriate entries in the record book.

MODIFICATIONS TO BWMS WITH EXISTING TYPE APPROVAL

Approved: Effective from October 2024

The IMO approved circular BWM.2/Circ.43/Rev.2 2024 *Guidance for Administrations on the Type Approval Process for Ballast Water Management Systems.*

Recognizing that the BWMS Code provides limited guidance regarding approval of modifications to a BWMS after type approval has been granted, the IMO agreed that this should be addressed with interim guidance to facilitate a consistent process for approval of modifications to BWMS by different Administrations. The most substantial part of this revision consists of the introduction of an appendix containing three tables covering, respectively, examples of major components, changes or modifications affecting major components and minor components.

The guidelines relate only to BWMS type approvals and not individual shipboard installations, with the latter being a survey and certification matter.

POLLUTION PREVENTION

ADOPTED BY IMO

AMENDMENTS ON REVISED REPORTING PROCEDURES FOR LOSS OF CONTAINERS

Adopted: Entry into force 1 January 2026

The IMO adopted MEPC Resolution.384(81), *Amendments to Protocol I of MARPOL Concerning Reporting Procedures for the Loss of Containers*, introducing amendments to Article V of Protocol I – Provisions Concerning Reports on Incidents Involving Harmful Substances to add a new paragraph 3 with reporting procedures "in case of the loss of freight container(s), the report required by article II(1)(b) shall be made in accordance with the requirements on danger messages as provided for in regulations V/31 and V/32 of the International Convention for the Safety of Life at Sea, 1974."

MEPC CIRCULAR ON RECOMMENDATIONS FOR THE CARRIAGE OF PLASTIC PELLETS BY SEA IN FREIGHT CONTAINERS

Approved: Effective from March 2024

The IMO approved circular MEPC.1/Circ.909 on *Recommendations for the Carriage of Plastic Pellets by Sea in Freight Containers* as the first step aimed at reducing the environmental risks associated with the carriage of plastic pellets in packaged form by sea. The circular outlines recommendations for packaging to prevent any damage or loss of contents that may be caused under normal transport conditions by vibration or acceleration forces. Additionally, the recommendations provide cargo information that identifies the cargo, as well as transport information for the special stowage of the freight containers containing plastic pellets.

REDUCTION OF UNDERWATER NOISE FROM COMMERCIAL SHIPPING

Approved: Effective from 1 December 2024

The IMO approved amendments to the *Revised Guidelines for the Reduction of Underwater Noise from Shipping to Address Adverse Impacts on Marine Life* (MEPC.1/Circ.906/Rev.1), adding the underwater radiated noise (URN) planning reference chart as a new Appendix IV in section 5. This chart is part of the URN Management Planning and aims to raise awareness and visualize the URN management planning process. Furthermore, the committee agreed to a three-year Experience Building Phase (EBP) for the revised guidelines and invited member States and international organizations to submit to the committee information, observations, comments and recommendations based on the practical experience gained with the application of the revised guidelines.

GUIDELINES ON MITIGATION MEASURES TO REDUCE RISKS OF USE AND CARRIAGE FOR USE OF HEAVY FUEL OIL (HFO) AS FUEL BY SHIPS IN ARCTIC WATERS

Approved: Effective from October 2024

The IMO approved circular MEPC.1/Circ.915 *Guidelines on Mitigation Measures to Reduce Risks of Use and Carriage for Use of Heavy Fuel Oil as Fuel by Ships in Arctic Waters.*

The purpose of the guidelines is to provide ship operators of ships planning voyages in the Arctic with recommendations on measures to reduce the risk of spills while using or carrying HFO for use as fuel in Arctic waters and to assist Administrations of the parties to MARPOL, the coastlines of which border on Arctic waters, 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. The section applicable to ship operators guides navigational measures, ship operations, HFO bunkering, communication, HFO spill preparedness, early detection and response, familiarization, training and drills.

IMO MARITIME SAFETY

SAFETY AND CONSTRUCTION

ADOPTED BY IMO

NEW SOLAS CHAPTER XV AND IP CODE: SAFE CARRIAGE OF INDUSTRIAL PERSONNEL

Adopted – Entry into force 1 July 2024

A new SOLAS Chapter XV that regulates the safe carriage of industrial personnel is established and applies to cargo ships and high-speed cargo craft of 500 gross tonnage (gt) and upwards on international voyages that carry more than 12 industrial personnel. Chapter XV defines industrial personnel as people transported or accommodated on board to perform offshore industrial activities on board other ships and/or offshore facilities.

This amendment to SOLAS coincides with the adoption of the Code of Safety for Ships Carrying Industrial Personnel, or IP Code. The IP Code addresses the safe transfer of personnel, subdivision and stability, machinery installations, electrical installations, periodically unattended machinery spaces, fire safety, life-saving appliances and dangerous goods.

Existing ships that were constructed before the entry into force of SOLAS Chapter XV and that comply with the Interim Recommendations on the *Safe Carriage of More Than 12 Industrial Personnel on Vessels Engaged on International Voyages* will be given a grace period before selected regulations in the IP Code come into force.

Compliance will be documented by issuance of an Industrial Personnel Safety Certificate and accompanying Record of Equipment (Form IP).

More information can be found on the ABS Safe Carriage of Industrial Personnel webpage.

AMENDMENTS TO THE IGC CODE: HIGH MANGANESE AUSTENITIC STEEL

Adopted: Enters into force 1 January 2026

The IGC Code has been amended to allow the use of high manganese austenitic steel for cryogenic service, as per MSC.523(106). Table 6.3 now includes high manganese austenitic steel, which can be used to construct plates, sections and forgings for cargo tanks, secondary barriers and pressure vessels, following the conditions in MSC.1/Circ.1599/Rev.2.

AMENDMENTS TO THE IGF CODE: HIGH MANGANESE AUSTENITIC STEEL

Adopted: Enters into force 1 January 2026

Amendments to the IGF Code have introduced high manganese austenitic steel as a new construction material. Table 7.3 has been updated to include high manganese austenitic steel, which can now be used for fuel containment and piping systems, following the requirements in MSC.1/Circ.1599/Rev.2.

SOLAS CHAPTER V: ELECTRONIC INCLINOMETERS ON CONTAINERSHIPS AND BULK CARRIERS

Adopted: Enters into force 1 January 2026

The IMO has amended SOLAS Chapter V to require newly constructed containerships and bulk carriers of 3,000 gt and above to carry an electronic inclinometer. This device will enable the voyage data recorder (VDR) to capture roll motion information for incident investigations and provide critical stability data to navigational officers, potentially preventing cargo shifting or loss in heavy weather. The regulation does not apply to cargo ships carrying bulk occasionally or general cargo ships with containers on deck. Additionally, electronic or mechanical backup systems for inclinometers are not required, as they are deemed non-critical for navigation safety.

AMENDMENTS TO LSA CODE AND MSC.81(70): VENTILATION OF TOTALLY ENCLOSED LIFEBOATS

Adopted: Enters into force 1 January 2026

The IMO adopted amendments to the LSA Code requiring totally enclosed lifeboats to have ventilation operable from the inside at a rate of not less than five cubic meters (m^3) per hour per person for 24 hours. These requirements apply to lifeboats installed on or after 1 January 2029.

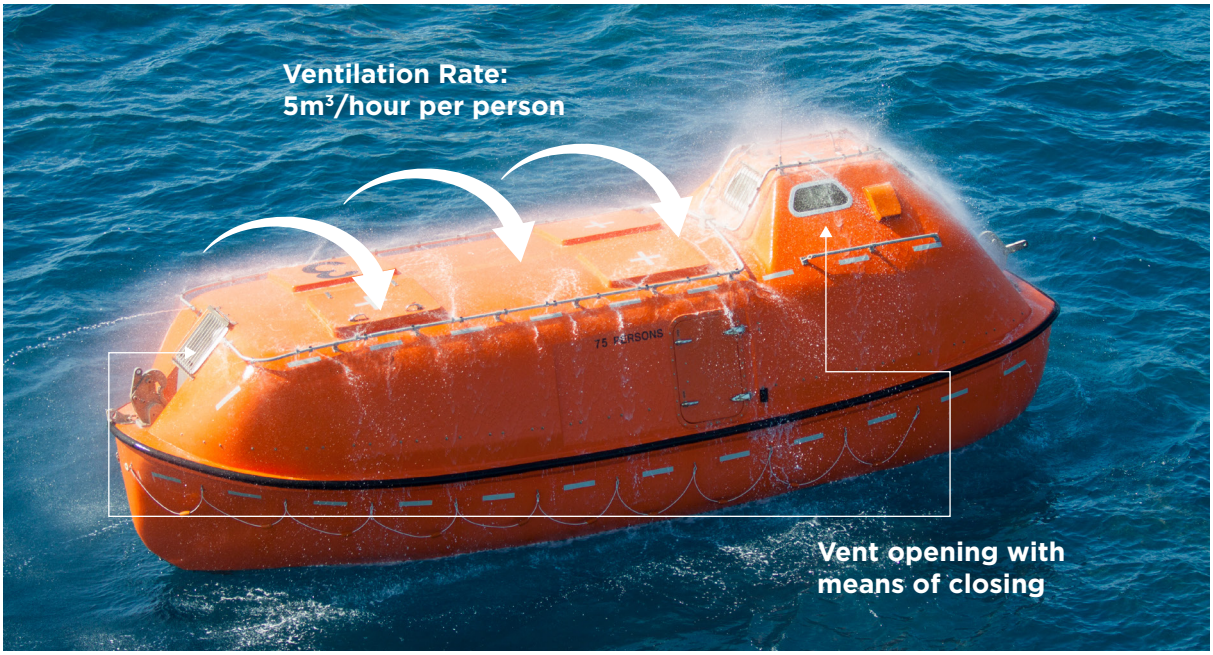


Figure 1: Ventilation of totally enclosed lifeboat.

NEW SOLAS REGULATIONS FOR ONBOARD LIFTING APPLIANCES AND ANCHOR HANDLING WINCHES (OLAW)

Adopted: Entry into force 1 January 2026

The IMO adopted Resolution MSC.532(107), amending the SOLAS Convention to introduce new requirements for lifting appliances and anchor handling winches under SOLAS regulation II-1/3-13. These regulations apply to both new and existing ships.

The new regulations prescribe requirements for the design, construction and installation of lifting appliances and anchor handling winches.

- Lifting Appliances: Defined as all load-handling equipment on ships, including cranes for handling cargo, stores, hatch covers, engine-room equipment, cargo hoses, tender boats and personnel (via cranes).
- Anchor Handling Winches: These winches, distinct from a ship's windlasses, are used for deploying, recovering, and repositioning anchors and mooring lines during subsea operations.

Regardless of the installation date, all lifting appliances and anchor handling winches must undergo operational testing, thorough examination, inspection, operation and maintenance. New installations of lifting appliances will be required to meet the requirements of a classification society, and new installations of anchor handling winches will be to the administration's satisfaction.

The new regulation does not apply to lifting appliances on mobile offshore drilling units or lifesaving launching appliances per the LSA Code. Existing equipment must be tested by the first renewal survey after the amendment enters into force.

Circular	Title
MSC.1/Circ.1663	*Guidelines for Lifting Appliances* • Recommendations for design and testing • Guidance on operations and record-keeping through a register of lifting appliances to be kept on board • Addresses loose gear utilized with lifting appliances and recommends a proof test and thorough annual examination of this equipment
MSC.1/Circ.1662	*Guidelines for Anchor Handling Winches* • Provides design, testing and maintenance recommendations • Addresses both anchor handling winches and associated loose gear

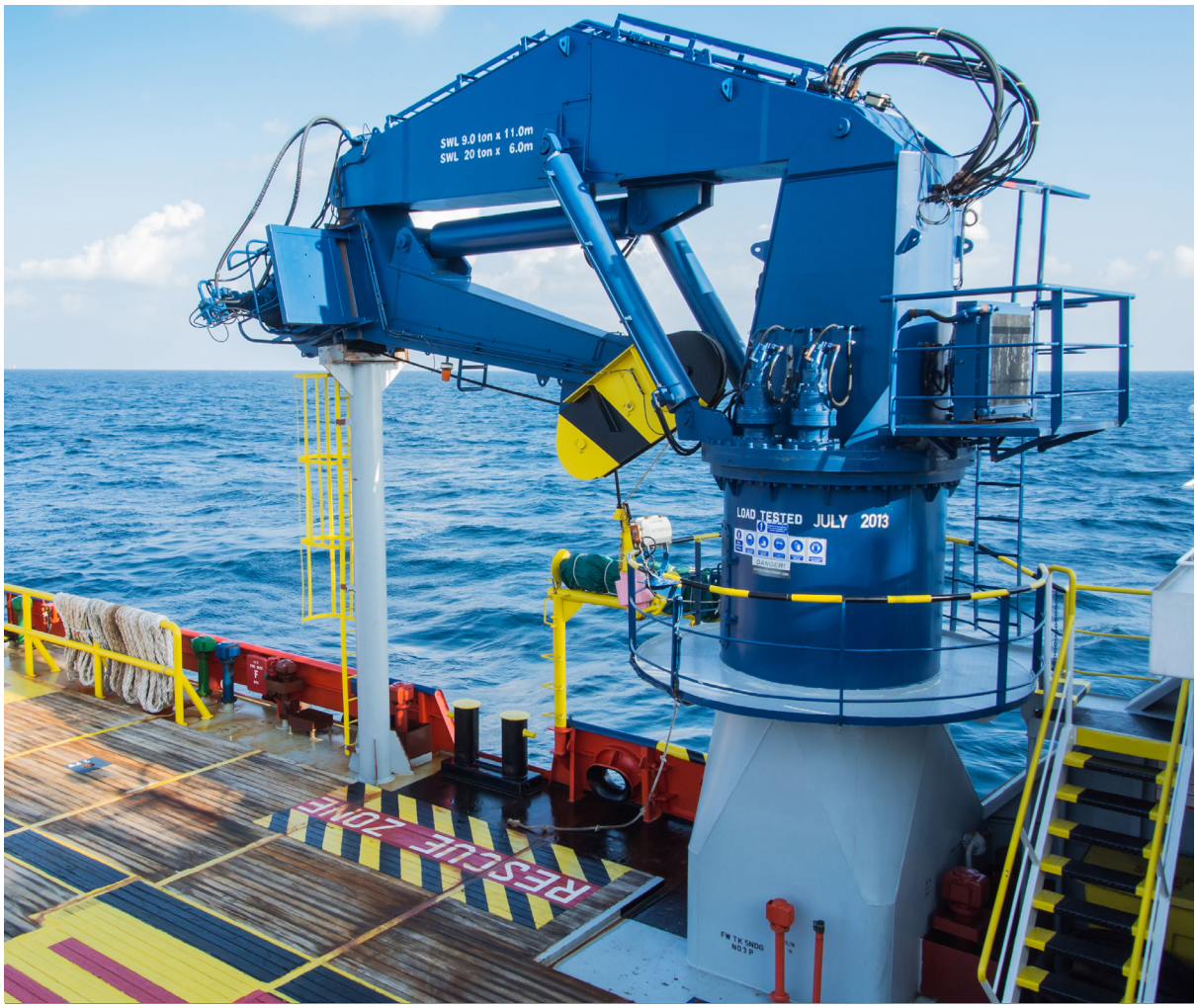


Figure 2: Shipboard lifting appliance.

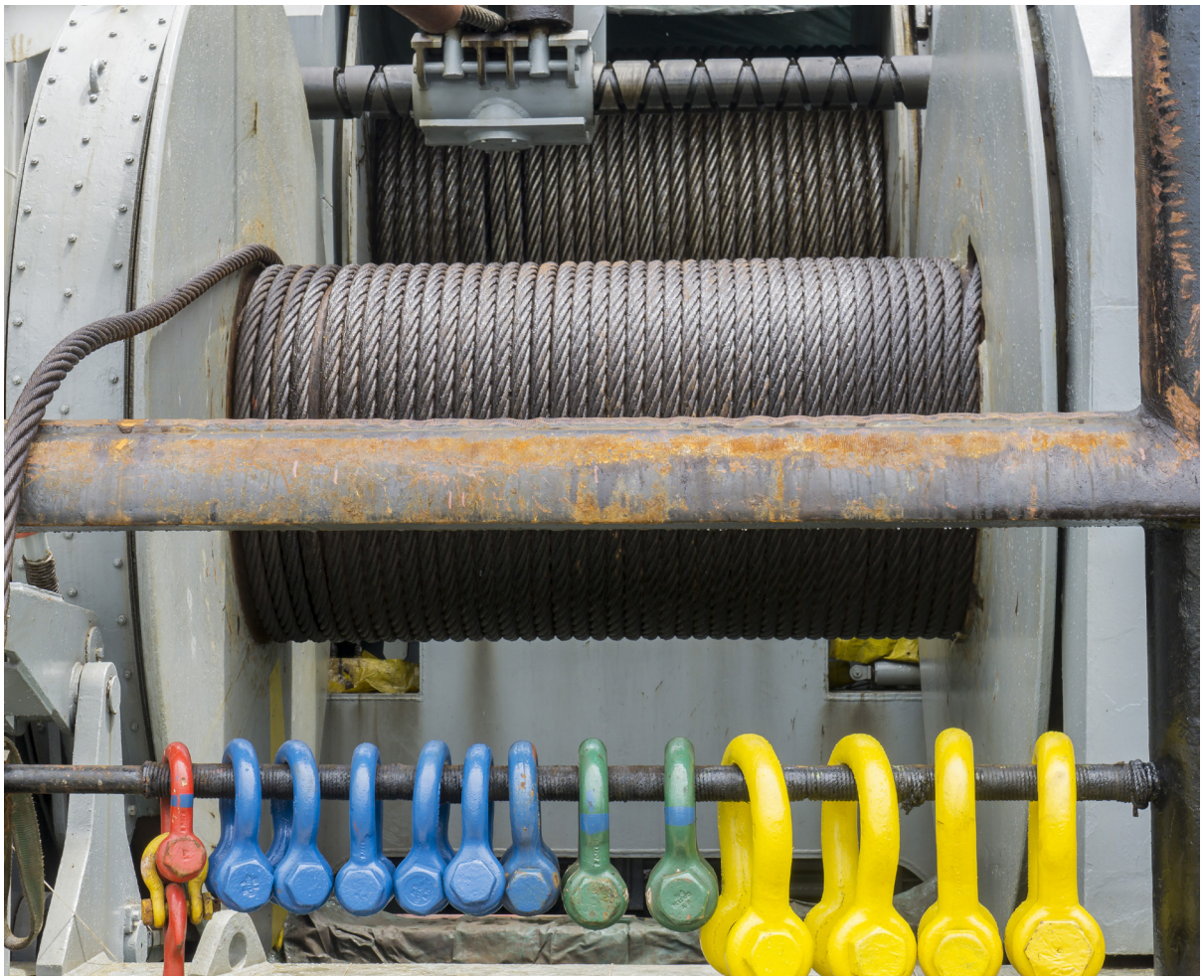


Figure 3: Anchor handling winch.

AMENDMENTS TO FSS CODE AND CHAPTER II-2: FIRE SAFETY ON SHIPS FITTED WITH VEHICLE, SPECIAL CATEGORY, OPEN AND CLOSED RO/RO SPACES AND WEATHER DECKS INTENDED FOR THE CARRIAGE OF VEHICLES

Adopted: Effective from 1 January 2026

Amendments to SOLAS Chapter II-2 and the associated codes were adopted following the EMSA FIRESAFE studies, impacting fire protection for new and existing roll on/roll off (ro/ro) ships. Key measures include fixed water-based fire-extinguishing systems, closing devices for ro/ro space openings, continuous video monitoring, and safety distances from accommodations and openings of ro/ro spaces and weather ro/ro deck.

These amendments will enter into force on 1 January 2026, for new ships and some of the changes also affect existing ships. Existing ships must comply no later than their first annual survey, first periodical survey or first renewal survey after 1 January 2028.

PROTECTION OF ACCOMMODATION AND SERVICE SPACES AND CONTROL STATIONS

Adopted: Effective from 1 January 2026

Amendments to SOLAS Chapter II-2, Part C, were adopted to enhance fire detection in control stations and cargo control rooms. Changes to regulation 7 include:

- Paragraph 5.2: For passenger ships carrying more than 36 passengers, "fire" is added before the alarm system requirement for low-risk spaces.
- Paragraph 5.5: Cargo ships now require fire detection and alarm in accordance with methods IC, IIC and IIIC in control stations and cargo control rooms, effective for ships constructed on or after 1 January 2026. Older ships must adhere to previous requirements.

SINGLE FALL AND HOOK SYSTEMS WITH ON-LOAD RELEASE CAPABILITY

Adopted: Effective from 1 January 2026

Lifeboats and rescue boats with single fall and hook systems have similar risks of accidental release as those with twin fall and hook systems, necessitating comparable safety standards. In 2020, paragraph 4.4.7.6.17 of the LSA Code was modified to address this. However, removing a reference to paragraph 4.4.7.6.8 led to inappropriate applications for some off-load hooks.

Amendments to Chapter IV of the LSA Code were adopted to clarify this issue, retaining the changes to paragraph 4.4.7.6.17 and amending paragraph 4.4.7.6.8. These amendments apply to life-saving appliances installed on or after 1 January 2026.

Figure 4: Rescue boat of an oceangoing freighter.

AMENDMENTS TO THE INTERNATIONAL GRAIN CODE (RESOLUTION MSC.23(59))

Adopted: Effective from 1 January 2026

Since its establishment in 1991, the Grain Code, enforced under SOLAS Chapter VI Part C, has seen no amendments for over 30 years. Recent updates introduce a new loading condition: Especially suitable compartment partly filled in the area of the hatch opening, with ends untrimmed. This definition refers to a compartment that is not filled to the maximum extent possible in way of the hatch opening but is filled to a level equal with or above the bottom edge of the hatch end beams and has not been trimmed outside the periphery of the hatch opening by the provisions of regulation A /10.4 of the Grain Code. In such compartments, the bulk grain shall be filled to a level equal to or above the bottom edge of the hatch end beams but may be at its natural angle of repose outside the periphery of the hatch opening.

Compartments may qualify for this classification if "especially suitable," as defined in regulation A/2.7, in which case dispensation may be granted from trimming the ends of that compartment. Additional amendments in Part B provide guidance on calculating the assumed slope of the cargo for a volumetric heeling moment and require relevant information in the stability booklet for ships loaded under these new conditions.

EMERGENCY TOWING EQUIPMENT FOR SHIP TYPES OTHER THAN TANKERS: NEW REGULATION II-1/3-4

Adopted: Effective from 1 January 2028

Concerns about machinery failure and grounding risks have led to the adoption of amendments to SOLAS Chapter II-1. These amendments require all new ships (other than tankers) of at least 20,000 gt to have emergency towing arrangements. Ships must enable rapid deployment without main power and allow easy connection to the towing vessel. The towing arrangements must be strong enough to withstand expected forces in bad weather, and their design and testing must be approved by the Administration based on established guidelines.

Figure 5: Towing of containership.

IN-WATER PERFORMANCE OF SOLAS LIFEJACKETS

Adopted: Effective from 1 January 2026

Following the tragic deaths of three sailors while using SOLAS lifejackets in favorable conditions, investigations revealed that existing design and testing standards were inadequate. In response, amendments to Chapter II of the LSA Code were adopted, introducing new lifejacket requirements:

- A minimum buoyancy of 150 Newtons
- The ability to turn an unconscious person face-up and to keep lifejackets securely in place

These amendments will take effect on 1 January 2026, for all life-saving appliances installed afterward.

LOWERING SPEED OF SURVIVAL CRAFT AND RESCUE BOATS

Adopted: Effective from 1 January 2026

Amendments to paragraphs 6.1.2.8 and 6.1.2.10 of Chapter VI of the LSA Code were adopted to address the lowering speed for fully loaded survival craft and rescue boats. The amendments establish a maximum lowering speed of 1.3 m/s and a minimum of 1.0 m/s, acknowledging the challenges of larger cargo ships with higher launching heights. These amendments will come into effect on 1 January 2026 and will apply to all life-saving appliances installed on or after that date, including those for ships with building contracts placed after this date.

VARIOUS AMENDMENTS TO THE IGF CODE

Adopted: Effective from 1 January 2026

The Committee adopted several amendments to the IGF Code aimed at enhancing safety and operational standards for ships using low-flashpoint fuels. Key changes include updated requirements for venting, pressure relief and ventilation, as well as provisions addressing fuel supply failures and bunkering line design pressures. Additionally, amendments focus on general pipe design and specifications for bunkering manifolds and level indicators for liquefied gas fuel tanks. These amendments will apply to ships constructed after 1 January 2026. In cases where there is no explicit reference to the application of these amendments, the same will apply to existing ships from 1 January 2026 and onward.

CARRIAGE OF LIQUIFIED HYDROGEN IN BULK

Adopted: Effective from May 2024

The Committee adopted revised Interim Recommendations for the *Carriage of Liquefied Hydrogen in Bulk*, which sets the groundwork for future minimum requirements for transporting liquefied hydrogen. These recommendations aim to facilitate a tripartite agreement among relevant Administrations under the IGC Code and introduce new minimum standards for cargo containment systems, including those utilizing vacuum insulation. To address emerging technologies in these systems, the Committee decided to extend the target completion year to 2026. Additionally, the need for specific regulations for new technologies and the potential risks of amending existing tank requirements were acknowledged, prompting further consideration by the CCC Sub-Committee.

AMENDMENTS TO THE IMDG CODE (42-24)

Adopted: Effective from 1 January 2026

The International Maritime Dangerous Goods (IMDG) Code has been updated through Amendment 42-24, which will be included in the 2024 edition. This amendment introduces new and revised definitions for various terms, such as recycled plastic material and sodium-ion batteries, and updates the classification of dangerous goods. New substances have also been added, including different types of peroxides. Additionally, a revised EmS Guide will be prepared for dissemination, with a voluntary application date of 1 January 2025, and a mandatory entry-into-force date of 1 January 2026.

AMENDMENTS TO THE IMSBC CODE (07-23)

Adopted: Effective from 1 January 2025

The IMO amended the IMSBC Code, adding new cargo schedules for Materials Hazardous only in Bulk (MHB), including direct reduced iron and pelletized electric arc furnace dust. Fish meal has been reclassified from Class 9 dangerous goods to MHB. These amendments take effect on 1 January 2025 but can be voluntarily implemented beginning from 1 January 2024, with flag Administration approval. Ship operators can add these new cargoes to their Certificate of Compliance, subject to meeting survey requirements.

AMENDMENTS TO SOLAS CHAPTER II-2: PROVISIONS TO PROHIBIT THE USE OF FIREFIGHTING FOAMS CONTAINING PERFLUOROOCTANE SULFONIC ACID (PFOS)

Adopted: Effective from 1 January 2026

The IMO amended SOLAS Chapter II-2 to prohibit firefighting foams containing PFOS due to its toxicity. This prohibition affects all fire extinguishing systems and applies to new and existing ships, effective 1 January 2026. Ships constructed before 1 January 2026 shall comply with the requirements prohibiting the use or storage of extinguishing media containing PFOS, no later than the first annual, periodical or renewal survey on or after 1 January 2026. The prohibited substance must be delivered to appropriate shore-based reception facilities when removed from the ship.

AMENDMENTS TO STCW CODE: NEW PROVISIONS ON BULLYING AND HARASSMENT

Adopted: Effective from 1 January 2026

Amendments to the STCW Code introduce a new competence for preventing and responding to bullying and harassment, including sexual assault and harassment (SASH). This training will be part of the basic requirements, requiring individuals to demonstrate competence in this area, in line with the Maritime Labour Convention (MLC), 2006, Guideline B4.3.1. All seafarers will need to complete relevant training to be deemed competent.

AMENDMENTS TO THE STCW-F CONVENTION AND THE NEW STCW-F CODE

Adopted: Effective from 1 January 2026

Resolution MSC.526(108) was adopted, amending the 1995 STCW-F Convention and introducing a new STCW-F Code for seafarers on fishing vessels. The revisions align the STCW-F Convention with the STCW Convention, addressing technological and regulatory developments. The STCW-F Code establishes clear standards for training, certification and watchkeeping for fishing vessel personnel on board seagoing fishing vessels flying the flag of a Party to the STCW-F Convention.

COMPREHENSIVE REVIEW OF THE STCW CONVENTION AND CODE

ONGOING DISCUSSION

In Development: 2026

The IMO aims to review the STCW Convention and Code to identify and update seafarer competencies and proficiency requirements in line with technological and regulatory developments. The review seeks to improve clarity and consistency in application, focusing on new competencies like psychological safety, preventing bullying and harassment, and addressing cultural and generational gaps. A target completion year of 2026 has been set, with a Correspondence Group to finalize the scope of work.

OPERATIONS

ELECTRONIC CERTIFICATES OF SEAFARERS

ADOPTED BY IMO

MSC.540(107)
MSC.1/Circ.1665

Adopted: Effective from 1 January 2025

The IMO has adopted amendments to the STCW Convention via Resolution MSC.540(107) to allow seafarers' certificates in both paper and electronic formats. Resolution MSC.541(107) clarifies that electronic certificates do not need traditional terms and physical marks like seals and signatures. Circular MSC.1/Circ.1665 outlines the responsibilities for verifying the authenticity of these certificates and highlights the necessity for internet access on ships for verification using methods like QR codes or unique tracking numbers.

REQUIREMENTS FOR MAINTENANCE, THOROUGH EXAMINATION, OPERATIONAL TESTING, OVERHAUL AND REPAIR OF LIFEBOATS AND RESCUE BOATS, LAUNCHING APPLIANCES AND RELEASE GEAR

MSC.559(108)
Lifeboats, Rescue Boats, Launching Appliances and Release Gear

Adopted: Effective from 1 January 2026

Amendments to paragraph 6.2.3 of the maintenance requirements for lifeboats (resolution MSC.402(96)) have been adopted to address new ventilation standards for totally enclosed lifeboats from resolution MSC.535(107). These amendments state that lifeboats, rescue boats and fast rescue boats must have their ventilation systems thoroughly examined and assessed for satisfactory condition and operation.

PREVENTION OF FIRE AND EXPLOSION

MSC.550(108)
All Ships

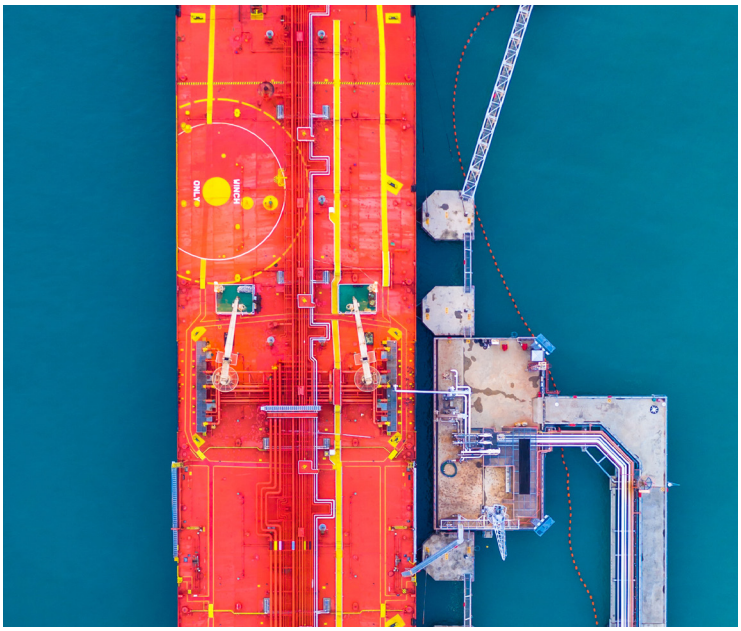
Adopted: Effective from 1 January 2026

Beginning in 2020, the IMO has addressed safety concerns related to non-compliant oil fuels. Following MSC 107's endorsement, MSC 108 introduced changes to SOLAS Regulation II-2/4 to mitigate fire and explosion risks. A new subparagraph, 2.1.9, mandates that oil fuel used on ships must not jeopardize safety, affect machinery performance or harm personnel. These amendments establish a legal framework within the SOLAS Convention to oversee oil fuel quality for safe ship operations.

AMENDMENTS TO THE 2011 ESP CODE: APPROVAL AND CERTIFICATION PROCEDURES OF FIRMS

Adopted: Effective from 1 January 2026

Amendments to the 2011 ESP Code were adopted, clarifying the roles of Administrations and Recognized Organizations in approving and certifying firms for hull thickness measurements. Concerns about the inconsistent definition of "Administration" limiting their involvement were addressed, confirming that Administrations retain authority in document review and certification processes.



ONGOING DISCUSSION

TECHNOLOGY AND AUTOMATION

DEVELOPMENT OF GOAL-BASED MASS CODE

The IMO is taking steps to regulate Maritime Autonomous Surface Ships (MASS) and has approved a report on a non-mandatory International Code of Safety for MASS. Key discussions focused on clarifying terminology between "MASS" and "Remote Operation." The draft MASS Code will apply to cargo ships under SOLAS, with safe operation responsibility remaining with the ISM Company. The IMO agreed to the revised roadmap for developing a goal-based code for MASS, with a view to further revision when necessary. It was agreed to retain MSC 111 (2026) as the target for finalization and adoption of the non-mandatory MASS Code.

Table of Contents of the Draft MASS Code

PART 1 Introduction		PART 2 Main Principles of MASS Code and MASS Functions		PART 3 Goals, Functional Requirements and Expected Performance	
Chapter 1	Purpose, Principles and Objectives	Chapter 5	Certificate and Survey	Chapter 17	Safety of Navigation
Chapter 2	Application	Chapter 6	Approval and Process	Chapter 18	Remote Operations
Chapter 3	Code Structure	Chapter 7	Risk Assessment	Chapter 19	Structure, Subdivision, Stability and Watertight Integrity
Chapter 4	Terminology and Definitions	Chapter 8	Operational Context	Chapter 20	Fire Protection, Fire Detection and Fire Extinction
		Chapter 9	System Design	Chapter 21	Life-Saving Appliances and Arrangements
		Chapter 10	Software Principles	Chapter 22	Special Measures to Enhance Maritime Security
		Chapter 11	Management of Safe Operations	Chapter 23	Search and Rescue
		Chapter 12	Connectivity	Chapter 24	Cargo Handling
		Chapter 13	Radio Communications	Chapter 25	Personnel Safety and Comfort
		Chapter 14	Alert Management	Chapter 26	Towing and Mooring
		Chapter 15	Human Element	Chapter 27	Machinery Installations
		Chapter 16	Maintenance and Repair	Chapter 28	Emergency Response

Road Map for Developing a Goal-Based Code for Maritime Autonomous Surface Ships (MASS)

MSC 110 — 2025 June

- Consideration of the outcome of the MASS-CG, established at MSC 108
- Further develop the non-mandatory MASS Code

MASS-ISWG 4 — 2025 Second Half

- Further develop the non-mandatory MASS Code

MSC 111 — 2026 May

- Consideration of the outcome of the MASS-ISWG 4
- Finalization and adoption of the new non-mandatory MASS Code
- Invite relevant subcommittees to review the non-mandatory Code

MSC 112 — 2026 December

- Develop a framework for an Experience-Building Phase (EBP) post adoption of the non-mandatory MASS Code

MSC 1XX — 2028

- Commence development of the mandatory MASS Code, based on the non-mandatory Code and result from the EBP and review conducted by the relevant sub-committees, and consider amendments to SOLAS (new chapter) for the Code's adoption

MSC 1XX

- Adoption of the mandatory Code (latest 1 July 2030 for entry into force on 1 January 2032)

ADOPTED BY IMO

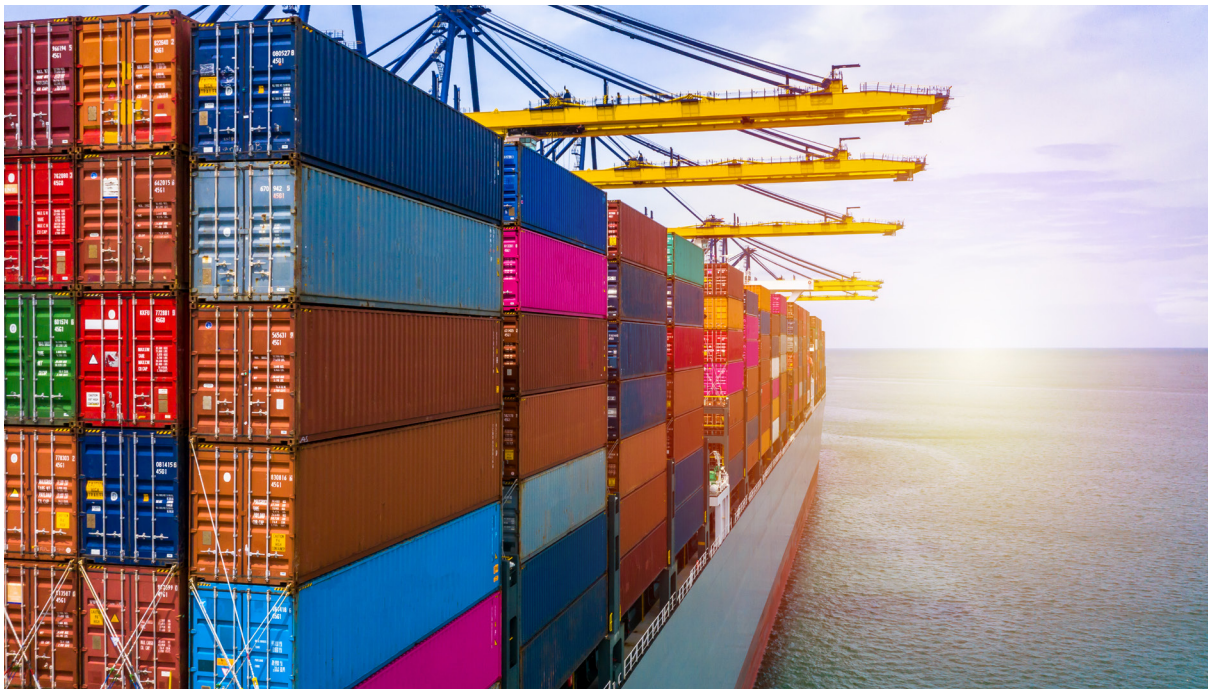
NAVIGATION AND COMMUNICATIONS

MANDATORY REPORTING OF LOST OR OBSERVED FREIGHT CONTAINERS

MSC.550(108)
All Ships

Adopted: Effective from 1 January 2028

Recent container losses have raised navigational concerns and highlighted the need for regulatory measures at the IMO level. Amendments to SOLAS regulations V/31.2 and V/32.3 were adopted to establish a reporting framework for lost containers at sea. Regulation V/31.2 outlines the roles of the ship's master, shipping company and flag Administrations regarding lost or drifting containers, while regulation V/32.3 specifies the required reporting information.



AMENDMENTS TO ECDIS PERFORMANCE STANDARDS (RESOLUTION MSC.530(106)) TO FACILITATE A STANDARDIZED DIGITAL EXCHANGE OF SHIPS' ROUTE PLANS

MSC.530(106)/Rev.1

Adopted: Effective from 1 January 2029

Revisions to the *Performance Standards for Electronic Chart Display and Information Systems (ECDIS)* (MSC.530(106)) now include a method for digitally exchanging ship route plans aimed at reducing workload and enhancing navigation safety. This standardized, cyber-secure route exchange will improve port efficiency, support slow-steaming and Just In Time Arrival (JIT), and reduce turnaround times, benefiting the environment and lowering costs in line with the IMO Initial GHG Strategy. It may also facilitate future automated or autonomous operations. Resolution MSC.530(106)/Rev.1 applies to new and existing ECDIS installations.

ONGOING DISCUSSION

IMPROVING SAFETY OF PILOT TRANSFER ARRANGEMENTS

Resolution A.1045(27) and MSC.1/Circ.1428, SOLAS Chapter V

In Development

The IMO received proposals to amend pilot transfer arrangements to improve safety and reduce accidents. These proposals focus on changes to SOLAS Chapter V Regulation 23 and supporting documents to enhance maintenance and inspection practices and clarify requirements for pilot ladders with accommodation ladders. The goal is to adopt SOLAS amendments before 1 July 2026, with an expected entry into force on 1 January 2028.

REGULATORY FRAMEWORK FOR THE SAFE USE OF ALTERNATIVE FUELS

The decarbonization trajectory cannot be met without the uptake of alternative fuels, such as ammonia, methanol and hydrogen, the adoption of which introduces new challenges with regard to the safety of the vessel and of the crew on board. To address these safety challenges, the IMO is working in parallel with the development of a regulatory framework for the safe use of those alternative fuels in the form of interim guidelines.

2024

MSC 109

Approve interim guidelines for safety of ships using ammonia as fuel.

2025

CCC 11
ISWG-AF 2

- Further develop/ finalize interim guidelines for safety of ships using hydrogen as fuel.
- If time permits, further develop/ finalize interim guidelines for safety of ships using methyl/ethyl alcohol as fuel, with a view toward developing mandatory instruments.
- If time permits, start discussion regarding the development of mandatory instruments regarding safety of ships using fuel cells.

2026

MSC 111

Approve interim guidelines for safety of ships using hydrogen as fuel.

2026

CCC 12

- Further consider the revision of the interim guidelines for safety of ships using methyl/ethyl alcohol as fuel, with a view toward developing mandatory instruments.
- Further develop/ finalize interim guidelines for safety of ships using low-flashpoint oil fuels.
- If time permits, further consider the development of mandatory instruments regarding safety of ships using fuel cells.
- Further consider amendments to the IGF Code regarding LNG.
- If time permits, consider the revisionof the interim guidelines on the safety of ships using ammonia as fuel.

2027

CCC 13

- Consider the revision of the interim guidelines on the safety of ships using ammonia as fuel.
- Finalize the revision of the interim guidelines for safety of ships using methyl/ethyl alcoholas fuel, with a view to developing mandatory instruments.
- Consider amendments to MSC.1/Circ. 1622 based on documents CCC 10/3/10 and CCC 10/NF.28

At this stage, the IMO has developed interim guidelines for the safe use of liquefied petroleum gas (LPG), methanol and fuel cells. In MSC 109, the interim ammonia guidelines were approved and the hydrogen guidelines are still under development. These guidelines are interim and, based on the feedback gained from their implementation, will be revised and once deemed mature, will be converted to mandatory instruments under the IGF Code.

INTERIM GUIDELINES FOR THE SAFE USE OF AMMONIA AS FUEL

ADOPTED BY IMO

MSC 109

Approved: MSC 109 (6 December 2024)

The IMO at MSC 109 approved the *Interim Guidelines for the Safe Use of Ammonia as Fuel*, which applies to ships using ammonia as fuel and does not address ships using ammonia cargo as fuel. Due to the toxicity of ammonia, the guidelines present several key concepts that must be highlighted:

- **Toxic area and space classification**
  There is a clear distinction between "toxic areas" and "toxic spaces," with the former located on open deck and the latter within ship structural boundaries. Toxic area boundaries must be set based on prescriptive distances in parallel with gas dispersion analysis to demonstrate the ammonia concentrations.

- **Safe Haven**
  The guidelines introduce the requirement for a safe haven, a space designed for the purpose of minimizing the risk of exposure to ammonia during the release of ammonia, with a cumulative total capacity to accommodate all people on board.
- **Ammonia Release Mitigation System (ARMS)**
  In normal operation, there should be no direct release of ammonia. However, when ammonia release is foreseeable and controllable but necessary, there should be provisions for ammonia treatment systems to minimize the amount of released ammonia. The discharge criteria for the ammonia release mitigation system should be set below 110 ppm.

INTERIM GUIDELINES FOR LPG AS FUEL

Approved: Effective from 1 July 2024

The IMO approved the *Interim Guidelines for the Use of LPG Cargo as Fuel* (MSC.1/Circ.1679) with a view toward preparing draft amendments to the IGC Code in parallel after gaining experience from the implementation of the guidelines. The scope of the guidelines is limited to gas carriers using LPG cargo as fuel, and additional safety provisions are also to be developed in the future for ships using LPG as fuel while carrying cargoes listed in Chapter 19 of the IGC Code other than LPG.

USE OF AMMONIA CARGO AS FUEL

Expected entry into force 1 July 2026

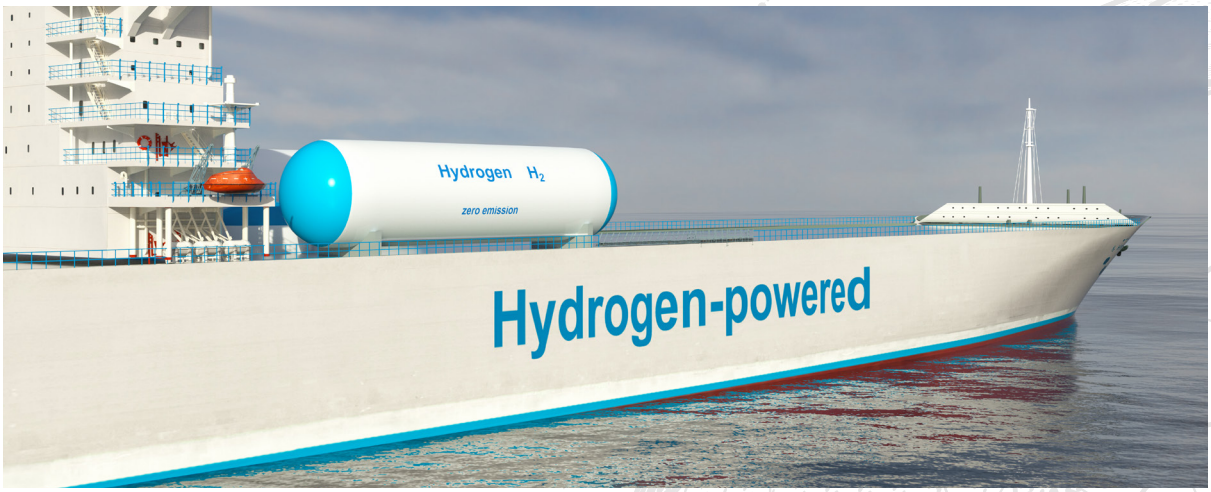
Considering the urgent need to reduce GHG emissions from shipping, the IMO adopted amendments to the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code), which are relevant to the use of cargoes identified as toxic products that may be used as fuel. Specifically, if acceptable to the Administration, cargoes identified as toxic products in column "f," which are required to be carried in type 2G/2PG ships in column "c" in the table of Chapter 19, may be used as fuel, provided that the same level of safety as natural gas (methane) is ensured by the relevant provisions of the IGC Code and taking into account the guidelines developed by the IMO. The entry-into-force date of these amendments is 1 July 2026, and apply to ships subject to the IGC Code, the keels of which are laid or which are at a similar stage of construction, on or after 1 July 2016 in accordance with paragraph 1.1.2.1 of the IGC Code.

ONGOING DISCUSSION

INTERIM GUIDELINES FOR THE SAFE USE OF HYDROGEN AS FUEL

In development: Anticipating finalization in 2025

The IMO is developing *Interim Guidelines for Ships Using Hydrogen as Fuel*. These guidelines follow the goal-based approach by specifying goals and functional requirements and provide provisions for the arrangement, installation, control and monitoring of machinery, equipment and systems using hydrogen as fuel to minimize risk to the ship, its crew and the environment. These guidelines are expected to be finalized in 2025.



MARITIME CYBERSECURITY DEVELOPMENTS

IMO

In June 2017, the IMO adopted Resolution MSC.428(98) on Maritime Cyber Risk Management in Safety Management Systems (SMSs). The resolution affirmed that an approved SMS should incorporate cyber risk management in accordance with the objectives and functional requirements of the International Safety Management (ISM) Code.

To further support the shipping industry in managing cyber risks, in July 2017, the IMO published the *Guidelines on Maritime Cyber Risk Management* (MSC-FAL.1/Circ.3), superseding the interim guidelines contained in MSC.1/Circ.1526. These guidelines provide high-level recommendations for safeguarding maritime operations from current and emerging cyber threats and vulnerabilities.

In May 2024 at MSC 108, the Committee approved the third revision of these guidelines, designated MSC-FAL.1/Circ.3/Rev.3, pending subsequent approval by the IMO Facilitation Committee (FAL) in 2025. This revision introduces additional definitions, expands the list of systems critical to the safety and security of shipping and protection of the marine environment, outlines minimum functional and technical cybersecurity controls to be implemented, and updates the list of Standards and Best Practices for Implementation of Cyber Risk Management.

IACS

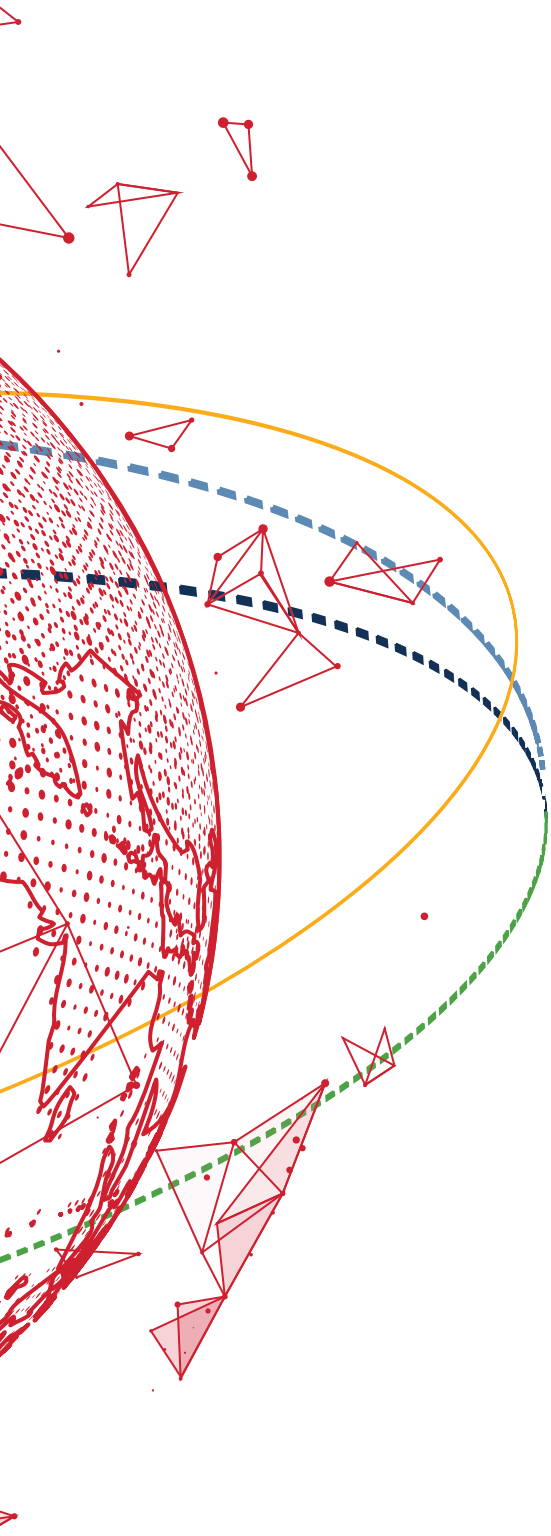
In April 2022, IACS released two new Unified Requirements (URs) focused on enhancing cyber resilience on board marine vessels:

- IACS UR E26 – Cyber Resilience of Ships
- IACS UR E27 – Cyber Resilience of On-Board Systems and Equipment

Following industry feedback, IACS worked on revisions and subsequently published the Rev.1 versions of the URs: UR E27 in September 2023 and UR E26 in November 2023. The Rev.1 versions superseded the original versions and entered into force on 1 July 2024. As of this entry into force date, these requirements are mandatory for new construction ships and offshore units falling within the scope of applicability and may be used for other ships as non-mandatory guidance.

UR E26 establishes minimum requirements for the cyber resilience of ships throughout their design, construction, commissioning and operational life. It covers five key functional aspects for cybersecurity: Identify, Protect, Detect, Respond and Recover. UR E27 specifies minimum security capabilities necessary for systems and equipment to be deemed cyber resilient. It is intended for third-party equipment suppliers.

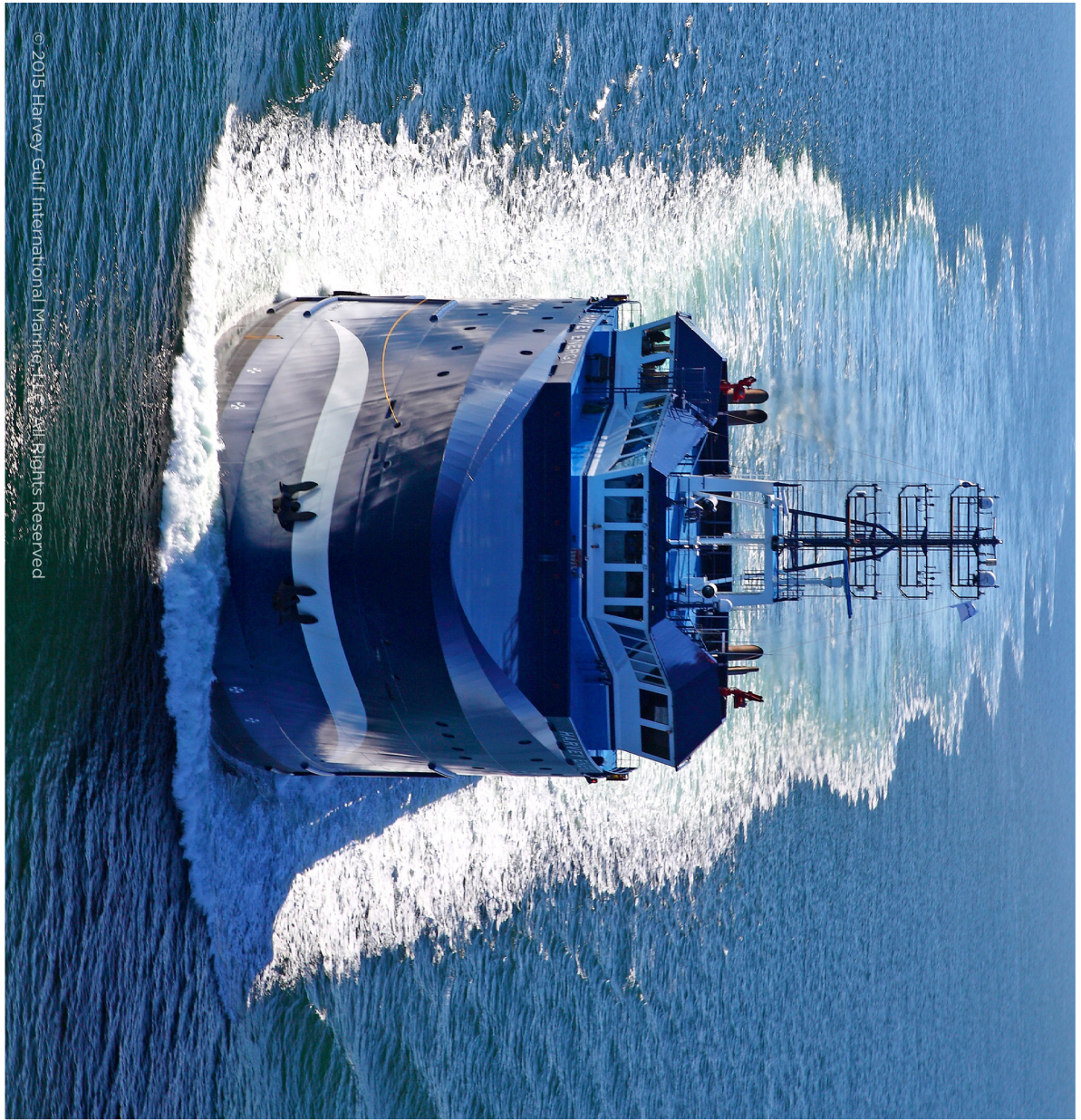
More information can be found on the ABS Maritime Cybersecurity webpage.



Part Two

REGIONAL DEVELOPMENTS

European Union
United Kingdom
United States
China
Australia
New Zealand
Singapore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EUROPEAN UNION

EUROPEAN UNION (EU) FIT FOR 55: SUMMARY

EU EMISSION TRADING SYSTEM (ETS)

The EU Emissions Trading System (EU ETS) is already in force for the maritime sector as of 2024, requiring shipping companies to surrender allowances for 40 percent of the verified CO_2 emissions as quantified by Regulation (EU) 2015/757 (EU MRV) and amended by Regulation (EU) 2023/957. The scope of the application includes the emissions on all voyages between EU ports as well as at berth in EU ports, and 50 percent of the emissions on voyages originating or terminating at EU ports. Derogations apply for certain ice-classed ships, as well as for trade to small islands and transnational public service to EU member States' outermost regions.

Moving into 2025, shipping companies will have to surrender allowances for 70 percent of the verified CO_2 emissions, tightening the regulation and pushing the shipping industry toward greater decarbonization.

The responsible entity for compliance with the directive is the registered owner. However, responsibility may be passed to the ISM manager/Document of Compliance (DoC) holder, by mandate. While the entity responsible for compliance with the regulation remains the shipping company (either the registered owner or the ISM manager), in line with the 'polluter pays' principle, the shipping company is entitled to claim reimbursement for the costs arising from the surrender of allowances from the entity that is directly responsible for the decisions affecting the GHG emissions of the ship.

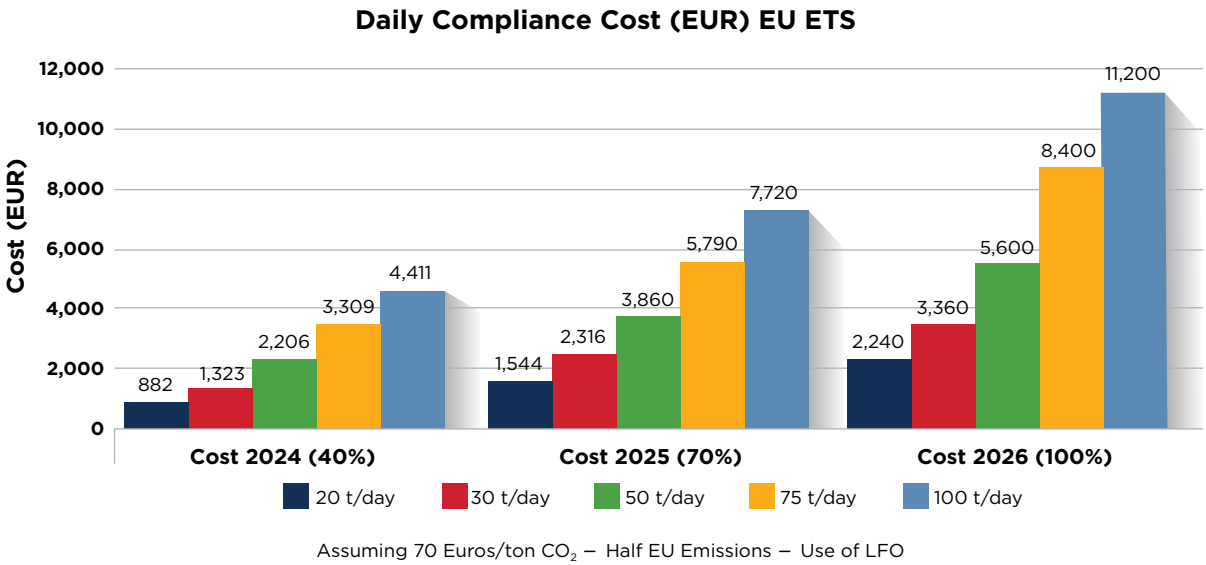
The verification process by an independent verifier contains two steps:

- Verification of the reported emissions of the individual ship
- Verification of the aggregated emissions of all vessels in the fleet under the responsibility of the shipping company

Future Developments:
On 1 January 2026, EU ETS will be further tightened by applying to 100 percent of the CO_2 emissions in scope and extended to include methane (CH_4) and nitrous oxide (N_2O) emissions. In addition, from 1 January 2027, the directive will become applicable to offshore vessels of over 5,000 gt.

The EU MRV Regulation (EU) 2015/757 has been amended to provide for the reporting requirements for CH_4 and N_2O and will extend to cover offshore vessels and general cargo ships over 400 gt as of 1 January 2025.

More information can be found on the ABS EU ETS webpage.



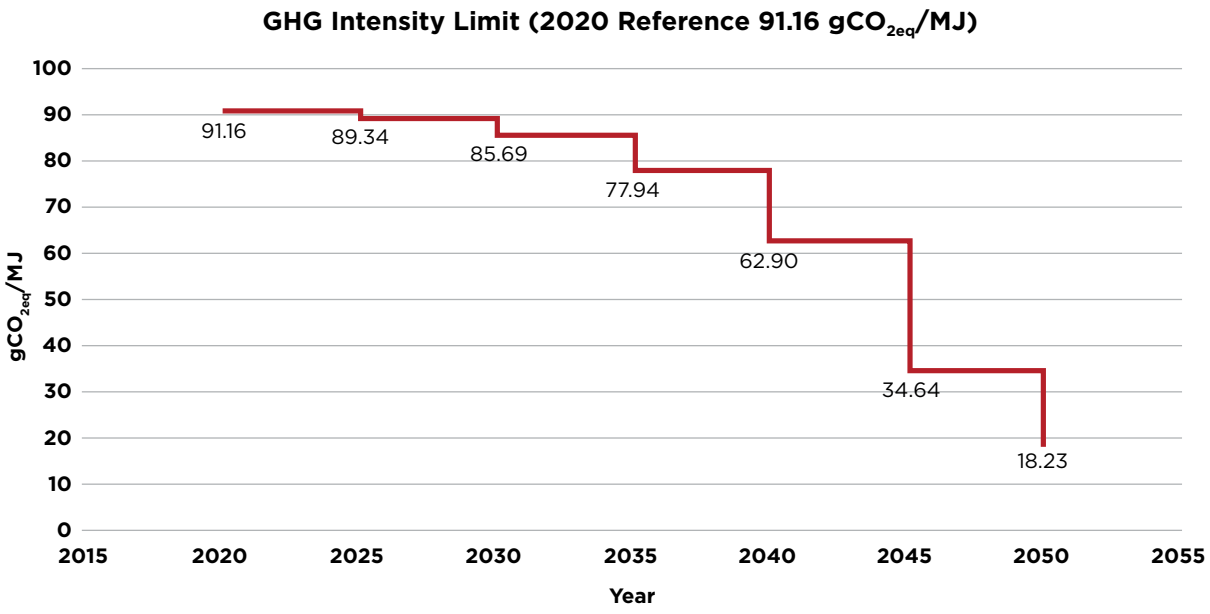
Assuming 70 Euros/ton CO_2 – Half EU Emissions – Use of LFO

FUELEU MARITIME REGULATION

The goal of the FuelEU Maritime Regulation is to incentivize the production and uptake of sustainable low carbon and renewable fuels for ships over 5,000 gt operating in European territorial waters.

The geographical scope is similar to EU ETS. It includes all voyages between EU ports as well as at berth in EU ports, and 50 percent of voyages originating or terminating at EU ports. The entity responsible for compliance is the ISM Manager/DoC holder without the possibility of transferring this responsibility to another entity.

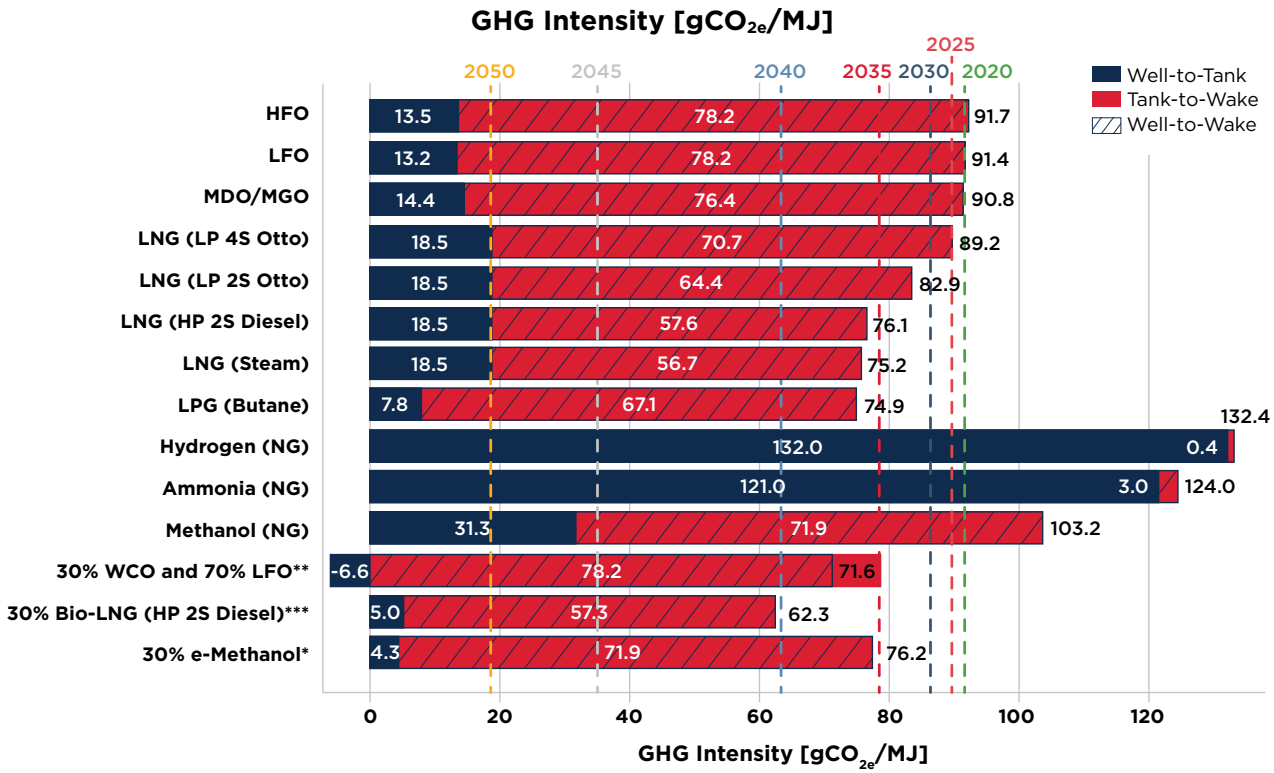
The upper limit of GHG intensity has been calculated based on the EU MRV data from 2020, and the limit will be incrementally decreased every five years from 2 percent in 2025 to 80 percent in 2050.



This progressive reduction is designed to incentivize the development and uptake of alternative fuels, biofuels and renewable fuels of non-biological origin (RFNBOs) or employ alternative compliance technologies such as wind-assisted power or fuel cells.

Starting on 1 January 2025, the GHG intensity of energy consumed by vessels on European voyages will be evaluated on a WtW basis. Tank-to-Wake calculations also account for CH_4 and N_2O, and CO_2e global-warming-potential (GWP) factors of 25 and 298 are applied, respectively, as also defined in Directive (EU) 2018/2001 (RED II).

Greenhouse gas intensity for different fuels will be established by defined WtT default factors for fossil fuels, while the WtT factors for renewable and low-carbon fuels can be calculated as defined in Directive (EU) 2018/2001 (RED II) as amended by Directive (EU) 2023/2413 or with actual and certified emission factors.



* e-Methanol (89% GHG reduction)
** Hydrotreated oil from waste cooking oil (80% GHG reduction)
*** Biomethane for transport (Open digestate, no off-gas combustion) (69% GHG reduction)

Additionally, from 1 January 2030, containerships and passenger ships will be required to connect to onshore power supply (OPS) and use it for all energy needs while at berth in a port of call under the jurisdiction of a member State.

Several derogations apply, similar to the EU ETS Directive, covering certain ice-classed ships, as well as for trade to small islands and transnational public service to EU member States' outermost regions.

The regulation provides for vessels with a compliance surplus for a reporting period to bank the surplus amount for use in the following reporting period (banked compliance surplus does not expire) or to create a compliance pool with one or more vessels of the same or different companies in order to compensate for vessels in the pool with compliance deficits, as long as the overall compliance balance of the pool is positive.

2025 GHG Target, $GHGIE_{actual}$ = 89.34 gCO_{2e}/MJ - LFO $GHGIE_{actual}$ **= 91.4 gCO_{2e}/MJ - 30 MT/day LFO** (1.23-10^6 MJ)

SCENARIO 1

LFO and WAP (0.95 f_{wind})
LFO WAP $GHGIE_{actual}$ **= 86.8 gCO_{2e}/MJ**

SCENARIO 2

LFO and LNG 0.2% Methane Slip
LFO and LNG with $GHGIE_{actual}$ **= 78.2 gCO_{2e}/MJ**

SCENARIO 3

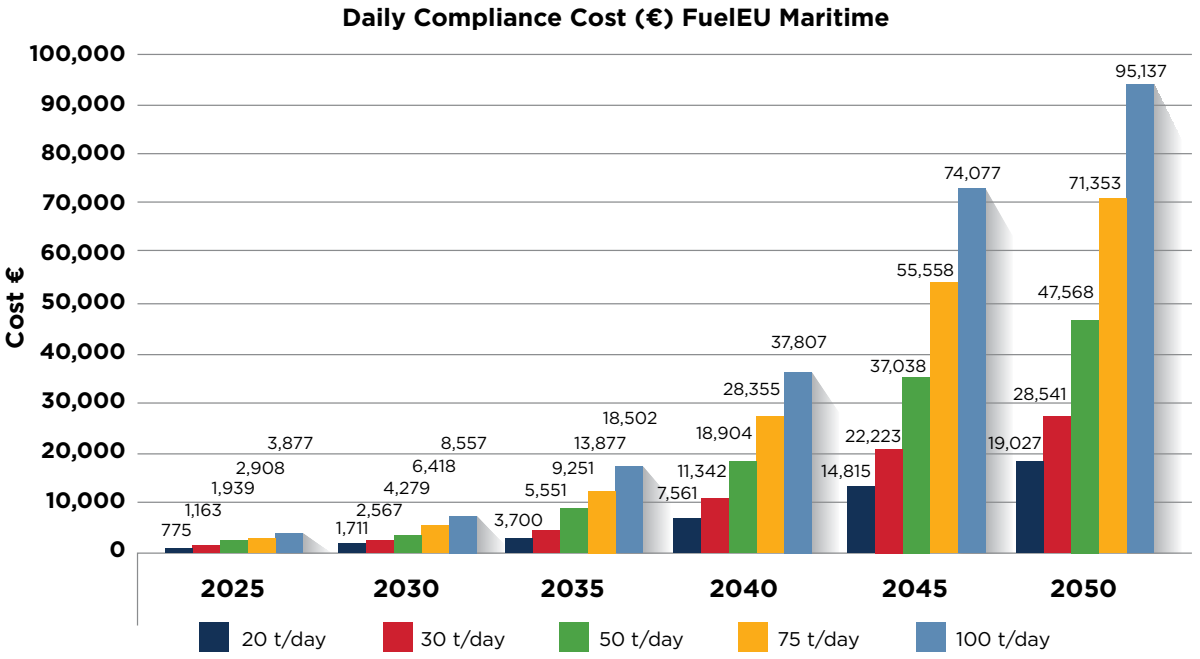
LFO and 30% Biofuel
LFO and B30 with $GHGIE_{actual}$ **= 68.8 gCO_{2e}/MJ**

SCENARIO 4

LFO and 30% e-Methanol
LFO and 30% e- and 70% Grey-Methanol with $GHGIE_{actual}$ **= 58.6 gCO_{2e}/MJ**

The monitoring and reporting of the fuel consumption and respective GHG intensities are subject to verification by an independent verifier at the individual ship level as well as for pools similar to the EU ETS Directive.

Ships with a higher GHG intensity than the threshold must pay a remedial penalty proportional to their compliance deficit. The compliance deficit is the difference between the reference GHG intensity and the actual one, multiplied by the energy consumption. The graph below shows the daily compliance cost for a ship using light fuel oil (LFO) based on its daily fuel oil consumption:



91.16 grCO_2eq/MJ reference value. Vessels will continue to use LFO.
Following GWP values: GWPCO_2 — 1.0 | GWPCH_4 — 25.0 | GWPN_2O — 298.0

If a ship has a compliance deficit for two consecutive reporting periods or more, the remedial penalty will be increased by 10 percent every consecutive reporting period until the ship achieves a compliance surplus for the increase factor to reset.

More information can be found on the ABS FuelEU Maritime webpage.

REVISED RENEWABLE ENERGY DIRECTIVE (RED III) AND REVISED GAS DIRECTIVE

The Renewable Energy Directive (RED II), Regulation (EU) 2018/2001 is a key piece of EU legislation aiming to promote the use of renewable sources within the EU. The directive sets binding targets for renewable energy consumption across member States and establishes a framework for deploying and using renewable energy.

The RED II was recently revised (RED III) to speed up the EU's clean energy transition and increase the overall renewable energy target at the EU level of at least 42.5 percent, aiming for 45 percent. Although the scope of RED III extends beyond shipping, it is particularly important for the maritime sector since it establishes the GHG emissions saving and sustainability criteria the biofuels should comply with to be considered sustainable under the EU ETS Directive and FuelEU Maritime regulation.

As per RED III, the GHG emissions savings from the use of biofuels should be at least 50 to 65 percent with respect to fossil fuel comparator with total GHG emissions equal to 94 gCO_{2e}/MJ, whereas for renewable fuels of non-biological origin (RFNBOs), at least 70 percent.

The revised Gas Directive, Regulation (EU) 2024/1788, establishes a common framework for the decarbonization of the markets for natural gas and hydrogen, including low-carbon hydrogen and low-carbon fuels, which are derived from low-carbon hydrogen. As per the revised Gas Directive, the low-carbon fuels must meet the GHG emission reduction threshold of 70 percent compared to the same fossil fuel comparator referred to above.

ALTERNATIVE FUEL INFRASTRUCTURE REGULATION (AFIR)

The AFIR has been revised to support the objectives of the FuelEU Maritime legislation by requiring EU member States to speed up the provision of liquefied natural gas (LNG) bunkering terminals and onshore power supply (OPS) in major ports as follows:

- Containership and passenger ship terminals, where the annual number of port calls for containerships and passenger ships exceeds 100 and 40, respectively, should be equipped by 1 January 2030 to provide shore-side electricity for at least 90 percent of the total number of port calls made by containerships and passenger ships each year.
- Set targets from 1 January 2025 for the supply of liquid methane through an appropriate number of refueling points (as determined by the member States) in maritime ports

These targets are aligned and consistent with the FuelEU Maritime regulation.

CYBERSECURITY

MARSEC Doc. 9209, published by EMSA in November 2023, provides guidance on the cybersecurity elements that should be assessed during maritime security inspections of EU member State-flagged ships in accordance with Regulation (EC) No 725/2004.

In parallel, the Directive (EU) 2022/2555 (NIS2 Directive) builds upon and repeals the Directive (EU) 2016/1148 (Network and Information Security (NIS) Directive), which was the first horizontal EU cybersecurity legal act. NIS2 aims to modernize the existing legal framework by introducing measures designed to enhance the overall level of cybersecurity across the EU.

NIS2 applies to public and private entities operating in sectors of high criticality, providing services or conducting activities within the EU, and meeting specific size criteria. Notably, among the sectors identified as critical, the water transport sector includes inland, sea, and coastal passenger and freight water transport companies, excluding the individual vessels operated by those companies. Member States were required to adopt and publish the necessary measures to comply with this directive by 17 October 2024 and to apply those measures from 18 October 2024. Entities that fail to comply with the requirements may face administrative fines of up to €10 million or 2 percent of their global annual turnover, whichever is greater, and may also face legal consequences, such as the suspension of their services.

UNITED KINGDOM

UK MONITORING, REPORTING AND VERIFICATION (MRV)

The EU Regulation on Monitoring, Reporting and Verification (MRV) of Carbon Dioxide (CO_2) Emissions from Maritime Transport has been adopted into United Kingdom (U.K.) law in the form of the UK MRV Regulations 2018. Furthermore, the U.K. has issued Marine Information Notice (MIN) 669 on Reporting Emissions Data into the U.K. MRV Regime, providing guidance on reporting requirements and Marine Guidance Notice (MGN) 662, providing templates for the U.K. MRV regime.

However, the U.K.'s Department for Transport (DfT) has taken a decision to delay the requirement for ship operators to report emissions until the digital reporting system is fully operational (expected in 2025), but the legal requirement for ship operators to monitor vessel emissions remains in place.

Until reporting resumes and further guidance is issued, ship operators are not required to carry a valid DoC for any ships that were subject to the U.K. MRV regime in the previous reporting period. No enforcement action will be taken by the U.K. Marine and Coastguard Agency (MCA) until reporting resumes. An EU DoC will be recognized for voyages between the U.K. and European Economic Area (EEA) ports. However, once reporting resumes, a separate U.K. DoC will be needed to confirm that a validated emissions report for voyages between U.K. ports, U.K. ports and non-EEA ports and vice versa was submitted for each reporting period from 2022 onward.

More information is available in the U.K. MRV ABS Regulatory News brief.

UK EMISSION TRADING SCHEME (ETS)

The U.K. ETS, which has been in place since 2021, limits the total amount of GHGs aviation, power and other energy-intensive industries can emit. This incentivizes industries away from costly fossil fuels and encourages them to cut their carbon footprint by investing in energy efficiency and cleaner or renewable technologies, which in turn can boost energy security.

Changes announced on 3 July 2023 confirm that the scheme will expand to cover the domestic maritime transport sector from 2026, as well as waste incineration and waste from energy sectors from 2028. The U.K. ETS requirements will apply to large maritime vessels (5,000 gt and above) and will be subject to further consultation on the details of implementation and an initial reporting period for waste sectors. Expanding the U.K. ETS to include domestic maritime transport will require maritime participants to monitor their emissions from eligible journeys, report their emissions from these journeys and surrender sufficient allowances to cover their emissions. This would apply to domestic journeys only, which would be defined as a journey starting and finishing at a port located in the U.K. The U.K. ETS is intended to apply to the entity responsible for a vessel's compliance with the International Safety Management (ISM) Code and to exempt government non-commercial activity.

UNITED STATES

CYBERSECURITY

The Vessel Cyber Risk Management Work Instruction (CVC-WI-027), published in October 2020 and revised in October 2023, provides guidance on the United States Coast Guard's (USCG) approach to assessing cyber risk in commercial vessels. The work instruction emphasizes that, as a flag Administration, the USCG expects U.S.-flagged vessels and companies to integrate cyber risk management into their Safety Management Systems (SMS). As a port State authority, the USCG also requires that foreign-flagged vessels calling at U.S. ports have adequately addressed cyber risk management in their SMS.

Additionally, an executive order signed in February 2024 mandates that cyber threats be addressed through updates to Part 6 of Title 33 of the Code of Federal Regulations (CFR). This executive order explicitly includes cybersecurity within the jurisdiction of the Commandant of the USCG and her Captains of the Port (COTP). The executive order defines "cyber incident" and establishes a reporting requirement for cyber incidents, with guidance provided in Navigation and Vessel Inspection Circular (NVIC) No. 02-24. This reporting requirement also applies to foreign-flagged vessels operating in U.S. waters and ports.

Given the expanded authority, the USCG has published a Notice of Proposed Rulemaking (NPRM) through the Federal Register to update its maritime security regulations. This proposed rule would introduce several requirements for owners or operators of U.S.-flagged vessels, facilities and Outer Continental Shelf facilities. It would mandate the implementation of cybersecurity measures aimed at identifying risks, detecting threats and vulnerabilities, protecting critical systems and facilitating recovery from cyber incidents. The USCG proposes an implementation period of 12 to 18 months from the effective date of the final rule.

VESSEL INCIDENTAL DISCHARGE ACT (VIDA)

On 9 October 2024, the U.S. Environmental Protection Agency (EPA) published its final rule under VIDA. It established federal performance standards for marine pollution control devices applicable to discharges into U.S. waters and the contiguous zone. These standards apply to non-armed forces and non-recreational vessels 79 feet and longer.

The USCG is required to develop corresponding implementation, compliance and enforcement regulations within two years. These regulations may include requirements for the design, construction, testing, approval, installation and use of devices necessary to meet the EPA standards.

The EPA's rule took effect on 8 November 2024; however, the federal standards will only become enforceable once the USCG has finalized its regulations. Until then, existing requirements from

the 2013 Vessel General Permit (VGP) and the USCG's requirements under section 1101 of the Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA) will remain in effect. Once the USCG's new regulations are finalized, the requirements of the VGP and related regulations will be repealed.

Two types of standards have been established under VIDA – general and specific. The general standards are organized into three categories:

- General operation and maintenance
- Biofouling management
- Oil management

The specific standards address discharges of 20 different pieces of equipment and systems. The new requirements are at least as stringent as those in the VGP. The EPA is promulgating changes to the VGP requirements to transition them into regulations that reflect national technology-based standards of performance, improve clarity, enhance enforceability and implementation, and incorporate new information and technology.

The similarities and differences between the new discharge standards of performance and the VGP can be separated into three groups:

First Group: Consists of 13 discharge standards that are substantially the same as the requirements of the VGP. These discharge standards encompass the intent and stringency of the VGP but include other changes to conform the requirements to VIDA. This includes boilers, cathodic protection, chain lockers, decks, elevator pits, fire protection equipment, gas turbines, inert gas systems, motor gasoline and compensating systems, non-oily machinery, pools and spas, refrigeration and air conditioning, and sonar domes.

Second Group: Consists of two consistent discharge standards but slightly modified from the VGP to increase stringency or provide language clarifications moderately. This includes bilges and desalination and purification systems.

Third Group: Consists of five discharge standards containing the most significant VGP modifications. These modifications address specific VIDA requirements and reflect new information that has become available since the issuance of the VGP. This includes ballast tanks, exhaust gas emission control systems, graywater systems, hulls and associated niche areas, and seawater piping.

The full set of requirements applicable to each discharge standard of performance can be found in 40 CFR 139.

In addition to the above discharge standards, VIDA has also established specific requirements applicable to vessels operating in federally protected waters identified in Appendix A of 40 CFR 139.

CALIFORNIA AIR RESOURCE BOARD (CARB) 2020 AT-BERTH REGULATION

As of 1 January 2023, all ocean-going vessels visiting California must report each vessel visit within 30 days of departure and meet opacity requirements.

Emissions controls compliance start dates are based on vessel type.

Vessel Type	Compliance Start Dates
Container and refrigerated cargo vessels	1 January 2023
Cruise (passenger) vessels	1 January 2023
Roll on/roll off vessels	1 January 2025
Tanker vessels that visit the ports of Los Angeles or Long Beach	1 January 2025
All remaining tanker vessels	1 January 2027

Once a vessel type has reached its compliance start date, then the vessel must:

- Coordinate with regulated terminals at least 7 days prior to arrival and complete all items in the compliance checklist
- Reduce emissions while at a regulated terminal in accordance with the regulation's performance standards by:
  - Connecting to shore power
  - Employing a CARB-approved Emission Control Strategy (CAECS) or an approved innovative concept

These are to be employed within two hours of the vessel arriving at the berth and continue until no sooner than one hour before the pilot boards the vessel for departure.

Emissions controls will not apply to vessels visiting an unregulated terminal. A terminal that received less than 20 visits in both 2021 and 2022 from a vessel type is initially considered a low-activity terminal and is unregulated for that vessel type. A low-activity terminal that receives 20 or more visits per year for two consecutive years from a vessel type that is becoming a regulated terminal for that vessel type and shall reduce emissions starting 1 January of the following year.

A directory of regulated terminals may be found on the ABS CARB Directory webpage.

CHINA

NATIONAL COLD IRONING REQUIREMENTS

China has legislated the transition of its domestic fleet and terminals toward shore power capability. New terminals and domestic new construction vessels (including those undergoing major modifications) are required to install shore power systems. All vessels, except tankers with shore power capability, visiting terminals with shore power systems will be required to connect to shore power if the vessel is at berth more than two hours. This includes foreign-flagged vessels. Vessels employing alternative equivalent measures may not be required to use shore power.

DATA COLLECTION FOR ENERGY CONSUMPTION OF SHIPS CALLING AT CHINESE PORTS

All ships are required to report energy consumption data to the China Maritime Safety Administration for voyages calling at a Chinese port. Only the voyage from the last port before arriving to a Chinese port is to be reported. The outbound voyage departing a Chinese port does not need to be reported. The report is to be included with the documents that are required to be submitted upon departure from a Chinese port.

ACTION PLAN FOR GREEN DEVELOPMENT IN THE SHIPBUILDING INDUSTRY (2024 TO 2030)

The natural outcome of China's state-led push to achieve a high technological level in shipbuilding with a long-term focus on green technologies is the Action Plan for Green Development in the Shipbuilding Industry (2024 to 2030), which was announced just before the turn of the year in December 2023.

While being vague in the definition of the green finance policies and supports mentioned explicitly in it, the action plan includes key interim targets set for 2025, including:

- Securing over 50 percent of international market share in green-powered ships such as LNG- and methanol-powered vessels by 2025
- Aligning the development of maritime alternative fuels and new energy technologies with global standards

Further targets are set for 2030, while research and development for methanol- and ammonia-fueled vessels will be promoted under the action plan along with support for the establishment of a supply chain to service green shipbuilding.

AUSTRALIA

MANAGING BIOFOULING IN AUSTRALIA

The Australian biofouling management requirements set out vessel operator obligations for the management of biofouling when operating vessels under biosecurity control within Australian territorial seas. Operators of all vessels subject to biosecurity control will be required to provide information on how biofouling has been managed prior to arriving in Australian territorial seas. This information will need to be reported through the department's Maritime Arrivals Reporting System (MARS). Vessel operators will receive less intervention for biofouling if they comply with one of the following three accepted biofouling management practices:

- Implementation of an effective biofouling management plan
- Cleaned all biofouling within 30 days prior to arriving in Australian territory
- Implementation of an alternative biofouling management method pre-approved by the department

A vessel operator that has not applied one of the three accepted biofouling management practices will be subject to further questions and assessment of the biosecurity risk associated with biofouling on the vessel.

TESTING AND INSPECTION OF OIL FILTERING EQUIPMENT

The Australian Maritime Safety Authority (AMSA) issued Marine Notice 2024/03 on the interpretation for the installation and testing of oil filtering equipment (oily water separators) installed on ships. The notice provides awareness and guidance on self-checks, reporting, and preparation for Port State Control inspections and testing in Australian ports:

1. An MEPC 107(49) approved system fitted with an effluent sample flow sensor to 15 ppm bilge alarm
Operational testing of the equipment is performed by stopping the sample water flow to the 15 ppm bilge alarm. If the 15 ppm bilge alarm does not alarm when effluent sample flow is stopped for more than 5 seconds, and the automatic stopping device is not activated within 20 seconds, this is considered a failure of the oily discharge monitoring and control system and the 15 ppm alarm arrangements. The ship is likely to be detained until the system complies with MARPOL requirements.

2. An MEPC 107(49) approved system not fitted with an effluent sample flow sensor to the 15 ppm bilge alarm
The sample water flow through the 15 ppm bilge alarm should be unobstructed. All valve(s) fitted for the sampling line to the 15 ppm bilge alarm should be in the normal operating position when testing is performed during Port State Control inspections.

NEW ZEALAND

SHIP GENERATED NOISE IN NEW ZEALAND PORTS

All containerships visiting a New Zealand port will be required to provide a Noise Label Score according to the Environmental Ship Index (ESI), following the NEPTUNES protocol, or confirm that a reactive silencer is fitted to one of the ancillary engines used while at berth. If either of these requirements is not met, the vessel will be refused entry to any New Zealand port.

NEW ZEALAND'S BIOFOULING REQUIREMENTS

All vessels must provide evidence of biofouling management before they arrive in New Zealand. The Craft Risk Management Standard for Vessels outlines all biosecurity requirements for international vessels, including biofouling.

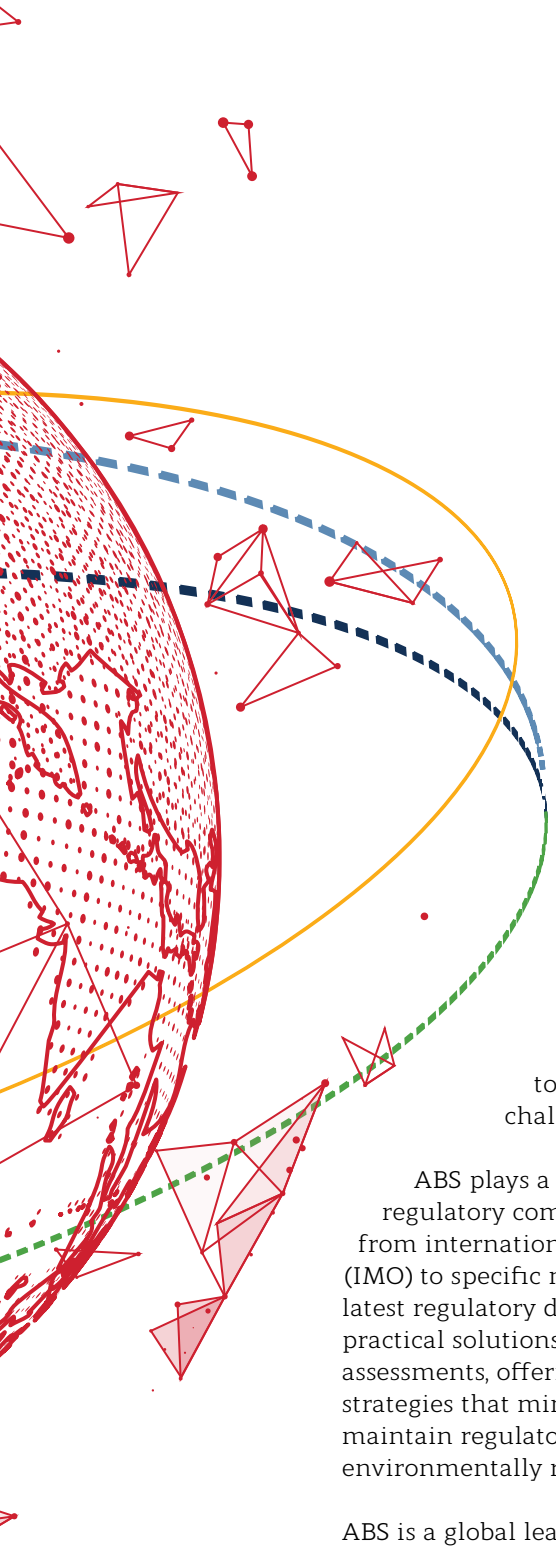
SINGAPORE

MARITIME SINGAPORE DECARBONIZATION BLUEPRINT: WORKING TOWARD 2050

Developed by the Maritime and Port Authority of Singapore (MPA) in consultation with industry partners, the Blueprint will contribute to Singapore's commitments under the United Nations' 2030 Sustainable Development Agenda, Paris Agreement and the Initial IMO Strategy on reduction of GHG emissions from ships. The Blueprint outlines seven focus areas to support the MPA's decarbonization efforts in the maritime industry: Port terminals, domestic harbor craft, future marine fuels, bunkering standards and infrastructure, Singapore registry of ships, efforts at the IMO and other international platforms, research and development and talent and carbon awareness, carbon accounting and green financing.

DESIGN AND DEVELOP ELECTRIC HARBOR CRAFT IN SINGAPORE (2030)

In support of Singapore's 2050 national target, the harbor craft sector, including pleasure craft and tugboats, will need to achieve net-zero emissions by 2050. Operators of new harbor crafts are encouraged to inform MPA early of their plans so that provisions to designs can be adjusted if necessary. Plans for harbor crafts entering from 2030 should be highlighted to MPA from 1 January 2027. For biofuels, blends of up to B50 are already commercially available. The MPA is working with the industry to develop the standards for up to B100. New harbor crafts from 2030 will have the choice for their engines to be B100 biofuel capable or be compatible with net-zero fuels such as hydrogen when it is more readily available.



Conclusion

NAVIGATING THE REGULATORY LANDSCAPE

The marine industry faces a highly complex and ever-evolving regulatory landscape, and compliance with these regulations is crucial for ensuring safe and efficient vessel operations. The industry must cross several international, national and local regulations, each with requirements and standards. From environmental regulations aimed at reducing emissions and protecting marine ecosystems to safety standards designed to prevent accidents and ensure the well-being of crew members, the scope of compliance is vast. Additionally, the dynamic nature of these regulations means that companies must continuously monitor and adapt to new rules and amendments, making regulatory compliance a challenging aspect of marine operations.

ABS plays a fundamental role in helping clients navigate the complexities of regulatory compliance, offering expert guidance on a wide range of regulations, from international standards set by the International Maritime Organization (IMO) to specific national and local requirements. By staying aligned with the latest regulatory developments, ABS provides clients with timely advice and practical solutions to ensure compliance. This includes conducting thorough assessments, offering training programs and developing customized compliance strategies that minimize operational disruptions. ABS helps clients achieve and maintain regulatory compliance through these efforts, ensuring safe, efficient and environmentally responsible vessel operations.

ABS is a global leader in marine and offshore classification. Our commitment to safety, reliability and efficiency is ever-present, guiding our members and clients to safer and more efficient operations. We are at the forefront of supporting the global energy transition at sea, the application of remote and autonomous marine systems, and many other exciting technological advancements. Through several joint development projects and research initiatives, we support the maritime industry's digitalization, clean energy transition and application of new technologies. Asset owners and operators seeking compliance solutions for the regulations discussed in this publication can contact our specialists to learn more about how ABS can help.

ABS RESOURCES

Regulatory News
www.eagle.org/regulatorynews

Global Marine
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Global Offshore
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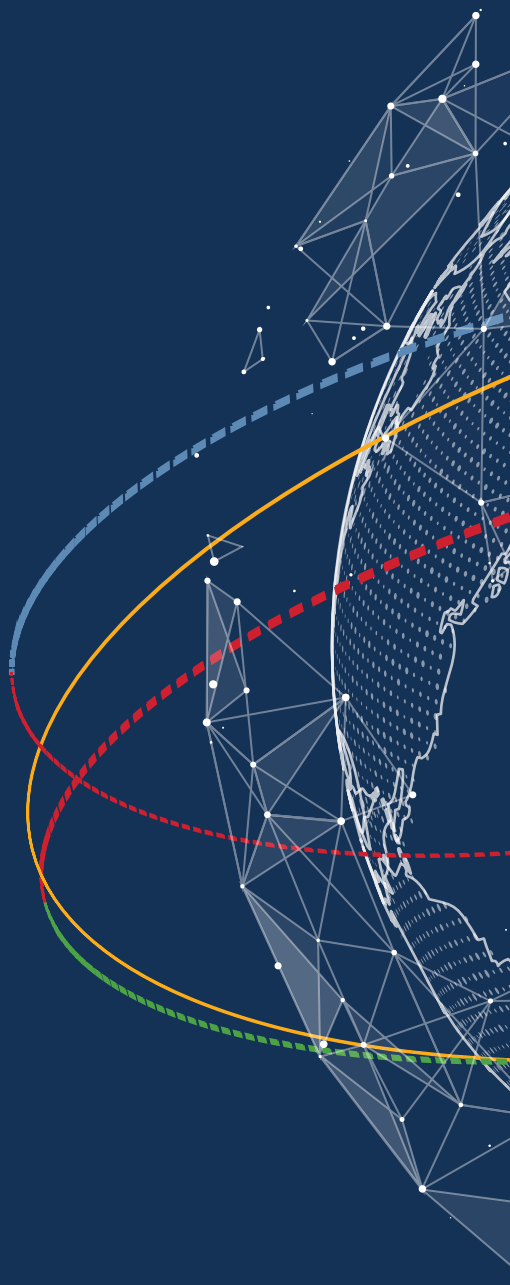

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