INTERNATIONAL MARITIME ORGANIZATION

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Circular Letter No.5005
11 April 2025

To: All IMO Member States and Associate Members
United Nations and specialized agencies
Intergovernmental organizations
Non-governmental organizations in consultative status with IMO

Subject: **Draft revised MARPOL Annex VI**

1 MEPC 82 (30 September to 4 October 2024) considered and approved draft amendments to MARPOL Annex VI on the use of multiple engine operational profiles for a marine diesel engine including clarifying engine test cycles and clarification of entries and data reporting required by regulations 27 and 28.

2 MEPC 83 (7 to 11 April 2025) considered and approved draft amendments to MARPOL Annex VI concerning the:

.1 designation of the North-East Atlantic as a new Emission Control Area (ECA) (regulations 13 and 14 and Appendix VII of MARPOL Annex VI);

.2 accessibility of the IMO Ship Fuel Oil Consumption Database (IMO DCS) and review clause of the short-term GHG reduction measure (regulations 20, 25, 27 and 28); and

.3 IMO Net-Zero Framework (new chapter 5).

3 As requested by the Committee, the Secretariat prepared a draft consolidated revised version of MARPOL Annex VI incorporating the above mentioned amendments.

4 The Secretary-General has the honour to transmit herewith, in accordance with article 16(2)(a) of the MARPOL Convention, the text of the draft revised consolidated version of MARPOL Annex VI referred to above, as set out in the annex, for consideration with a view to adoption at MEPC/ES.2 (14 to 17 October 2025) in accordance with articles 16(2)(b), (c) and (d) of said Convention.

ANNEX […]

DRAFT AMENDMENTS TO MARPOL ANNEX VI

REGULATIONS FOR THE PREVENTION OF AIR POLLUTION FROM SHIPS

(Revised MARPOL Annex VI)

Chapter 1 – General

Regulation 1
Application

The provisions of this Annex shall apply to all ships, except where expressly provided otherwise.

Regulation 2
Definitions

1 For the purpose of this Annex:

.1 *Annex* means Annex VI to the International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL), as modified by the Protocol of 1978 relating thereto, and as modified by the Protocol of 1997, as amended by the Organization, provided that such amendments are adopted and brought into force in accordance with the provisions of article 16 of the present Convention.

.2 *A similar stage of construction* means the stage at which:

.1 construction identifiable with a specific ship begins; and

.2 assembly of that ship has commenced comprising at least 50 tonnes or one per cent of the estimated mass of all structural material, whichever is less.

.3 *Anniversary date* means the day and the month of each year that will correspond to the date of expiry of the International Air Pollution Prevention Certificate.

.4 *Audit* means a systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.

.5 *Audit Scheme* means the IMO Member State Audit Scheme established by the Organization and taking into account the guidelines developed by the Organization.[1]

.6 *Audit Standard* means the Code for Implementation.

[1] Refer to *Framework and procedures for the IMO Member State Audit Scheme* (resolution A.1067(28)).

.7 *Auxiliary control device* means a system, function or control strategy installed on a marine diesel engine that is used to protect the engine and/or its ancillary equipment against operating conditions that could result in damage or failure, or that is used to facilitate the starting of the engine. An auxiliary control device may also be a strategy or measure that has been satisfactorily demonstrated not to be a defeat device.

.8 *Calendar year* means the period from 1 January until 31 December inclusive.

.9 *Code for Implementation* means the IMO Instruments Implementation Code (III Code) adopted by the Organization by resolution A.1070(28).

.10 *Committee* means the Marine Environment Protection Committee of the Organization.

.11 *Company* means the owner of the ship or any other organization or person such as the manager, or the bareboat charterer, who has assumed the responsibility for operation of the ship from the owner of the ship and who on assuming such responsibility has agreed to take over all the duties and responsibilities imposed by the International Management Code for the Safe Operation of Ships and for Pollution Prevention.

.12 *Continuous feeding* is defined as the process whereby waste is fed into a combustion chamber without human assistance while the incinerator is in normal operating conditions with the combustion chamber operative temperature between 850°C and 1,200°C.

.13 *Defeat device* means a device that measures, senses or responds to operating variables (e.g. engine speed, temperature, intake pressure or any other parameter) for the purpose of activating, modulating, delaying or deactivating the operation of any component or the function of the emission control system such that the effectiveness of the emission control system is reduced under conditions encountered during normal operation, unless the use of such a device is substantially included in the applied emission certification test procedures.

.14 *Electronic Record Book* means a device or system, approved by the Administration, used to electronically record the required entries for discharges, transfers and other operations as required under this Annex in lieu of a hard copy record book.[2]

.15 *Emission* means any release of substances, subject to control by this Annex, from ships into the atmosphere or sea.

.16 *Emission control area* means an area where the adoption of special mandatory measures for emissions from ships is required to prevent, reduce and control air pollution from NO_x or SO_x and particulate matter or all three types of emissions and their attendant adverse impacts on human health and the environment. Emission control areas shall include those listed in, or designated under, regulations 13 and 14 of this Annex.

.17 *Fuel oil* means any fuel delivered to and intended for use on board a ship.

[2] Refer to *Guidelines for the use of electronic record books under MARPOL* (resolution MEPC.312(74)).

.18 *Gas fuel* means a fuel oil with a vapour pressure exceeding 0.28 MPa absolute at a temperature of 37.8°C.[3]

.19 *Gross tonnage* means the gross tonnage calculated in accordance with the tonnage measurement regulations contained in Annex I to the International Convention on Tonnage Measurements of Ships, 1969, or any successor Convention.

.20 *In-use sample* means a sample of fuel oil in use on a ship.

.21 *Installations* in relation to regulation 12 of this Annex means the installation of systems, equipment, including portable fire-extinguishing units, insulation, or other material on a ship, but excludes the repair or recharge of previously installed systems, equipment, insulation or other material, or the recharge of portable fire-extinguishing units.

.22 *Installed* means a marine diesel engine that is or is intended to be fitted on a ship, including a portable auxiliary marine diesel engine, only if its fuelling, cooling or exhaust system is an integral part of the ship. A fuelling system is considered integral to the ship only if it is permanently affixed to the ship. This definition includes a marine diesel engine that is used to supplement or augment the installed power capacity of the ship and is intended to be an integral part of the ship.

.23 *Irrational emission control strategy* means any strategy or measure that, when a marine diesel engine is operated under normal conditions of use, reduces the effectiveness of an emission control system to a level below that expected from the applicable emission test procedures.

.24 *Low-flashpoint fuel* means gaseous or liquid fuel oil having a flashpoint lower than otherwise permitted under paragraph 2.1.1 of regulation 4 of chapter II-2 of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended.

.25 *Marine diesel engine* means any reciprocating internal combustion engine operating on liquid or dual fuel, to which regulation 13 of this Annex applies, including booster/compound systems if applied. In addition, a gas-fuelled engine installed on a ship constructed on or after 1 March 2016 or a gas-fuelled additional or non-identical replacement engine installed on or after that date is also considered as a marine diesel engine.

.26 *MARPOL delivered sample* means the sample of fuel oil delivered in accordance with regulation 18.8.1 of this Annex.

.27 *NO_x Technical Code* means the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines adopted by resolution 2 of the 1997 MARPOL Conference, as amended by the Organization, provided that such amendments are adopted and brought into force in accordance with the provisions of article 16 of the present Convention.

.28 *Onboard sample* means a sample of fuel oil intended to be used or carried for use on board that ship.

[3] Refer to paragraph 2.2.18 of the *International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code).*

.29 *Ozone-depleting substances* means controlled substances defined in paragraph (4) of article 1 of the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987, listed in Annexes A, B, C or E to the said Protocol in force at the time of application or interpretation of this Annex.

Ozone-depleting substances that may be found on board ship include, but are not limited to:

Halon 1211	Bromochlorodifluoromethane
Halon 1301	Bromotrifluoromethane
Halon 2402	1,2-Dibromo-1,1,2,2-tetrafluoroethane (also known as Halon 114B2)
CFC-11	Trichlorofluoromethane
CFC-12	Dichlorodifluoromethane
CFC-113	1,1,2-Trichloro-1,2,2-trifluoroethane
CFC-114	1,2-Dichloro-1,1,2,2-tetrafluoroethane
CFC-115	Chloropentafluoroethane

.30 *Shipboard incineration* means the incineration of wastes or other matter on board a ship, if such wastes or other matter were generated during the normal operation of that ship.

.31 *Shipboard incinerator* means a shipboard facility designed for the primary purpose of incineration.

.32 *Ships constructed* means ships the keels of which are laid or that are at a similar stage of construction.

.33 *Sludge oil* means sludge from the fuel oil or lubricating oil separators, waste lubricating oil from main or auxiliary machinery, or waste oil from bilge water separators, oil filtering equipment or drip trays.

.34 *Sulphur content of fuel oil* means the concentration of sulphur in a fuel oil, measured in % m/m as tested in accordance with a standard acceptable to the Organization.[4]

.35 *Tanker* in relation to regulation 15 of this Annex means an oil tanker as defined in regulation 1 of Annex I to the present Convention or a chemical tanker as defined in regulation 1 of Annex II to the present Convention.

.36 *Unmanned non-self-propelled (UNSP) barge* means a barge that:

.1 is not propelled by mechanical means;

.2 has no system, equipment and/or machinery fitted that may generate emissions regulated by this Annex; and

.3 has neither persons nor living animals on board.

[4] Refer to ISO 8754:2003 Petroleum products – Determination of sulphur content – Energy-dispersive X-ray fluorescence spectrometry.

2 For the purpose of chapter 4:

.1 *A ship delivered on or after 1 September 2019* means a ship:

.1 for which the building contract is placed on or after 1 September 2015; or

.2 in the absence of a building contract, the keel of which is laid, or which is at a similar stage of construction, on or after 1 March 2016; or

.3 the delivery of which is on or after 1 September 2019.

.2 *Attained annual operational CII* is the operational carbon intensity indicator value achieved by an individual ship in accordance with regulations 26 and 28 of this Annex.

.3 *Attained EEDI* is the EEDI value achieved by an individual ship in accordance with regulation 22 of this Annex.

.4 *Attained EEXI* is the EEXI value achieved by an individual ship in accordance with regulation 23 of this Annex.

.5 *Bulk carrier* means a ship which is intended primarily to carry dry cargo in bulk, including such types as ore carriers as defined in regulation 1 of chapter XII of the International Convention for the Safety of Life at Sea (SOLAS), 1974, (as amended) but excluding combination carriers.

.6 *Combination carrier* means a ship designed to load 100% deadweight with both liquid and dry cargo in bulk.

.7 *Containership* means a ship designed exclusively for the carriage of containers in holds and on deck.

.8 *Conventional propulsion* means a method of propulsion where a main reciprocating internal combustion engine(s) is the prime mover and coupled to a propulsion shaft either directly or through a gear box.

.9 *Cruise passenger ship* means a passenger ship not having a cargo deck, designed exclusively for commercial transportation of passengers in overnight accommodations on a sea voyage.

.10 *Distance travelled* means distance travelled over ground.

.11 *Existing ship* means a ship which is not a new ship.

.12 *Gas carrier* means a cargo ship, other than an LNG carrier as defined in paragraph 2.16 of this regulation, constructed or adapted and used for the carriage in bulk of any liquefied gas.

.13 *General cargo ship* means a ship with a multi-deck or single deck hull designed primarily for the carriage of general cargo. This definition excludes specialized dry cargo ships, which are not included in the calculation of reference lines for general cargo ships, namely livestock carrier, barge carrier, heavy load carrier, yacht carrier, nuclear fuel carrier.

.14 *LNG carrier* means a cargo ship constructed or adapted and used for the carriage in bulk of liquefied natural gas (LNG).

.15 *Major conversion* means a conversion of a ship:

.1 which substantially alters the dimensions, carrying capacity or engine power of the ship; or

.2 which changes the type of the ship; or

.3 the intent of which in the opinion of the Administration is substantially to prolong the life of the ship; or

.4 which otherwise so alters the ship that, if it were a new ship, it would become subject to relevant provisions of the present Convention not applicable to it as an existing ship; or

.5 which substantially alters the energy efficiency of the ship and includes any modifications that could cause the ship to exceed the applicable required EEDI as set out in regulation 24 of this Annex or the applicable required EEXI as set out in regulation 25 of this Annex.

.16 *New ship* means a ship:

.1 for which the building contract is placed on or after 1 January 2013; or

.2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 July 2013; or

.3 the delivery of which is on or after 1 July 2015.

.17 *Non-conventional propulsion* means a method of propulsion, other than conventional propulsion, including diesel-electric propulsion, turbine propulsion, and hybrid propulsion systems.

.18 *Passenger ship* means a ship which carries more than 12 passengers.

.19 *Polar Code* means the International Code for Ships Operating in Polar Waters, consisting of an introduction, parts I-A and II-A and parts I-B and II-B, as adopted by resolutions MSC.385(94) and MEPC.264(68), as may be amended, provided that:

.1 amendments to the environment-related provisions of the introduction and chapter 1 of part II-A of the Polar Code are adopted, brought into force and take effect in accordance with the provisions of article 16 of the present Convention concerning the amendment procedures applicable to an appendix to an annex; and

.2 amendments to part II-B of the Polar Code are adopted by the Marine Environment Protection Committee in accordance with its Rules of Procedure.

.20 *Refrigerated cargo carrier* means a ship designed exclusively for the carriage of refrigerated cargoes in holds.

.21 *Required annual operational CII* is the target value of attained annual operational CII in accordance with regulations 26 and 28 of this Annex for the specific ship type and size.

.22 *Required EEDI* is the maximum value of attained EEDI that is allowed by regulation 24 of this Annex for the specific ship type and size.

.23 *Required EEXI* is the maximum value of attained EEXI that is allowed by regulation 25 of this Annex for the specific ship type and size.

.24 *Ro-ro cargo ship* means a ship designed for the carriage of roll-on-roll-off cargo transportation units.

.25 *Ro-ro cargo ship (vehicle carrier)* means a multi-deck roll-on-roll-off cargo ship designed for the carriage of empty cars and trucks.

.26 *Ro-ro passenger ship* means a passenger ship with roll-on-roll-off cargo spaces.

.27 *Tanker* means an oil tanker as defined in regulation 1 of Annex I of the present Convention or a chemical tanker or an NLS tanker as defined in regulation 1 of Annex II to the present Convention.

3 For the purpose of chapter 5:

.1 *Attained annual GHG fuel intensity (attained annual GFI),* expressed in grams of CO_2eq per unit of energy (gCO_2eq/MJ), means the weighted average GHG intensity of all fuels used on board a ship in a given calendar year on a well-to-wake (WtW) basis, taking into account guidelines to be developed by the Organization in accordance with regulation 33 of this Annex.

.2 *CO_2 equivalent (CO_2eq)* means the metric measure used to aggregate the emissions of CO_2, CH_4 and N_2O on the basis of their 100 year global-warming potential (GWP), by converting the amounts of CH_4 and N_2O to the equivalent amount of CO_2 as given into the fifth IPCC Assessment Report.

.3 *Existing ship* means a ship which is not a new ship.

.4 *Fuel* means any energy source or energy carrier used on board a ship for propulsion or for the operation of any equipment on board a ship.

.5 *Fuel Lifecycle Label* (FLL) means the technical tool to collect and convey information relevant for the life cycle GHG intensity assessment (LCA) of a fuel.

.6 *GFI compliance balance*, expressed in tonnes of CO_2eq, means the measurement of a ship's GFI compliance status against the target annual GHG fuel intensity in accordance with regulation 36 of this Annex.

.7 *GFI compliance deficit*, expressed in tonnes of CO_2eq, means the amount of under-compliance by a ship with the target annual GFI in accordance with regulation 36 of this Annex.

.8 *GHG fuel intensity (GFI),* expressed in grams of CO_2eq per unit of energy (gCO_2eq/MJ), refers to the amount of life cycle GHG emissions per unit of energy used on board a ship on a well-to-wake basis, taking into account guidelines developed by the Organization.[5]

.9 *Greenhouse gas (GHG) emissions* means any release of carbon dioxide (CO_2), methane (CH_4) or nitrous oxide (N_2O) into the atmosphere.

.10 *New ship* means a ship:

.1 for which the building contract is placed on or after 1 January 2028; or

.2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 July 2028; or

.3 the delivery of which is on or after 1 July 2030.

.11 *Remedial unit (RU)*, expressed in tonnes of CO_2eq, is a non-transferable unit acquired by means of GHG emissions pricing contributions to the IMO Net-Zero Fund, for use by the ship to balance its compliance deficit in accordance with regulation 36 of this Annex.

.12 *Reward* means an annual compensation provided by the IMO Net-Zero Fund for used ZNZs in accordance with regulation 39 of this Annex.

.13 *Semi-submersible vessel* is a type of ship that is designed to carry ships, marine facilities and large loads, generally installed with high superstructure or deck room or floating tank at tow or stern, and is able to partially submerge in cargo handling.

.14 *Ship account* means a mandatory account for a ship to which chapter 5 of this Annex applies within the IMO GFI Registry in accordance with regulation 38 of this Annex.

.15 *Ship account statement* means the annual ship account statement issued by the IMO GFI Registry reflecting the transactions recorded in that account in accordance with regulation 38 of this Annex.

.16 *Surplus unit (SU),* expressed in tonnes of CO_2eq, means a transferable unit a ship in direct compliance is eligible to receive in accordance with regulation 36 of this Annex.

.17 *Sustainable fuel certification scheme (SFCS)* is a scheme, administered by a legal entity, which certifies that a fuel is compliant with the requirements set out in chapter 5 of this Annex and its associated guidelines.

[5] Refer to the *2024 Guidelines on life cycle GHG intensity of marine fuels* (resolution MEPC.391(81)), as may be amended.

.18 *Target annual GHG fuel intensity (target annual GFI)*, expressed in grams of CO_2eq per unit of energy (gCO_2eq/MJ), is the value of the two tiers target annual GFI (base target and direct compliance target) in accordance with regulation 35 of this Annex.

.19 *Zero or near-zero GHG emission technologies, fuels and/or energy sources (ZNZs)* means the type of ZNZs that qualifies for the annual fuel reward in accordance with regulation 39.

Regulation 3
Exceptions and exemptions

General

1 Regulations of this Annex shall not apply to:

.1 any emission necessary for the purpose of securing the safety of a ship or saving life at sea; or

.2 any emission resulting from damage to a ship or its equipment:

.2.1 provided that all reasonable precautions have been taken after the occurrence of the damage or discovery of the emission for the purpose of preventing or minimizing the emission; and

.2.2 except if the owner or the master acted either with intent to cause damage, or recklessly and with knowledge that damage would probably result.

Trials for ship emission reduction and control technology research

2 The Administration of a Party may, in cooperation with other Administrations as appropriate, issue an exemption from specific provisions of this Annex for a ship to conduct trials for the development of ship emission reduction and control technologies and engine design programmes. Such an exemption shall only be provided if the applications of specific provisions of the Annex or the revised NO_x Technical Code 2008 could impede research into the development of such technologies or programmes. A permit issued under this regulation shall not exempt a ship from the reporting requirement under regulation 27 and regulation 37 shall not alter the type and scope of data required to be reported under regulation 27 and regulation 37. A permit for such an exemption shall only be provided to the minimum number of ships necessary and be subject to the following provisions:

.1 for marine diesel engines with a per cylinder displacement up to 30 L, the duration of the sea trial shall not exceed 18 months. If additional time is required, a permitting Administration or Administrations may permit a renewal for one additional 18-month period; or

.2 for marine diesel engines with a per cylinder displacement at or above 30 L, the duration of the ship trial shall not exceed five years and shall require a progress review by the permitting Administration or Administrations at each intermediate survey. A permit may be withdrawn based on this review if the testing has not adhered to the conditions of the permit or if it is determined that the technology or programme is not likely to produce effective results in the reduction and control of ship emissions. If the reviewing Administration or

Administrations determine that additional time is required to conduct a test of a particular technology or programme, a permit may be renewed for an additional time period not to exceed five years.

Emissions from seabed mineral activities

3.1 Emissions directly arising from the exploration, exploitation and associated offshore processing of seabed mineral resources are, consistent with article 2(3)(b)(ii) of the present Convention, exempt from the provisions of this Annex. Such emissions include the following:

.1 emissions resulting from the incineration of substances that are solely and directly the result of exploration, exploitation and associated offshore processing of seabed mineral resources, including but not limited to the flaring of hydrocarbons and the burning of cuttings, muds, and/or stimulation fluids during well completion and testing operations, and flaring arising from upset conditions;

.2 the release of gases and volatile compounds entrained in drilling fluids and cuttings;

.3 emissions associated solely and directly with the treatment, handling or storage of seabed minerals; and

.4 emissions from marine diesel engines that are solely dedicated to the exploration, exploitation and associated offshore processing of seabed mineral resources.

3.2 The requirements of regulation 18 of this Annex shall not apply to the use of hydrocarbons that are produced and subsequently used on site as fuel, when approved by the Administration.

Unmanned non-self-propelled barges

4 The Administration may exempt an unmanned non-self-propelled (UNSP) barge[6] from the requirements of regulations 5.1 and 6.1 of this Annex by means of an International Air Pollution Prevention Exemption Certificate for Unmanned Non-self-propelled (UNSP) Barges, for a period not exceeding five years provided that the barge has undergone a survey to confirm that conditions referred to in regulations 2.1.32.1 to 2.1.32.3 of this Annex are met.

Regulation 4
Equivalents

1 The Administration of a Party may allow any fitting, material, appliance or apparatus to be fitted in a ship or other procedures, alternative fuel oils, or compliance methods used as an alternative to those required by this Annex if such fitting, material, appliance or apparatus or other procedures, alternative fuel oils, or compliance methods are at least as effective in terms of emissions reductions as those required by this Annex, including any of the standards set forth in regulations 13 and 14.

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

2 The Administration of a Party that allows a fitting, material, appliance or apparatus or other procedures, alternative fuel oils, or compliance methods used as an alternative to those required by this Annex shall communicate to the Organization for circulation to the Parties particulars thereof, for their information and appropriate action, if any.

3 The Administration of a Party should take into account any relevant guidelines developed by the Organization[7] pertaining to the equivalents provided for in this regulation.

4 The Administration of a Party that allows the use of an equivalent as set forth in paragraph 1 of this regulation shall endeavour not to impair or damage its environment, human health, property or resources or those of other States.

Chapter 2 – Survey, certification and means of control

Regulation 5
Surveys

1 Every ship of 400 gross tonnage and above and every fixed and floating drilling rig or other platform shall, to ensure compliance with the requirements of chapter 3 of this Annex, be subject to the surveys specified below:

.1 An initial survey before the ship is put into service or before the certificate required under regulation 6 of this Annex is issued for the first time. This survey shall be such as to ensure that the equipment, systems, fittings, arrangements and material fully comply with the applicable requirements of chapter 3 of this Annex;

.2 A renewal survey at intervals specified by the Administration, but not exceeding five years, except where regulation 9.2, 9.5, 9.6 or 9.7 of this Annex is applicable. The renewal survey shall be such as to ensure that the equipment, systems, fittings, arrangements and material fully comply with applicable requirements of chapter 3 of this Annex;

.3 An intermediate survey within three months before or after the second anniversary date or within three months before or after the third anniversary date of the certificate which shall take the place of one of the annual surveys specified in paragraph 1.4 of this regulation. The intermediate survey shall be such as to ensure that the equipment and arrangements fully comply with the applicable requirements of chapter 3 of this Annex and are in good working order. Such intermediate surveys shall be endorsed on the IAPP Certificate issued under regulation 6 or 7 of this Annex;

.4 An annual survey within three months before or after each anniversary date of the certificate, including a general inspection of the equipment, systems, fittings, arrangements and material referred to in paragraph 1.1 of this regulation to ensure that they have been maintained in accordance with paragraph 5 of this regulation and that they remain satisfactory for the service for which the ship is intended. Such annual surveys shall be endorsed on the IAPP Certificate issued under regulation 6 or 7 of this Annex; and

[7] Refer to the *2021 Guidelines for exhaust gas cleaning systems* (resolution MEPC.340(77)) and its corrigendum, and to the *2023 Guidelines for Thermal Waste Treatment Devices (TWTD)* (resolution MEPC.373(80).

.5 An additional survey either general or partial, according to the circumstances, shall be made whenever any important repairs or renewals are made as prescribed in paragraph 5 of this regulation or after a repair resulting from investigations prescribed in paragraph 6 of this regulation. The survey shall be such as to ensure that the necessary repairs or renewals have been effectively made, that the material and workmanship of such repairs or renewals are in all respects satisfactory and that the ship complies in all respects with the requirements of chapter 3 of this Annex.

2 In the case of ships of less than 400 gross tonnage, the Administration may establish appropriate measures in order to ensure that the applicable provisions of chapter 3 of this Annex are complied with.

3 Surveys of ships as regards the enforcement of the provisions of this Annex shall be carried out by officers of the Administration.

.1 The Administration may, however, entrust the surveys either to surveyors nominated for the purpose or to organizations recognized by it. Such organizations shall comply with the guidelines adopted by the Organization.[8]

.2 The survey of marine diesel engines and equipment for compliance with regulation 13 of this Annex shall be conducted in accordance with the revised NO_x Technical Code 2008.

.3 When a nominated surveyor or recognized organization determines that the condition of the equipment does not correspond substantially with the particulars of the certificate, it shall ensure that corrective action is taken and shall in due course notify the Administration. If such corrective action is not taken, the certificate shall be withdrawn by the Administration. If the ship is in a port of another Party, the appropriate authorities of the port State shall also be notified immediately. When an officer of the Administration, a nominated surveyor or recognized organization has notified the appropriate authorities of the port State, the Government of the port State concerned shall give such officer, surveyor or organization any necessary assistance to carry out their obligations under this regulation.

.4 In every case, the Administration concerned shall fully guarantee the completeness and efficiency of the survey and shall undertake to ensure the necessary arrangements to satisfy this obligation.

4 Ships to which chapter 4 of this Annex applies shall also be subject to the surveys specified below, taking into account the guidelines adopted by the Organization:[9]

.1 an initial survey carried out before a new ship is put in service and before the International Energy Efficiency Certificate is issued. The survey shall verify that the ship's attained EEDI is in accordance with the requirements in chapter 4 of this Annex, and that the SEEMP required by regulation 26 of this Annex is on board;

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8 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)). Refer also to *Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2023* (resolution A.1186(33)).

9 Refer to the *2022 Guidelines on survey and certification of the Energy Efficiency Design Index* (resolution MEPC.365(79), as amended by resolutions MEPC.374(80) and MEPC.403(83); and the *2022 Guidelines on survey and certification of the attained Energy Efficiency Existing Ship Index (EEXI)* (resolution MEPC.351(78)).

.2 a general or partial survey, according to the circumstances, carried out after a major conversion of a new ship to which this regulation applies. The survey shall ensure that the attained EEDI is recalculated as necessary and meets the requirement of regulation 24 of this Annex, with the reduction factor applicable to the ship type and size of the converted ship in the phase corresponding to the date of contract or keel laying or delivery determined for the original ship in accordance with regulation 2.2.18 of this Annex;

.3 in cases where the major conversion of a new or existing ship is so extensive that the ship is regarded by the Administration as a newly constructed ship, the Administration shall determine the necessity of an initial survey on attained EEDI. Such a survey, if determined necessary, shall ensure that the attained EEDI is calculated and meets the requirement of regulation 24 of this Annex, with the reduction factor applicable corresponding to the ship type and size of the converted ship at the date of the contract of the conversion, or in the absence of a contract, the commencement date of the conversion. The survey shall also verify that the SEEMP required by regulation 26 of this Annex is on board and, for a ship to which regulation 27 applies, has been revised appropriately to reflect a major conversion in those cases where the major conversion affects data collection methodology and/or reporting processes;

.4 for existing ships, the verification of the requirement to have a SEEMP on board according to regulation 26 of this Annex shall take place at the first intermediate or renewal survey identified in paragraph 1 of this regulation, whichever is the first, on or after 1 January 2013;

.5 the Administration shall ensure that for each ship to which regulation 27 applies, the SEEMP complies with regulation 26.2 of this Annex. This shall be done prior to collecting data under regulation 27 of this Annex in order to ensure the methodology and processes are in place prior to the beginning of the ship's first reporting period. Confirmation of compliance shall be provided to and retained on board the ship;

.6 the Administration shall ensure that, for each ship to which regulation 28 applies, the SEEMP complies with regulation 26.3.1 of this Annex. This shall be done prior to 1 January 2023. Confirmation of compliance shall be provided to, and retained on board, the ship;

.7 the verification that the ship's attained EEXI is in accordance with the requirements in regulations 23 and 25 of this Annex shall take place at the first annual, intermediate or renewal survey identified in paragraph 1 of this regulation or the initial survey identified in paragraphs 4.1 and 4.3 of this regulation, whichever is the first, on or after 1 January 2023; and

.8 notwithstanding paragraph 4.7 of this regulation, a general or partial survey, according to the circumstances, carried out after a major conversion of a ship to which regulation 23 of this Annex applies. The survey shall ensure that the attained EEXI is recalculated as necessary and meets the requirement of regulation 25 of this Annex.

5 Ships to which chapter 5 of this Annex applies shall also be subject to the survey specified below, taking into account the guidelines adopted by the Organization:[10]

.1 an initial survey carried out before a new ship is put in service and before the International Energy Efficiency Certificate is issued. The survey shall verify that the SEEMP required by regulation 26 of this Annex is on board; and

.2 for existing ships, the Administration shall ensure that, for each ship to which chapter 5 of this Annex applies, the SEEMP complies with regulation 26.4 of this Annex. This shall be done prior to 1 January 2028. Confirmation of compliance shall be provided to, and retained on board, the ship.

6 The equipment shall be maintained to conform with the provisions of this Annex and no changes shall be made in the equipment, systems, fittings, arrangements or material covered by the survey, without the express approval of the Administration. The direct replacement of such equipment and fittings with equipment and fittings that conform with the provisions of this Annex is permitted.

7 Whenever an accident occurs to a ship or a defect is discovered that substantially affects the efficiency or completeness of its equipment covered by this Annex, the master or owner of the ship shall report at the earliest opportunity to the Administration, a nominated surveyor or recognized organization responsible for issuing the relevant certificate.

Regulation 6
Issue or endorsement of Certificates and Statements of Compliance related to fuel oil consumption reporting, operational carbon intensity rating, and annual GHG fuel intensity

International Air Pollution Prevention Certificate

1 An International Air Pollution Prevention (IAPP) Certificate shall be issued, after an initial or renewal survey in accordance with the provisions of regulation 5 of this Annex, to:

.1 any ship of 400 gross tonnage and above engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties; and

.2 platforms and drilling rigs engaged in voyages to waters under the sovereignty or jurisdiction of other Parties.

2 A ship constructed before the date this Annex enters into force for that particular ship's Administration, shall be issued with an IAPP Certificate in accordance with paragraph 1 of this regulation no later than the first scheduled dry-docking after the date of such entry into force, but in no case later than three years after this date.

3 Such certificate shall be issued or endorsed either by the Administration or by any person or organization duly authorized by it.[11] In every case, the Administration assumes full responsibility for the certificate.

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10 Refer to the *2022 Guidelines on survey and certification of the Energy Efficiency Design Index* (resolution MEPC.365(79), as amended by resolution MEPC.374(80), as may be further amended; and the *2022 Guidelines on survey and certification of the attained Energy Efficiency Existing Ship Index (EEXI)* (resolution MEPC.351(78)).

11 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

International Energy Efficiency Certificate

4 An International Energy Efficiency Certificate for the ship shall be issued after a survey in accordance with the provisions of regulation 5.4 of this Annex to any ship of 400 gross tonnage and above before that ship may engage in voyages to ports or offshore terminals under the jurisdiction of other Parties.

5 The certificate shall be issued or endorsed either by the Administration or any organization duly authorized by it. In every case, the Administration assumes full responsibility for the certificate.

Statement of Compliance related to fuel oil consumption reporting and operational carbon intensity rating

6 Upon receipt of reported data pursuant to regulation 27.3 of this Annex and attained annual operational CII pursuant to regulation 28.2 of this Annex, the Administration or any organization duly authorized by it[9] shall:

.1 determine whether the data has been reported in accordance with regulation 27 of this Annex;

.2 verify that the attained annual operational CII reported is based on the data submitted in accordance with regulation 27 of this Annex;

.3 based on the verified attained annual operational CII, determine the operational carbon intensity rating of the ship in accordance with regulation 28.6 of this Annex; and

.4 issue a Statement of Compliance related to fuel oil consumption reporting and operational carbon intensity rating to the ship no later than five months from the beginning of the calendar year, upon determination and verification pursuant to regulations 6.6.1 to 6.6.3 of this Annex. In every case, the Administration assumes full responsibility for this Statement of Compliance.

7 Upon receipt of reported data pursuant to regulations 27.4, 27.5 or 27.6 of this Annex, the Administration or any organization duly authorized by it[12] shall promptly determine whether the data has been reported in accordance with regulation 27 and, if so, issue a Statement of Compliance to the ship. In every case, the Administration assumes full responsibility for this Statement of Compliance.

8 Notwithstanding paragraph 6 of this regulation, a ship rated as D for three consecutive years or rated as E in accordance with regulation 28 of this Annex shall not be issued a Statement of Compliance unless a plan of corrective actions is duly developed and reflected in the SEEMP and verified by the Administration or any organization duly authorized by it[12] in accordance with regulations 28.7 and 28.8 of this Annex.

12 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

Statement of Compliance related to the annual GHG fuel intensity

9 Upon receipt of reported data pursuant to regulation 37 of this Annex on attained annual GFI, target annual GFI and GFI compliance balance, the Administration, or any organization duly authorized by it,[13] shall:

.1 verify whether the data has been reported in accordance with paragraph 1 of regulation 33 and paragraph 1 of regulation 37 of this Annex;

.2 verify that the attained annual GFI was calculated in accordance with regulations 33 and 34 of this Annex;

.3 verify that the target annual GFI was calculated in accordance with regulation 35 of this Annex;

.4 verifiy that the GFI compliance balance was determined in accordance with regulation 36 of this Annex;

.5 report the verified data to the IMO GFI Registry in accordance with regulation 37 of this Annex ;

.6 verifiy, upon receipt from the IMO GFI Registry of the annual ship account statement, that the ship complies with chapter 5 of this Annex and has paid the annual administrative fee to the IMO GFI Registry;

.7 verify for a ship eligible for rewards the total amount of GHG emissions avoided by the use of ZNZs in accordance with regulation 39; and

.8 issue a Statement of Compliance related to annual GHG fuel intensity to the ship no later than nine months after the beginning of the calendar year, upon verification pursuant to regulations 6.9.1 to 6.9.7. In every case, the Administration assumes full responsibility for this Statement of Compliance.

10 Upon receipt of reported data pursuant to paragraph 7 of regulation 37 of this Annex, the Administration or any organization duly authorized by it shall promptly verify and determine whether the data has been reported in accordance with paragraph 1 of regulation 37 and, if so, issue a Statement of Compliance to the ship taking into account guidelines to be developed by the Organization. In every case, the Administration assumes full responsibility for this Statement of Compliance.

Regulation 7
Issue of a Certificate by another Party

1 A Party may, at the request of the Administration, cause a ship to be surveyed and, if satisfied that the provisions of this Annex are complied with, shall issue or authorize the issue of an IAPP Certificate or an International Energy Efficiency Certificate to the ship, and where appropriate, endorse or authorize the endorsement of such certificates on the ship, in accordance with this Annex.

2 A copy of the certificate and a copy of the survey report shall be transmitted as soon as possible to the requesting Administration.

[13] Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

3 A certificate so issued shall contain a statement to the effect that it has been issued at the request of the Administration and it shall have the same force and receive the same recognition as a certificate issued under regulation 6 of this Annex.

4 No IAPP Certificate, International Energy Efficiency Certificate or UNSP Exemption Certificate shall be issued to a ship which is entitled to fly the flag of a State which is not a Party.

Regulation 8
Form of Certificates and Statements of Compliance related to fuel oil consumption reporting, operational carbon intensity rating and annual GHG fuel intensity

International Air Pollution Prevention Certificate

1 The IAPP Certificate shall be drawn up in a form corresponding to the model given in appendix I to this Annex and shall be at least in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in case of a dispute or discrepancy.

International Energy Efficiency Certificate

2 The International Energy Efficiency Certificate shall be drawn up in a form corresponding to the model given in appendix VIII to this Annex and shall be at least in English, French or Spanish. If an official language of the issuing Party is also used, this shall prevail in case of a dispute or discrepancy.

Statement of Compliance related to fuel oil consumption reporting and operational carbon intensity rating

3 The Statement of Compliance pursuant to regulations 6.6 and 6.7 of this Annex shall be drawn up in a form corresponding to the model given in appendix X to this Annex and shall be at least in English, French or Spanish. If an official language of the issuing Party is also used, this shall prevail in case of a dispute or discrepancy.

International Air Pollution Prevention Exemption Certificate for Unmanned Non-self-propelled Barges

4 In accordance with regulation 3.4 of this Annex, the International Air Pollution Prevention Exemption Certificate for Unmanned Non-self-propelled Barges shall be drawn up in the form corresponding to the model given in appendix XI to this Annex and shall be at least in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in the event of a dispute or discrepancy.

Statement of Compliance related to the annual GHG fuel intensity

5 The Statement of Compliance issued pursuant to paragraphs 9 and 10 of regulation 6 of this Annex shall be drawn up in a form corresponding to the model given in appendix XIII to this Annex and shall be at least in English, French or Spanish. If an official language of the issuing Party is also used, this shall prevail in case of a dispute or discrepancy.

Regulation 9
Duration and validity of Certificates and Statements of Compliance related to fuel oil consumption reporting, operational carbon intensity rating, and the annual GHG fuel intensity

International Air Pollution Prevention Certificate

1 An IAPP Certificate shall be issued for a period specified by the Administration, which shall not exceed five years.

2 Notwithstanding the requirements of paragraph 1 of this regulation:

.1 when the renewal survey is completed within three months before the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of expiry of the existing certificate;

.2 when the renewal survey is completed after the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of expiry of the existing certificate; and

.3 when the renewal survey is completed more than three months before the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of completion of the renewal survey.

3 If a certificate is issued for a period of less than five years, the Administration may extend the validity of the certificate beyond the expiry date to the maximum period specified in paragraph 1 of this regulation, provided that the surveys referred to in regulations 5.1.3 and 5.1.4 of this Annex applicable when a certificate is issued for a period of five years are carried out as appropriate.

4 If a renewal survey has been completed and a new certificate cannot be issued or placed on board the ship before the expiry date of the existing certificate, the person or organization authorized by the Administration may endorse the existing certificate and such a certificate shall be accepted as valid for a further period that shall not exceed five months from the expiry date.

5 If a ship, at the time when a certificate expires, is not in a port in which it is to be surveyed, the Administration may extend the period of validity of the certificate, but this extension shall be granted only for the purpose of allowing the ship to complete its voyage to the port in which it is to be surveyed, and then only in cases where it appears proper and reasonable to do so. No certificate shall be extended for a period longer than three months, and a ship to which an extension is granted shall not, on its arrival in the port in which it is to be surveyed, be entitled by virtue of such extension to leave that port without having a new certificate. When the renewal survey is completed, the new certificate shall be valid to a date not exceeding five years from the date of expiry of the existing certificate before the extension was granted.

6 A certificate issued to a ship engaged on short voyages that has not been extended under the foregoing provisions of this regulation may be extended by the Administration for a period of grace of up to one month from the date of expiry stated on it. When the renewal survey is completed, the new certificate shall be valid to a date not exceeding five years from the date of expiry of the existing certificate before the extension was granted.

7 In special circumstances, as determined by the Administration, a new certificate need not be dated from the date of expiry of the existing certificate as required by paragraph 2.1, 5 or 6 of this regulation. In these special circumstances, the new certificate shall be valid to a date not exceeding five years from the date of completion of the renewal survey.

8 If an annual or intermediate survey is completed before the period specified in regulation 5 of this Annex, then:

.1 the anniversary date shown on the certificate shall be amended by endorsement to a date that shall not be more than three months later than the date on which the survey was completed;

.2 the subsequent annual or intermediate survey required by regulation 5 of this Annex shall be completed at the intervals prescribed by that regulation using the new anniversary date; and

.3 the expiry date may remain unchanged, provided one or more annual or intermediate surveys, as appropriate, are carried out so that the maximum intervals between the surveys prescribed by regulation 5 of this Annex are not exceeded.

9 A certificate issued under regulation 6 or 7 of this Annex shall cease to be valid in any of the following cases:

.1 if the relevant surveys are not completed within the periods specified under regulation 5.1 of this Annex;

.2 if the certificate is not endorsed in accordance with regulation 5.1.3 or 5.1.4 of this Annex; and

.3 upon transfer of the ship to the flag of another State. A new certificate shall only be issued when the Government issuing the new certificate is fully satisfied that the ship is in compliance with the requirements of regulation 5.5 of this Annex. In the case of a transfer between Parties, if requested within three months after the transfer has taken place, the Government of the Party whose flag the ship was formerly entitled to fly shall, as soon as possible, transmit to the Administration copies of the certificate carried by the ship before the transfer and, if available, copies of the relevant survey reports.

International Energy Efficiency Certificate

10 The International Energy Efficiency Certificate shall be valid throughout the life of the ship subject to the provisions of paragraph 11 below.

11 An International Energy Efficiency Certificate issued under this Annex shall cease to be valid in any of the following cases:

.1 if the ship is withdrawn from service or if a new certificate is issued following major conversion of the ship; or

.2 upon transfer of the ship to the flag of another State. A new certificate shall only be issued when the Government issuing the new certificate is fully satisfied that the ship is in compliance with the requirements of chapter 4 of this Annex. In the case of a transfer between Parties, if requested within three

months after the transfer has taken place, the Government of the Party whose flag the ship was formerly entitled to fly shall, as soon as possible, transmit to the Administration copies of the certificate carried by the ship before the transfer and, if available, copies of the relevant survey reports; or

.3 if the ship's equipment, systems, fittings, arrangements, or material covered by the survey were changed without the express approval of the Administration, as provided for in regulation 5.5 of this Annex, unless regulation 3 of this Annex applies.

Statement of Compliance related to fuel oil consumption reporting and operational carbon intensity rating

12 The Statement of Compliance issued pursuant to regulation 6.6 of this Annex shall be valid for the calendar year in which it is issued and for the first five months of the following calendar year. The Statement of Compliance issued pursuant to regulation 6.7 of this Annex shall be valid for the calendar year in which it is issued, for the following calendar year, and for the first five months of the subsequent calendar year. All Statements of Compliance shall be kept on board for at least five years.

Statement of Compliance related to the annual GHG fuel intensity

13 The Statement of Compliance issued pursuant to paragraph 9 of regulation 6 of this Annex shall be valid for the calendar year in which it is issued and for the first nine months of the following calendar year. The Statement of Compliance issued pursuant to paragraph 10 of regulation 6 of this Annex shall be valid until for the calendar year in which it is issued, for the following calendar year, and for the first nine months of the subsequent calendar year. All Statements of Compliance shall be kept on board for at least five years.

Regulation 10
Port State control on operational requirements

1 A ship, when in a port or an offshore terminal under the jurisdiction of another Party, is subject to inspection by officers duly authorized by such Party concerning operational requirements under this Annex,[14] where there are clear grounds for believing that the master or crew are not familiar with essential shipboard procedures relating to the prevention of air pollution from ships.

2 In the circumstances given in paragraph 1 of this regulation, the Party shall take steps to ensure that the ship shall not sail until the situation has been brought to order in accordance with the requirements of this Annex.

3 Procedures relating to the port State control prescribed in article 5 of the present Convention shall apply to this regulation.

4 Nothing in this regulation shall be construed to limit the rights and obligations of a Party carrying out control over operational requirements specifically provided for in the present Convention.

5 In relation to chapters 4 and 5 of this Annex, any port State inspection may verify, when appropriate, that there are valid Statements of Compliance related to fuel oil consumption reporting and operational carbon intensity rating and to annual GHG fuel intensity, an International Energy Efficiency Certificate and a Ship Energy Efficiency Management Plan on board, in accordance with article 5 of the present Convention.

[14] Refer to *Procedures for port State control, 2023* (resolution A.1185(33)).

6 Notwithstanding the requirements in paragraph 5 of this regulation, any port State inspection may inspect whether the Ship Energy Efficiency Management Plan is duly implemented by the ship in accordance with regulation 28 of this Annex.

Regulation 11
Detection of violations and enforcement

1 Parties shall cooperate in the detection of violations and the enforcement of the provisions of this Annex, using all appropriate and practicable measures of detection and environmental monitoring, and adequate procedures for reporting and accumulation of evidence.

2 A ship to which this Annex applies may, in any port or offshore terminal of a Party, be subject to inspection by officers appointed or authorized by that Party for the purpose of verifying whether the ship has emitted any of the substances covered by this Annex in violation of the provision of this Annex. If an inspection indicates a violation of this Annex, a report shall be forwarded to the Administration for any appropriate action.

3 Any Party shall furnish to the Administration evidence, if any, that the ship has emitted any of the substances covered by this Annex in violation of the provisions of this Annex. If it is practicable to do so, the competent authority of the former Party shall notify the master of the ship of the alleged violation.

4 Upon receiving such evidence, the Administration shall investigate the matter and may request the other Party to furnish further or better evidence of the alleged contravention. If the Administration is satisfied that sufficient evidence is available to enable proceedings to be brought in respect of the alleged violation, it shall cause such proceedings to be taken in accordance with its law as soon as possible. The Administration shall promptly inform the Party that has reported the alleged violation, as well as the Organization, of the action taken.

5 A Party may also inspect a ship to which this Annex applies when it enters the ports or offshore terminals under its jurisdiction, if a request for an investigation is received from any Party together with sufficient evidence that the ship has emitted any of the substances covered by the Annex in any place in violation of this Annex. The report of such investigation shall be sent to the Party requesting it and to the Administration so that the appropriate action may be taken under the present Convention.

6 The international law concerning the prevention, reduction and control of pollution of the marine environment from ships, including that law relating to enforcement and safeguards, in force at the time of application or interpretation of this Annex, applies, mutatis mutandis, to the rules and standards set forth in this Annex.

Chapter 3 – Requirements for control of emissions from ships

Regulation 12
Ozone-depleting substances

1 This regulation does not apply to permanently sealed equipment where there are no refrigerant charging connections or potentially removable components containing ozone-depleting substances.

2 Subject to the provisions of regulation 3.1, any deliberate emissions of ozone-depleting substances shall be prohibited. Deliberate emissions include emissions occurring in the course of maintaining, servicing, repairing or disposing of systems or equipment, except that deliberate emissions do not include minimal releases associated with

the recapture or recycling of an ozone-depleting substance. Emissions arising from leaks of an ozone-depleting substance, whether or not the leaks are deliberate, may be regulated by Parties.

3.1 Installations that contain ozone-depleting substances, other than hydrochlorofluorocarbons, shall be prohibited:

.1 on ships constructed on or after 19 May 2005; or

.2 in the case of ships constructed before 19 May 2005 which have a contractual delivery date of the equipment to the ship on or after 19 May 2005 or, in the absence of a contractual delivery date, the actual delivery of the equipment to the ship on or after 19 May 2005.

3.2 Installations that contain hydrochlorofluorocarbons shall be prohibited:

.1 on ships constructed on or after 1 January 2020; or

.2 in the case of ships constructed before 1 January 2020 which have a contractual delivery date of the equipment to the ship on or after 1 January 2020 or, in the absence of a contractual delivery date, the actual delivery of the equipment to the ship on or after 1 January 2020.

4 The substances referred to in this regulation, and equipment containing such substances, shall be delivered to appropriate reception facilities when removed from ships.

5 Each ship subject to regulation 6.1 shall maintain a list of equipment containing ozone-depleting substances.[15]

6 Each ship subject to regulation 6.1 that has rechargeable systems that contain ozone-depleting substances shall maintain an ozone-depleting substances record book. This record book may form part of an existing logbook or electronic record book[16] as approved by the Administration. An electronic recording system referred to in regulation 12.6, as adopted by resolution MEPC.176(58), shall be considered an electronic record book, provided the electronic recording system is approved by the Administration on or before the first IAPP Certificate renewal survey carried out on or after 1 October 2020, but not later than 1 October 2025, taking into account the guidelines developed by the Organization.

7 Entries in the ozone-depleting substances record book shall be recorded in terms of mass (kg) of substance and shall be completed without delay on each occasion, in respect of the following:

.1 recharge, full or partial, of equipment containing ozone-depleting substances;

.2 repair or maintenance of equipment containing ozone-depleting substances;

.3 discharge of ozone-depleting substances to the atmosphere:

.1 deliberate; and

.2 non-deliberate;

15 See appendix I, Supplement to International Air Pollution Prevention Certificate (IAPP Certificate), section 2.1.

16 Refer to *Guidelines for the use of electronic record books under MARPOL* (resolution MEPC.312(74)).

.4 discharge of ozone-depleting substances to land-based reception facilities; and

.5 supply of ozone-depleting substances to the ship.

Regulation 13
Nitrogen oxides (NO_x)

Application

1.1 This regulation shall apply to:

.1 each marine diesel engine with a power output of more than 130 kW installed on a ship; and

.2 each marine diesel engine with a power output of more than 130 kW that undergoes a major conversion on or after 1 January 2000 except when demonstrated to the satisfaction of the Administration that such engine is an identical replacement to the engine that it is replacing and is otherwise not covered under paragraph 1.1.1 of this regulation.

1.2 This regulation does not apply to:

.1 a marine diesel engine intended to be used solely for emergencies or solely to power any device or equipment intended to be used solely for emergencies on the ship on which it is installed, or a marine diesel engine installed in lifeboats intended to be used solely for emergencies; and

.2 a marine diesel engine installed on a ship solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly, provided that such engine is subject to an alternative NO_x control measure established by the Administration.

1.3 Notwithstanding the provisions of paragraph 1.1 of this regulation, the Administration may provide an exclusion from the application of this regulation for any marine diesel engine that is installed on a ship constructed, or for any marine diesel engine that undergoes a major conversion, before 19 May 2005, provided that the ship on which the engine is installed is solely engaged in voyages to ports or offshore terminals within the State the flag of which the ship is entitled to fly.

Major conversion

2.1 For the purpose of this regulation, *major conversion* means a modification on or after 1 January 2000 of a marine diesel engine that has not already been certified to the standards set forth in paragraph 3, 4 or 5.1.1 of this regulation where:

.1 the engine is replaced by a marine diesel engine or an additional marine diesel engine is installed, or

.2 any substantial modification, as defined in the revised NO_x Technical Code 2008, is made to the engine, or

.3 the maximum continuous rating of the engine is increased by more than 10% compared to the maximum continuous rating of the original certification of the engine.

2.2 For a major conversion involving the replacement of a marine diesel engine with a non-identical marine diesel engine, or the installation of an additional marine diesel engine, the standards in this regulation at the time of the replacement or addition of the engine shall apply. For the purpose of this regulation, the installation of a marine diesel engine replacing a steam system shall be considered a replacement engine. In the case of replacement engines only, if it is not possible for such a replacement engine to meet the standards set forth in paragraph 5.1.1 of this regulation (Tier III, as applicable), then that replacement engine shall meet the standards set forth in paragraph 4 of this regulation (Tier II), taking into account the guidelines developed by the Organization.[17] The Administration shall notify the Organization in those instances where a Tier II rather than a Tier III replacement engine has been installed on or after 1 August 2025 in accordance with the provisions of this paragraph.

2.3 A marine diesel engine referred to in paragraph 2.1.2 or 2.1.3 of this regulation shall meet the following standards:

.1 for ships constructed prior to 1 January 2000, the standards set forth in paragraph 3 of this regulation shall apply; and

.2 for ships constructed on or after 1 January 2000, the standards in force at the time the ship was constructed shall apply.

Tier I[18]

3 Subject to regulation 3 of this Annex, the operation of a marine diesel engine that is installed on a ship constructed on or after 1 January 2000 and prior to 1 January 2011 is prohibited, except when the emission of nitrogen oxides (calculated as the total weighted emission of NO_2) from the engine is within the following limits, where *n* = rated engine speed (crankshaft revolutions per minute):

.1 17.0 g/kWh when *n* is less than 130 rpm;

.2 45 $n^{(-0.2)}$ g/kWh when *n* is 130 or more but less than 2,000 rpm; and

.3 9.8 g/kWh when *n* is 2,000 rpm or more.

Tier II

4 Subject to regulation 3 of this Annex, the operation of a marine diesel engine that is installed on a ship constructed on or after 1 January 2011 is prohibited, except when the emission of nitrogen oxides (calculated as the total weighted emission of NO_2) from the engine is within the following limits, where *n* = rated engine speed (crankshaft revolutions per minute):

.1 14.4 g/kWh when *n* is less than 130 rpm;

.2 44 $n^{(-0.23)}$ g/kWh when *n* is 130 or more but less than 2,000 rpm;

.3 7.7 g/kWh when *n* is 2,000 rpm or more.

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17 Refer to the *2024 Guidelines as required by regulation 13.2.2 of MARPOL Annex VI in respect of non-identical replacement engines not required to meet the Tier III limit* (resolution MEPC.386(81)).

18 Refer to the *Guidelines for the application of the NO_X Technical Code relative to certification and amendments of Tier I engines* (MEPC.1/ Circ.679).

Tier III

5.1 Subject to regulation 3 of this Annex, in an emission control area designated for Tier III NO_x control under paragraph 6 of this regulation (NO_X Tier III emission control area), the operation of a marine diesel engine that is installed on a ship is prohibited:

.1 except when the emission of nitrogen oxides (calculated as the total weighted emission of NO_2) from the engine is within the following limits, where *n* = rated engine speed (crankshaft revolutions per minute):

.1 3.4 g/kWh when n is less than 130 rpm;

.2 9 $n^{(-0.2)}$ g/kWh when *n* is 130 or more but less than 2,000 rpm;

.3 2.0 g/kWh when *n* is 2,000 rpm or more;

when

.2 that ship is constructed on or after:

.1 1 January 2016 and is operating in the North American Emission Control Area or the United States Caribbean Sea Emission Control Area;

.2 1 January 2021 and is operating in the Baltic Sea Emission Control Area or the North Sea Emission Control Area;

.3 1 March 2026 and is operating in the Norwegian Sea Emission Control Area. For the Norwegian Sea Emission Control Area, "ship constructed on or after 1 March 2026" means a ship:

.1 for which the building contract is placed on or after 1 March 2026; or

.2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 September 2026; or

.3 the delivery of which is on or after 1 March 2030.

when

.3 that ship is operating in a NO_X Tier III emission control area other than an emission control area described in paragraph 5.1.2 of this regulation, and is constructed on or after the date of adoption of such an emission control area, or a later date as may be specified in the amendment designating the NO_X Tier III emission control area, whichever is later:

.1 that ship is constructed on or after 1 January 2025 and is operating in the Canadian Arctic Emission Control Area;

.2 that ship is constructed on or after 1 January 2027 and is operating in the North-East Atlantic Emission Control Area. For the North-East Atlantic Emission Control Area, "ship constructed on or after 1 January 2027" means a ship:

.1 for which the building contract is placed on or after 1 January 2027; or

.2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 July 2027; or

.3 the delivery of which is on or after 1 January 2031.

5.2 The standards set forth in paragraph 5.1.1 of this regulation shall not apply to:

.1 a marine diesel engine installed on a ship with a length (*L*), as defined in regulation 1.19 of Annex I to the present Convention, of less than 24 metres when it has been specifically designed, and is used solely, for recreational purposes; or

.2 a marine diesel engine installed on a ship with a combined nameplate diesel engine propulsion power of less than 750 kW if it is demonstrated, to the satisfaction of the Administration, that the ship cannot comply with the standards set forth in paragraph 5.1.1 of this regulation because of design or construction limitations of the ship; or

.3 a marine diesel engine installed on a ship constructed prior to 1 January 2021 of less than 500 gross tonnage, with a length (*L*), as defined in regulation 1.19 of Annex I to the present Convention, of 24 metres or over when it has been specifically designed, and is used solely, for recreational purposes.

5.3 The tier and on/off status of marine diesel engines installed on board a ship to which paragraph 5.1 of this regulation applies which are certified to both Tier II and Tier III or which are certified to Tier II only shall be recorded in such logbook or electronic record book[19] as prescribed by the Administration at entry into and exit from a NO_X Tier III emission control area, or when the on/off status changes within such an area, together with the date, time and position of the ship.

5.4 Emissions of nitrogen oxides from a marine diesel engine subject to paragraph 5.1 of this regulation that occur immediately following building and sea trials of a newly constructed ship, or before and following converting, repairing, and/or maintaining the ship, or maintenance or repair of a Tier II engine or a dual fuel engine when the ship is required to not have gas fuel or gas cargo on board due to safety requirements, for which activities take place in a shipyard or other repair facility located in a NO_X Tier III emission control area, are temporarily exempted provided the following conditions are met:

.1 the engine meets the Tier II NO_X limits; and

.2 the ship sails directly to or from the shipyard or other repair facility, does not load or unload cargo during the duration of the exemption, and follows any additional specific routeing requirements indicated by the port State in which the shipyard or other repair facility is located, if applicable.

19 Refer to *Guidelines for the use of electronic record books under MARPOL* (resolution MEPC.312(74)).

5.5 The exemption described in paragraph 5.4 of this regulation applies only for the following period:

.1 for a newly constructed ship, the period beginning at the time the ship is delivered from the shipyard, including sea trials, and ending at the time the ship directly exits the NO_X Tier III emission control area(s) or, with regard to a ship fitted with a dual fuel engine, the ship directly exits the NO_X Tier III emission control area(s) or proceeds directly to the nearest gas fuel bunkering facility appropriate to the ship located in the NO_X Tier III emission control area(s);

.2 for a ship with a Tier II engine undergoing conversion, maintenance or repair, the period beginning at the time the ship enters the NO_X Tier III emission control area(s) and proceeds directly to the shipyard or other repair facility, and ending at the time the ship is released from the shipyard or other repair facility and directly exits the NO_X Tier III emission control area (s) after performing sea trials, if applicable; or

.3 for a ship with a dual fuel engine undergoing conversion, maintenance or repair, when the ship is required to not have gas fuel or gas cargo on board due to safety requirements, the period beginning at the time the ship enters the NO_X Tier III emission control area(s) or when it is degassed in the NO_X Tier III emission control area(s) and proceeds directly to the shipyard or other repair facility, and ending at the time when the ship is released from the shipyard or other repair facility and directly exits the NO_X Tier III emission control area(s) or proceeds directly to the nearest gas fuel bunkering facility appropriate to the ship located in the NO_X Tier III emission control area(s).

Emission control area

6 For the purposes of this regulation, a NO_X Tier III emission control area shall be any sea area, including any port area, designated by the Organization in accordance with the criteria and procedures set forth in appendix III to this Annex. The NO_X Tier III emission control areas are:

.1 the North American Emission Control Area, which means the area described by the coordinates provided in appendix VII to this Annex;

.2 the United States Caribbean Sea Emission Control Area, which means the area described by the coordinates provided in appendix VII to this Annex;

.3 the Baltic Sea area as defined in regulation 1.11.2 of Annex I of the present Convention;

.4 the North Sea area as defined in regulation 1.14.6 of Annex V of the present Convention;

.5 the Canadian Arctic Emission Control area, which means the area described by the coordinates provided in appendix VII to this Annex;

.6 the Norwegian Sea as defined in regulation 13.9.4 of Annex II of the present Convention; and

.7 the North-East Atlantic Emission Control Area, which means the area described by the coordinates provided in appendix VII to this Annex.

Marine diesel engines installed on a ship constructed prior to 1 January 2000

7.1 Notwithstanding paragraph 1.1.1 of this regulation, a marine diesel engine with a power output of more than 5,000 kW and a per cylinder displacement at or above 90 L installed on a ship constructed on or after 1 January 1990 but prior to 1 January 2000 shall comply with the emission limits set forth in paragraph 7.4 of this regulation, provided that an approved method[20] for that engine has been certified by an Administration of a Party and notification of such certification has been submitted to the Organization by the certifying Administration.[21] Compliance with this paragraph shall be demonstrated through one of the following:

.1 installation of the certified approved method, as confirmed by a survey using the verification procedure specified in the approved method file, including appropriate notation on the ship's IAPP Certificate of the presence of the approved method; or

.2 certification of the engine confirming that it operates within the limits set forth in paragraph 3, 4, or 5.1.1 of this regulation and an appropriate notation of the engine certification on the ship's IAPP Certificate.

7.2 Paragraph 7.1 of this regulation shall apply no later than the first renewal survey that occurs 12 months or more after deposit of the notification in paragraph 7.1. If a shipowner of a ship on which an approved method is to be installed can demonstrate to the satisfaction of the Administration that the approved method was not commercially available despite best efforts to obtain it, then that approved method shall be installed on the ship no later than the next annual survey of that ship that falls after the approved method is commercially available.

7.3 With regard to a marine diesel engine with a power output of more than 5,000 kW and a per cylinder displacement at or above 90 L installed on a ship constructed on or after 1 January 1990, but prior to 1 January 2000, the IAPP Certificate shall, for a marine diesel engine to which paragraph 7.1 of this regulation applies, indicate one of the following:

.1 an approved method has been applied pursuant to paragraph 7.1.1 of this regulation;

.2 the engine has been certified pursuant to paragraph 7.1.2 of this regulation;

.3 an approved method is not yet commercially available as described in paragraph 7.2 of this regulation; or

.4 an approved method is not applicable.

7.4 Subject to regulation 3 of this Annex, the operation of a marine diesel engine described in paragraph 7.1 of this regulation is prohibited, except when the emission of nitrogen oxides (calculated as the total weighted emission of NO_2) from the engine is within the following limits, where n = rated engine speed (crankshaft revolutions per minute):

.1 17.0 g/kWh when n is less than 130 rpm;

.2 45 $n^{(-0.2)}$ g/kWh when n is 130 or more but less than 2,000 rpm; and

.3 9.8 g/kWh when n is 2,000 rpm or more.

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20 Refer to the *2014 Guidelines on the approved method process* (resolution MEPC.243(66)).

21 Refer to the *2014 Guidelines in respect of the information to be submitted by an Administration to the Organization covering the certification of an approved method as required under regulation 13.7.1 of MARPOL Annex VI* (resolution MEPC.242(66)).

7.5 Certification of an approved method shall be in accordance with chapter 7 of the revised NO_X Technical Code 2008 and shall include verification:

.1 by the designer of the base marine diesel engine to which the approved method applies that the calculated effect of the approved method will not decrease engine rating by more than 1.0%, increase fuel consumption by more than 2.0% as measured according to the appropriate test cycle set forth in the revised NO_X Technical Code 2008, or adversely affect engine durability or reliability; and

.2 that the cost of the approved method is not excessive, which is determined by a comparison of the amount of NO_X reduced by the approved method to achieve the standard set forth in paragraph 7.4 of this regulation and the cost of purchasing and installing such approved method.[22]

Certification

8 The revised NO_X Technical Code 2008 shall be applied in the certification, testing and measurement procedures for the standards set forth in this regulation.

9 The procedures for determining NO_X emissions set out in the revised NO_X Technical Code 2008 are intended to be representative of the normal operation of the engine. Defeat devices and irrational emission control strategies undermine this intention and shall not be allowed. This regulation shall not prevent the use of auxiliary control devices that are used to protect the engine and/or its ancillary equipment against operating conditions that could result in damage or failure or that are used to facilitate the starting of the engine.

Regulation 14
Sulphur oxides (SO_X) and particulate matter

General requirements

1 The sulphur content of fuel oil used or carried for use on board a ship shall not exceed 0.50% m/m.

2 The worldwide average sulphur content of residual fuel oil supplied for use on board ships shall be monitored taking into account the guidelines developed by the Organization.[23]

Requirements within emission control areas

3 For the purpose of this regulation, an emission control area shall be any sea area, including any port area, designated by the Organization in accordance with the criteria and procedures set forth in appendix III to this Annex. The emission control areas under this regulation are:

.1 the Baltic Sea area as defined in regulation 1.11.2 of Annex I of the present Convention;

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22 The cost of an approved method shall not exceed 375 Special Drawing Rights/metric tonne NO_X calculated in accordance with the cost-effectiveness (*Ce*) formula below:

$$Ce = \frac{Cost\ of\ approved\ method \cdot 10^6}{Power\ (kW) \cdot 0.768 \cdot 6{,}000\ (hours/year) \cdot 5\ (years) \cdot \Delta NO_x\ (g/kWh)}$$

Refer to *Definitions for the cost-effectiveness formula in regulation 13.7.5 of the revised MARPOL Annex VI* (MEPC.1/Circ.678).

23 Refer to the *2020 Guidelines for monitoring the worldwide average sulphur content of fuel oils supplied for use on board ships* (resolution MEPC.326(75)).

.2 the North Sea area as defined in regulation 1.14.6 of Annex V of the present Convention;

.3 the North American Emission Control Area, which means the area described by the coordinates provided in appendix VII to this Annex;

.4 the United States Caribbean Sea Emission Control Area, which means the area described by the coordinates provided in appendix VII to this Annex;

.5 the Mediterranean Sea Emission Control Area, which means the area described by the coordinates provided in appendix VII to this annex;

.6 the Canadian Arctic Emission Control area, which means the area described by the coordinates provided in appendix VII to this Annex;

.7 the Norwegian Sea as defined in regulation 13.9.4 of Annex II of the present Convention; and

.8 the North-East Atlantic Emission Control Area, which means the area described by the coordinates provided in appendix VII to this Annex.

4 While a ship is operating within an emission control area, the sulphur content of fuel oil used on board that ship shall not exceed 0.10% m/m.

5 The sulphur content of fuel oil referred to in paragraph 1 and paragraph 4 of this regulation shall be documented by its supplier as required by regulation 18 of this Annex.

6 Those ships using separate fuel oils to comply with paragraph 4 of this regulation and entering or leaving an emission control area set forth in paragraph 3 of this regulation shall carry a written procedure showing how the fuel oil changeover is to be done, allowing sufficient time for the fuel oil service system to be fully flushed of all fuel oils exceeding the applicable sulphur content specified in paragraph 4 of this regulation prior to entry into an emission control area. The volume of low sulphur fuel oils in each tank as well as the date, time and position of the ship when any fuel oil changeover operation is completed prior to the entry into an emission control area or commenced after exit from such an area shall be recorded in such logbook or electronic record book[24] as prescribed by the Administration.

7 During the first 12 months immediately following entry into force of an amendment designating a specific emission control area under paragraph 3 of this regulation, ships operating in that emission control area are exempt from the requirements in paragraphs 4 and 6 of this regulation and from the requirements of paragraph 5 of this regulation insofar as they relate to paragraph 4 of this regulation.

In-use and onboard fuel oil sampling and testing

8 If the competent authority of a Party requires the in-use or onboard sample to be analysed, it shall be done in accordance with the verification procedure set forth in appendix VI to this Annex to determine whether the fuel oil being used or carried for use on board meets the requirements in paragraph 1 or paragraph 4 of this regulation. The in-use sample shall be drawn taking into account the guidelines developed by the Organization.[25] The onboard sample shall be drawn taking into account the guidelines developed by the Organization.[26]

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24 Refer to *Guidelines for the use of electronic record books under MARPOL* (resolution MEPC.312(74)).

25 Refer to the *2019 Guidelines for on board sampling for the verification of the sulphur content of the fuel oil used on board ships* (MEPC.1/Circ.864/Rev.1).

26 Refer to the *2020 Guidelines for on board sampling of fuel oil intended to be used or carried for use on board a ship* (MEPC.1/Circ.889).

9 The sample shall be sealed by the representative of the competent authority with a unique means of identification installed in the presence of the ship's representative. The ship shall be given the option of retaining a duplicate sample.

In-use fuel oil sampling point

10 For each ship subject to regulations 5 and 6 of this Annex, sampling point(s) shall be fitted or designated for the purpose of taking representative samples of the fuel oil being used on board the ship taking into account the guidelines developed by the Organization.[27]

11 For a ship constructed before 1 April 2022, the sampling point(s) referred to in paragraph 10 shall be fitted or designated not later than the first renewal survey as identified in regulation 5.1.2 of this Annex on or after 1 April 2023.

12 The requirements of paragraphs 10 and 11 above are not applicable to a fuel oil service system used for a low-flashpoint fuel or a gas fuel.

13 The competent authority of a Party shall, as appropriate, utilize the sampling point(s) which is(are) fitted or designated for the purpose of taking representative sample(s) of the fuel oil being used on board in order to verify that the fuel oil complies with this regulation. Taking fuel oil samples by the competent authority of the Party shall be performed as expeditiously as possible without causing the ship to be unduly delayed.

Regulation 15
Volatile organic compounds

1 If the emissions of volatile organic compounds (VOCs) from a tanker are to be regulated in a port or ports or a terminal or terminals under the jurisdiction of a Party, they shall be regulated in accordance with the provisions of this regulation.

2 A Party regulating tankers for VOC emissions shall submit a notification to the Organization.[28] This notification shall include information on the size of tankers to be controlled, the cargoes requiring vapour emission control systems and the effective date of such control. The notification shall be submitted at least six months before the effective date.

3 A Party that designates ports or terminals at which VOC emissions from tankers are to be regulated shall ensure that vapour emission control systems, approved by that Party taking into account the safety standards for such systems developed by the Organization,[29] are provided in any designated port and terminal and are operated safely and in a manner so as to avoid undue delay to a ship.

4 The Organization shall circulate a list of the ports and terminals designated by Parties to other Parties and Member States of the Organization for their information.

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27 Refer to *Guidelines for the use of electronic record books under MARPOL* (resolution MEPC.312(74)).

28 Refer to *Notification to the Organization on ports or terminals where volatile organic compounds (VOCs) emissions are to be regulated* (MEPC.1/Circ.509).

29 Refer to *Standards for vapour emission control systems (MSC/Circ.585)*.

5 A tanker to which paragraph 1 of this regulation applies shall be provided with a vapour emission collection system approved by the Administration taking into account the safety standards for such systems developed by the Organization,[30] and shall use this system during the loading of relevant cargoes. A port or terminal that has installed vapour emission control systems in accordance with this regulation may accept tankers that are not fitted with vapour collection systems for a period of three years after the effective date identified in paragraph 2 of this regulation.

6 A tanker carrying crude oil shall have on board and implement a VOC management plan approved by the Administration. Such a plan shall be prepared taking into account the guidelines developed by the Organization.[31] The plan shall be specific to each ship and shall at least:

.1 provide written procedures for minimizing VOC emissions during the loading, sea passage and discharge of cargo;

.2 give consideration to the additional VOC generated by crude oil washing;

.3 identify a person responsible for implementing the plan; and

.4 for ships on international voyages, be written in the working language of the master and officers and, if the working language of the master and officers is not English, French or Spanish, include a translation into one of these languages.

7 This regulation shall also apply to gas carriers only if the types of loading and containment systems allow safe retention of non-methane VOCs on board or their safe return ashore.[32]

Regulation 16
Shipboard incineration

1 Except as provided in paragraph 4 of this regulation, shipboard incineration shall be allowed only in a shipboard incinerator.

2 Shipboard incineration of the following substances shall be prohibited:

.1 residues of cargoes subject to Annex I, II or III or related contaminated packing materials;

.2 polychlorinated biphenyls (PCBs);

.3 garbage, as defined by Annex V, containing more than traces of heavy metals;

30 Refer to *Standards for vapour emission control systems (MSC/Circ.585)*.

31 Refer to *Guidelines for the development of a VOC management plan* (resolution MEPC.185(59)). Refer also to *Technical information on systems and operation to assist development of VOC management plans* (MEPC.1/Circ.680), and *Technical information on a vapour pressure control system in order to facilitate the development and the update of VOC management plans* (MEPC.1/Circ.719).

32 Refer to the *International Code for the construction and equipment of ships carrying liquefied gases in bulk* (IGC Code) (resolution MSC.5(48), as amended).

.4 refined petroleum products containing halogen compounds;

.5 sewage sludge and sludge oil neither of which is generated on board the ship; and

.6 exhaust gas cleaning system residues.

3 Shipboard incineration of polyvinyl chlorides (PVCs) shall be prohibited, except in shipboard incinerators for which IMO Type Approval Certificates[33] have been issued.

4 Shipboard incineration of sewage sludge and sludge oil generated during normal operation of a ship may also take place in the main or auxiliary power plant or boilers, but in those cases, shall not take place inside ports, harbours or estuaries.

5 Nothing in this regulation either:

.1 affects the incineration at sea prohibitions of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, as amended, and the 1996 Protocol thereto, or other requirements thereof,

or

.2 precludes the development, installation and operation of alternative design shipboard thermal waste treatment devices that meet or exceed the requirements of this regulation.

6.1 Except as provided in paragraph 6.2 of this regulation, each incinerator on a ship constructed on or after 1 January 2000 or incinerator that is installed on board a ship on or after 1 January 2000 shall meet the requirements contained in appendix IV to this Annex. Each incinerator subject to this paragraph shall be approved by the Administration taking into account the standard specification for shipboard incinerators developed by the Organization;[34]

6.2 The Administration may allow exclusion from the application of paragraph 6.1 of this regulation to any incinerator installed on board a ship before 19 May 2005, provided that the ship is solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly.

7 Incinerators installed in accordance with the requirements of paragraph 6.1 of this regulation shall be provided with a manufacturer's operating manual, which is to be retained with the unit and which shall specify how to operate the incinerator within the limits described in paragraph 2 of appendix IV of this Annex.

8 Personnel responsible for the operation of an incinerator installed in accordance with the requirements of paragraph 6.1 of this regulation shall be trained to implement the guidance provided in the manufacturer's operating manual as required by paragraph 7 of this regulation.

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33 Type Approval Certificates issued in accordance with *Revised guidelines for the implementation of Annex V of MARPOL* (resolution MEPC.59(33), as amended by resolution MEPC.92(45)), or *Standard specification for shipboard incinerators* (resolution MEPC.76(40), as amended by resolution MEPC.93(45)), or the *2014 Standard specification for shipboard incinerators* (resolution MEPC.244(66)), as amended by resolution MEPC.368(79).

34 Refer to the *2014 Standard specification for shipboard incinerators* (resolution MEPC.244(66)), as amended by resolution MEPC.368(79), or *Standard specification for shipboard incinerators* (resolution MEPC.76(40), as amended by resolution MEPC.93(45)), and *Type approval of shipboard incinerators* (MEPC.1/Circ.793).

9 For incinerators installed in accordance with the requirements of paragraph 6.1 of this regulation the combustion chamber gas outlet temperature shall be monitored at all times the unit is in operation. Where that incinerator is of the continuous-feed type, waste shall not be fed into the unit when the combustion chamber gas outlet temperature is below 850°C. Where that incinerator is of the batch-loaded type, the unit shall be designed so that the combustion chamber gas outlet temperature shall reach 600°C within five minutes after start-up and will thereafter stabilize at a temperature not less than 850°C.

Regulation 17
Reception facilities

1 Each Party undertakes to ensure the provision of facilities adequate to meet the:

.1 needs of ships using its repair ports for the reception of ozone-depleting substances and equipment containing such substances when removed from ships;

.2 needs of ships using its ports, terminals or repair ports for the reception of exhaust gas cleaning residues from an exhaust gas cleaning system;

without causing undue delay to ships, and

.3 needs in ship-breaking facilities for the reception of ozone-depleting substances and equipment containing such substances when removed from ships.

2 The following States may satisfy the requirements in paragraph 1 of this regulation through regional arrangements when, because of those States' unique circumstances, such arrangements are the only practical means to satisfy these requirements:

.1 small island developing States; and

.2 States the coastline of which borders on Arctic waters, provided that regional arrangements shall cover only ports within Arctic waters of those States.

3 Parties participating in a regional arrangement shall develop a Regional Reception Facilities Plan, taking into account the guidelines developed by the Organization.[35] The Government of each Party participating in the arrangement shall consult with the Organization, for circulation to the Parties of the present Convention, on:

.1 how the Regional Reception Facilities Plan takes into account the guidelines developed by the Organization;[36]

.2 particulars of the identified Regional Ships Waste Reception Centres taking into account the guidelines developed by the Organization;[37] and

.3 particulars of those ports with only limited facilities.

[35] Refer to the 2012 *Guidelines for the development of a Regional Reception Facilities Plan* (resolution MEPC.221(63)), as amended by resolution MEPC.363(79).

[36] Refer to the 2012 *Guidelines for the development of a Regional Reception Facilities Plan* (resolution MEPC.221(63)), as amended by resolution MEPC.363(79).

[37] Refer to the 2012 *Guidelines for the development of a Regional Reception Facilities Plan* (resolution MEPC.221(63)), as amended by resolution MEPC.363(79).

4 If a particular port or terminal of a Party is, taking into account the guidelines to be developed by the Organization, remotely located from, or lacking in, the industrial infrastructure necessary to manage and process those substances referred to in paragraph 1 of this regulation and therefore cannot accept such substances, then the Party shall inform the Organization of any such port or terminal so that this information may be circulated to all Parties and Member States of the Organization for their information and any appropriate action. Each Party that has provided the Organization with such information shall also notify the Organization of its ports and terminals where reception facilities are available to manage and process such substances.

5 Each Party shall notify the Organization for circulation to the Members of the Organization of all cases where the facilities provided under this regulation are unavailable or alleged to be inadequate.

Regulation 18
Fuel oil availability and quality

Fuel oil availability

1 Each Party shall take all reasonable steps to promote the availability of fuel oils that comply with this Annex and inform the Organization of the availability of compliant fuel oils in its ports and terminals.

2.1 If a ship is found by a Party not to be in compliance with the standards for compliant fuel oils set forth in this Annex, the competent authority of the Party is entitled to require the ship to:

.1 present a record of the actions taken to attempt to achieve compliance; and

.2 provide evidence that it attempted to purchase compliant fuel oil in accordance with its voyage plan and, if it was not made available where planned, that attempts were made to locate alternative sources for such fuel oil and that despite best efforts to obtain compliant fuel oil, no such fuel oil was made available for purchase.

2.2 The ship should not be required to deviate from its intended voyage or to delay unduly the voyage in order to achieve compliance.

2.3 If a ship provides the information set forth in paragraph 2.1 of this regulation, a Party shall take into account all relevant circumstances and the evidence presented to determine the appropriate action to take, including not taking control measures.

2.4 A ship shall notify its Administration and the competent authority of the relevant port of destination when it cannot purchase compliant fuel oil.

2.5 A Party shall notify the Organization when a ship has presented evidence of the non-availability of compliant fuel oil.

Fuel oil quality

3 Fuel oil delivered to and used on board a ship to which this Annex applies shall meet the following requirements:

.1 except as provided in paragraph 3.2 of this regulation:

.1 the fuel oil shall be blends of hydrocarbons derived from petroleum refining. This shall not preclude the incorporation of small amounts of additives intended to improve some aspects of performance;

.2 the fuel oil shall be free from inorganic acid; and

.3 the fuel oil shall not include any added substance or chemical waste that:

.1 jeopardizes the safety of ships or adversely affects the performance of the machinery, or

.2 is harmful to personnel, or

.3 contributes overall to additional air pollution.

.2 fuel oil derived by methods other than petroleum refining shall not:

.1 exceed the applicable sulphur content set forth in regulation 14 of this Annex;

.2 cause an engine to exceed the applicable NO_X emission limit set forth in paragraphs 3, 4, 5.1.1 and 7.4 of regulation 13;

.3 contain inorganic acid; or

.4.1 jeopardize the safety of ships or adversely affect the performance of the machinery, or

.4.2 be harmful to personnel, or

.4.3 contribute overall to additional air pollution.

4. This regulation does not apply to coal in its solid form or nuclear fuels. Paragraphs 5.1, 8.1 and 8.2 of this regulation do not apply to a low-flashpoint fuel or a gas fuel.

5.1 For each ship subject to regulations 5 and 6 of this Annex, details of fuel oil delivered to and used on board that ship shall be recorded by means of a bunker delivery note that shall contain at least the information specified in appendix V to this Annex.

5.2 For each ship subject to regulations 5 and 6 of this Annex, details of low-flashpoint fuel or gas fuel delivered to and used on board that ship shall be recorded by means of a bunker delivery note that shall include at least the information specified in items 1 to 6 of appendix V to this Annex, the density as determined by a test method appropriate to the fuel type together with the associated temperature and a declaration signed and certified by the fuel oil supplier's representative that the fuel oil is in conformity with paragraph 3 of this regulation. In addition the sulphur content of a low-flashpoint fuel or a gas fuel delivered to a

ship specifically for use on board that ship shall be documented on the bunker delivery note by the supplier in terms of either the actual value as determined by a test method appropriate to the fuel type or, with the agreement of the appropriate authority at the port of supply, a statement that the sulphur content, when tested by such a method, is less than 0.001% m/m.

6 The bunker delivery note shall be kept on board the ship in such a place as to be readily available for inspection at all reasonable times. It shall be retained for a period of three years after the fuel oil has been delivered on board.

7.1 The competent authority of a Party may inspect the bunker delivery notes on board any ship to which this Annex applies while the ship is in its port or offshore terminal, may make a copy of each delivery note, and may require the master or person in charge of the ship to certify that each copy is a true copy of such bunker delivery note. The competent authority may also verify the contents of each note through consultations with the port where the note was issued.

7.2 The inspection of the bunker delivery notes and the taking of certified copies by the competent authority under paragraph 7.1 of this regulation shall be performed as expeditiously as possible without causing the ship to be unduly delayed.

8.1 The bunker delivery note shall be accompanied by a representative sample of the fuel oil delivered taking into account the guidelines developed by the Organization.[38] The sample is to be sealed and signed by the supplier's representative and the master or officer in charge of the bunker operation on completion of bunkering operations and retained under the ship's control until the fuel oil is substantially consumed, but in any case for a period of not less than 12 months from the time of delivery.

8.2 If a Party requires the representative sample to be analysed, it shall be done in accordance with the verification procedure set forth in appendix VI to this Annex to determine whether the fuel oil meets the requirements of this Annex.

9 Parties undertake to ensure that appropriate authorities designated by them:

.1 maintain a register of local suppliers of fuel oil;

.2 require local suppliers to provide the bunker delivery note and, if applicable, the MARPOL delivered sample as required by this regulation, certified by the fuel oil supplier that the fuel oil meets the requirements of regulations 14 and 18 of this Annex;

.3 require local suppliers to retain a copy of the bunker delivery note for at least three years for inspection and verification by the port State as necessary;

.4 take action as appropriate against fuel oil suppliers that have been found to deliver fuel oil that does not comply with that stated on the bunker delivery note;

.5 inform the Administration of any ship receiving fuel oil found to be non-compliant with the requirements of regulation 14 or 18 of this Annex; and

[38] Refer to the *Guidelines for the sampling of fuel oil for determination of compliance with MARPOL Annex VI and SOLAS chapter II-2* (circular MSC-MEPC.2/Circ.18).

.6 inform the Organization for circulation to Parties and Member States of the Organization of all cases where fuel oil suppliers have failed to meet the requirements specified in regulations 14 or 18 of this Annex.

10 In connection with port State inspections carried out by Parties, the Parties further undertake to:

.1 inform the Party or non-Party under whose jurisdiction a bunker delivery note was issued of cases of delivery of non-compliant fuel oil, giving all relevant information; and

.2 ensure that remedial action as appropriate is taken to bring non-compliant fuel oil discovered into compliance.

11 For every ship of 400 gross tonnage and above on scheduled services with frequent and regular port calls, an Administration may decide after application and consultation with affected States that compliance with paragraph 6 of this regulation may be documented in an alternative manner that gives similar certainty of compliance with regulations 14 and 18 of this Annex.

Chapter 4 – Regulations on the carbon intensity of international shipping

Regulation 19
Application

1 This chapter shall apply to all ships of 400 gross tonnage and above.

2 The provisions of this chapter shall not apply to:

.1 ships solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly. However, each Party should ensure, by the adoption of appropriate measures, that such ships are constructed and act in a manner consistent with the requirements of chapter 4 of this Annex, so far as is reasonable and practicable.

.2 ships not propelled by mechanical means, and platforms including FPSOs and FSUs and drilling rigs, regardless of their propulsion.

3 Regulations 22, 23, 24 and 25 of this Annex shall not apply to ships which have non-conventional propulsion, except that regulations 22 and 24 shall apply to cruise passenger ships having non-conventional propulsion and LNG carriers having conventional or non-conventional propulsion, delivered on or after 1 September 2019, as defined in regulation 2.2.1, and regulations 23 and 25 shall apply to cruise passenger ships having non-conventional propulsion and LNG carriers having conventional or non-conventional propulsion. Regulations 22, 23, 24, 25 and 28 shall not apply to category A ships as defined in the Polar Code.

4 Notwithstanding the provisions of paragraph 1 of this regulation, the Administration may waive the requirement for a ship of 400 gross tonnage and above to comply with regulations 22 and 24 of this Annex.

5 The provision of paragraph 4 of this regulation shall not apply to ships of 400 gross tonnage and above:

.1 for which the building contract is placed on or after 1 January 2017; or

.2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 July 2017; or

.3 the delivery of which is on or after 1 July 2019; or

.4 in cases of a major conversion of a new or existing ship, as defined in regulation 2.2.17 of this Annex, on or after 1 January 2017, and in which regulations 5.4.2 and 5.4.3 of this Annex apply.

6 The Administration of a Party to the present Convention which allows the application of paragraph 4, or suspends, withdraws or declines the application of that paragraph, to a ship entitled to fly its flag shall forthwith communicate to the Organization for circulation to the Parties to the present Protocol particulars thereof, for their information.

Regulation 20
Goal

1 The goal of this chapter is to reduce the carbon intensity of international shipping, working towards the levels of ambition set out in the *IMO Strategy on reduction of GHG emissions from ships.*

Regulation 21
Functional requirements

1 In order to achieve the goal set out in regulation 20 of this Annex, a ship to which this chapter applies shall comply, as applicable, with the following functional requirements to reduce its carbon intensity:

.1 the technical carbon intensity requirements in accordance with regulations 22, 23, 24 and 25 of this Annex; and

.2 the operational carbon intensity requirements in accordance with regulations 26, 27 and 28 of this Annex.

Regulation 22
Attained Energy Efficiency Design Index (attained EEDI)

1 The attained EEDI shall be calculated for:

.1 each new ship;

.2 each new ship which has undergone a major conversion; and

.3 each new or existing ship which has undergone a major conversion that is so extensive that the ship is regarded by the Administration as a newly constructed ship,

which falls into one or more of the categories in regulations 2.2.5, 2.2.7, 2.2.9, 2.2.11, 2.2.14 to 2.2.16, 2.2.20, 2.2.22, and 2.2.26 to 2.2.29 of this Annex. The attained EEDI shall be specific to each ship and shall indicate the estimated performance of the ship

in terms of energy efficiency, and be accompanied by the EEDI technical file that contains the information necessary for the calculation of the attained EEDI and that shows the process of calculation. The attained EEDI shall be verified, based on the EEDI technical file, either by the Administration or by any organization duly authorized by it.[39]

2 The attained EEDI shall be calculated taking into account the guidelines developed by the Organization.[40]

3 For each ship subject to regulation 24 of this Annex, the Administration or any organization duly authorized by it[41] shall report to the Organization the required and attained EEDI values and relevant information, taking into account the guidelines developed by the Organization,[42] via electronic communication:

.1 within seven months of completing the survey required under regulation 5.4 of this Annex; or

.2 within seven months following 1 April 2022 for a ship delivered prior to 1 April 2022.

Regulation 23
Attained Energy Efficiency Existing Ship Index (attained EEXI)

1 The attained EEXI shall be calculated for:

.1 each ship; and

.2 each ship which has undergone a major conversion,

which falls into one or more of the categories in regulations 2.2.5, 2.2.7, 2.2.9, 2.2.11, 2.2.14 to 2.2.16, 2.2.22, and 2.2.26 to 2.2.29 of this Annex. The attained EEXI shall be specific to each ship and shall indicate the estimated performance of the ship in terms of energy efficiency, and be accompanied by the EEXI technical file which contains the information necessary for the calculation of the attained EEXI and which shows the process of the calculation. The attained EEXI shall be verified, based on the EEXI technical file, either by the Administration or by any organization duly authorized by it.[43]

2 The attained EEXI shall be calculated taking into account the guidelines developed by the Organization.[44]

39 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

40 Refer to the *2022 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships (resolution MEPC.364(79))*.

41 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

42 Refer to the *2022 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships (resolution MEPC.364(79))*.

43 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

44 Refer to the *2022 Guidelines on the method of calculation of the attained Energy Efficiency Existing Ship Index (EEXI)* (resolution MEPC.350(78)).

3 Notwithstanding paragraph 1 of this regulation, for each ship to which regulation 22 of this Annex applies, the attained EEDI verified by the Administration or by any organization duly authorized by it in accordance with regulation 22.1 of this Annex may be taken as the attained EEXI if the value of the attained EEDI is equal to or less than that of the required EEXI as required by regulation 25 of this Annex. In this case, the attained EEXI shall be verified based on the EEDI technical file.

Regulation 24
Required EEDI

1 For each:

.1 new ship,

.2 new ship which has undergone a major conversion, and

.3 new or existing ship which has undergone a major conversion that is so extensive that the ship is regarded by the Administration as a newly constructed ship

which falls into one of the categories in regulations 2.2.5, 2.2.7, 2.2.9, 2.2.11, 2.2.14 to 2.2.16, 2.2.22, and 2.2.26 to 2.2.29 and to which this chapter is applicable, the attained EEDI shall be as follows:

$$\text{Attained EEDI} \leq \text{Required EEDI} = (1 - \frac{X}{100}) \cdot \text{Reference line value}$$

where X is the reduction factor specified in table 1 for the required EEDI compared to the EEDI reference line.

2 For each new and existing ship that has undergone a major conversion which is so extensive that the ship is regarded by the Administration as a newly constructed ship, the attained EEDI shall be calculated and meet the requirement of paragraph 1 of this regulation with the reduction factor applicable corresponding to the ship type and size of the converted ship at the date of the contract of the conversion, or in the absence of a contract, the commencement date of the conversion.

Table 1 - *Reduction factors (in percentage) for the EEDI relative to the EEDI reference line*

Ship Type	Size	Phase 0 1 Jan 2013 – 31 Dec 2014	Phase 1 1 Jan 2015 – 31 Dec 2019	Phase 2 1 Jan 2020 – 31 Mar 2022	Phase 2 1 Jan 2020 – 31 Dec 2024	Phase 3 1 Apr 2022 and onwards	Phase 3 1 Jan 2025 and onwards
Bulk carrier	20,000 DWT and above	0	10		20		30
	10,000 and above but less than 20,000 DWT	n/a	0-10*		0-20*		0-30*
Gas carrier	15,000 DWT and above	0	10	20		30	
	10,000 and above but less than 15,000 DWT	0	10		20		30
	2,000 and above but less than 10,000 DWT	n/a	0-10*		0-20*		0-30*
Tanker	20,000 DWT and above	0	10		20		30
	4,000 and above but less than 20,000 DWT	n/a	0-10*		0-20*		0-30*
Containership	200,000 DWT and above	0	10	20		50	
	120,000 and above but less than 200,000 DWT	0	10	20		45	
	80,000 and above but less than 120,000 DWT	0	10	20		40	
	40,000 and above but less than 80,000 DWT	0	10	20		35	
	15,000 and above but less than 40,000 DWT	0	10	20		30	
	10,000 and above but less than 15,000 DWT	n/a	0-10*	0-20*		15-30*	

Ship Type	Size	Phase 0 1 Jan 2013 – 31 Dec 2014	Phase 1 1 Jan 2015 – 31 Dec 2019	Phase 2 1 Jan 2020 – 31 Mar 2022	Phase 2 1 Jan 2020 – 31 Dec 2024	Phase 3 1 Apr 2022 and onwards	Phase 3 1 Jan 2025 and onwards
General Cargo ships	15,000 DWT and above	0	10	15		30	
	3,000 and above but less than 15,000 DWT	n/a	0-10*	0-15*		0-30*	
Refrigerated cargo carrier	5,000 DWT and above	0	10		15		30
	3,000 and above but less than 5,000 DWT	n/a	0-10*		0-15*		0-30*
Combination carrier	20,000 DWT and above	0	10		20		30
	4,000 and above but less than 20,000 DWT	n/a	0-10*		0-20*		0-30*
LNG carrier***	10,000 DWT and above	n/a	10**	20		30	
Ro-ro cargo ship (vehicle carrier)***	10,000 DWT and above	n/a	5**		15		30
Ro-ro cargo ship***	2,000 DWT and above	n/a	5**		20		30
	1,000 and above but less than 2,000 DWT	n/a	0-5*,**		0-20*		0-30*
Ro-ro passenger ship***	1,000 DWT and above	n/a	5**		20		30
	250 and above but less than 1,000 DWT	n/a	0-5*,**		0-20*		0-30*
Cruise passenger ship*** having non-conventional propulsion	85,000 GT and above	n/a	5**	20		30	
	25,000 and above but less than 85,000 GT	n/a	0-5*,**	0-20*		0-30*	

* Reduction factor to be linearly interpolated between the two values dependent upon ship size. The lower value of the reduction factor is to be applied to the smaller ship size.

** Phase 1 commences for those ships on 1 September 2015.

*** Reduction factor applies to those ships delivered on or after 1 September 2019, as defined in paragraph 2.1 of regulation 2.

Note: n/a means that no required EEDI applies.

3 The reference line values shall be calculated as follows:

Reference line value = $a \cdot b^{-c}$

where *a*, *b* and *c* are the parameters given in table 2.

Table 2 – *Parameters for the determination of reference values for the different ship types*

Ship type defined in regulation 2	**a**	**b**	**c**
2.2.5 Bulk carrier	961.79	DWT of the ship where DWT≤279,000 279,000 where DWT > 279,000	0.477
2.2.7 Combination carrier	1,219.00	DWT of the ship	0.488
2.2.9 Containership	174.22	DWT of the ship	0.201
2.2.11 Cruise passenger ship having non-conventional propulsion	170.84	GT of the ship	0.214
2.2.14 Gas carrier	1,120.00	DWT of the ship	0.456
2.2.15 General cargo ship	107.48	DWT of the ship	0.216
2.2.16 LNG carrier	2,253.7	DWT of the ship	0.474
2.2.22 Refrigerated cargo carrier	227.01	DWT of the ship	0.244
2.2.26 Ro-ro cargo ship	1405.15	DWT of the ship	0.498
	1686.17*	DWT of the ship where DWT≤17,000* 17,000 where DWT > 17,000*	
2.2.27 Ro-ro cargo ship (vehicle carrier)	$(DWT/GT)^{-0.7} \cdot 780.36$ where DWT/GT < 0.3 1,812.63 where DWT/GT ≥ 0.3	DWT of the ship	0.471
2.2.28 Ro-ro passenger ship	752.16	DWT of the ship	0.381
	902.59*	DWT of the ship where DWT≤10,000* 10,000 where DWT > 10,000*	
2.2.29 Tanker	1,218.80	DWT of the ship	0.488

* to be used from phase 2 and thereafter.

4 If the design of a ship allows it to fall into more than one of the ship type definitions specified in table 2, the required EEDI for the ship shall be the most stringent (the lowest) required EEDI.

5 For each ship to which this regulation applies, the installed propulsion power shall not be less than the propulsion power needed to maintain the manoeuvrability of the ship under adverse conditions as defined in the guidelines to be developed by the Organization.[45]

6 At the beginning of phase 1 and at the midpoint of phase 2, the Organization shall review the status of technological developments and, if proven necessary, amend the time periods, the EEDI reference line parameters for relevant ship types and reduction rates set out in this regulation.

Regulation 25
Required EEXI

1 For:

.1 each ship; and

.2 each ship which has undergone a major conversion

which falls into one of the categories in regulations 2.2.5, 2.2.7, 2.2.9, 2.2.11, 2.2.14 to 2.2.16, 2.2.22, and 2.2.26 to 2.2.29 and to which this chapter is applicable, the attained EEXI shall be as follows:

$$\text{Attained EEXI} \leq \text{Required EEXI} = \left(1 - \frac{\text{Y}}{100}\right) \bullet \text{EEDI reference line value}$$

where Y is the reduction factor specified in Table 3 for the required EEXI compared to the EEDI reference line.

Table 3 - *Reduction factors (in percentage) for the EEXI relative to the EEDI reference line*

Ship type	Size	Reduction factor
Bulk carrier	200,000 DWT and above	15
	20,000 and above but less than 200,000 DWT	20
	10,000 and above but less than 20,000 DWT	0-20*
Gas carrier	15,000 DWT and above	30
	10,000 and above but less than 15,000 DWT	20
	2,000 and above but less than 10,000 DWT	0-20*
Tanker	200,000 DWT and above	15
	20,000 and above but less than 200,000 DWT	20
	4,000 and above but less than 20,000 DWT	0-20*

[45] Refer to *Guidelines for determining minimum propulsion power to maintain the manoeuvrability of ships in adverse conditions* (MEPC.1/Circ.850/Rev.3).

Ship type	Size	Reduction factor
Containership	200,000 DWT and above	50
	120,000 and above but less than 200,000 DWT	45
	80,000 and above but less than 120,000 DWT	35
	40,000 and above but less than 80,000 DWT	30
	15,000 and above but less than 40,000 DWT	20
	10,000 and above but less than 15,000 DWT	0-20*
General cargo ship	15,000 DWT and above	30
	3,000 and above but less than 15,000 DWT	0-30*
Refrigerated cargo carrier	5,000 DWT and above	15
	3,000 and above but less than 5,000 DWT	0-15*
Combination carrier	20,000 DWT and above	20
	4,000 and above but less than 20,000 DWT	0-20*
LNG carrier	10,000 DWT and above	30
Ro-ro cargo ship (vehicle carrier)	10,000 DWT and above	15
Ro-ro cargo ship	2,000 DWT and above	5
	1,000 and above but less than 2,000 DWT	0-5*
Ro-ro passenger ship	1,000 DWT and above	5
	250 and above but less than 1,000 DWT	0-5*
Cruise passenger ship having non-conventional propulsion	85,000 GT and above	30
	25,000 and above but less than 85,000 GT	0-30*

* Reduction factor to be linearly interpolated between the two values dependent upon ship size. The lower value of the reduction factor is to be applied to the smaller ship size.

2 The EEDI reference line values shall be calculated in accordance with regulations 24.3 and 24.4 of this Annex. For ro-ro cargo ships and ro-ro passenger ships, the reference line value to be used from phase 2 and thereafter under regulation 24.3 of this Annex shall be referred to.

3 This regulation shall be kept under review in light of its implementation, taking into account the IMO Strategy on Reduction of GHG Emissions from Ships.

Regulation 26
Ship Energy Efficiency Management Plan (SEEMP)

1 Each ship shall keep on board a ship specific Ship Energy Efficiency Management Plan (SEEMP). This may form part of the ship's Safety Management System (SMS). The SEEMP shall be developed and reviewed, taking into account the guidelines adopted by the Organization.[46]

2 In the case of a ship of 5,000 gross tonnage and above, the SEEMP shall include a description of the methodology that will be used to collect the data required by regulation 27.1 of this Annex and the processes that will be used to report the data to the ship's Administration.

3 In the case of a ship of 5,000 gross tonnage and above, which falls into one or more of the categories in regulations 2.2.5, 2.2.7, 2.2.9, 2.2.11, 2.2.14 to 2.2.16, 2.2.22, and 2.2.26 to 2.2.29 of this Annex:

.1 On or before 1 January 2023 the SEEMP shall include:

.1 a description of the methodology that will be used to calculate the ship's attained annual operational CII required by regulation 28 of this Annex and the processes that will be used to report this value to the ship's Administration;

.2 the required annual operational CII, as specified in regulation 28 of this Annex, for the next three years;

.3 an implementation plan documenting how the required annual operational CII will be achieved during the next three years; and

.4 a procedure for self-evaluation and improvement.

.2 For a ship rated as D for three consecutive years or rated as E in accordance with regulation 28 of this Annex, the SEEMP shall be reviewed in accordance with regulation 28.8 of this Annex to include a plan of corrective actions to achieve the required annual operational CII.

4 In the case of a ship to which chapter 5 applies:

.1 On or before 1 January 2028, the SEEMP shall include:

.1 a description of the methodology that will be used to collect the data required by regulation 33 of this Annex to calculate the ship’s attained annual GFI, target annual GFI and GFI compliance balance; and

.2 the processes that will be used to report the data required by regulations 33 and 37 of this Annex to the ship's Administration.

[46] Refer to the *2024 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)* (resolution MEPC.395(82), as amended by resolution MEPC.401(83)).

5 For ships to which paragraphs 3 and 4 of this regulation apply, the SEEMP shall be subject to verification and company audits taking into account guidelines to be developed by the Organization.[47]

Regulation 27
Collection and reporting of ship fuel oil consumption data

1 From calendar year 2019, each ship of 5,000 gross tonnage and above shall collect the data specified in appendix IX to this Annex, for that and each subsequent calendar year or portion thereof, as appropriate according to the methodology included in the SEEMP.

2 Except as provided for in paragraphs 4, 5 and 6 of this regulation, at the end of each calendar year, the ship shall aggregate the data collected in that calendar year or portion thereof, as appropriate.

3 Except as provided for in paragraphs 4, 5 and 6 of this regulation, within three months after the end of each calendar year, the ship shall report to its Administration or any organization duly authorized by it,[48] the aggregated value for each datum specified in appendix IX to this Annex, via electronic communication and using a standardized format to be developed by the Organization.[49]

4 In the event of the transfer of a ship from one Administration to another, the ship shall on the day of completion of the transfer or as close as practical thereto report to the losing Administration or any organization duly authorized by it[50], the aggregated data for the period of the calendar year corresponding to that Administration, as specified in appendix IX to this Annex and, upon prior request of that Administration, the disaggregated data.

5 In the event of a change from one company to another, the ship shall on the day of completion of the change or as close as practical thereto report to its Administration or any organization duly authorized by it,[51] the aggregated data for the portion of the calendar year corresponding to the company, as specified in appendix IX to this Annex and, upon request of its Administration, the disaggregated data.

6 In the event of change from one Administration to another and from one company to another concurrently, paragraph 4 of this regulation shall apply.

7 The data shall be verified according to procedures established by the Administration, taking into account the guidelines developed by the Organization.[52]

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47 Refer to *Guidelines for the verification and company audits by the Administration of part III of the Ship Energy Efficiency Management Plan (SEEMP)* (resolution MEPC.347(78)).

48 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

49 Refer to the *2024 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)* (resolution MEPC.395(82), as amended by resolution MEPC.401(83)).

50 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

51 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

52 Refer to the *2022 Guidelines for Administration verification of ship fuel oil consumption data and operational carbon intensity* (resolution MEPC.348(78)), as amended by resolution MEPC.389(81).

8 Except as provided for in paragraphs 4, 5 and 6 of this regulation, the disaggregated data that underlies the reported data noted in appendix IX to this Annex for the previous calendar year shall be readily accessible for a period of not less than 12 months from the end of that calendar year and be made available to the Administration upon request.

9 The Administration shall ensure that the reported data noted in appendix IX to this Annex by its registered ships of 5,000 gross tonnage and above are transferred to the IMO Ship Fuel Oil Consumption Database via electronic communication and using a standardized format to be developed by the Organization[53] not later than one month after issuing the Statements of Compliance of these ships.

10 On the basis of the reported data submitted to the IMO Ship Fuel Oil Consumption Database, the Secretary-General of the Organization shall produce an annual report to the Committee summarizing the data collected, the status of missing data, and such other relevant information as may be requested by the Committee.

11 The Secretary-General of the Organization shall grant the Administration of a ship or any organization duly authorized by it[54] access to all the reported data for all the preceding calendar years in the IMO Ship Fuel Oil Consumption Database for that ship.

12 Parties shall have access to a non-anonymized database containing data for all ships to which this regulation applies strictly for their analysis and consideration.

13 The Secretary-General of the Organization shall maintain an anonymized database such that identification of a specific ship will not be possible, and facilitate access to public user accounts.

14 The IMO Ship Fuel Oil Consumption Database shall be undertaken and managed by the Secretary-General of the Organization, pursuant to guidelines to be developed by the Organization.[55]

15 On an ad hoc basis, the Secretary-General of the Organization may share data with analytical consultancies and research entities, under strict confidentiality rules.

16 The Secretary-General of the Organization, on the request of a company, shall grant access to the fuel oil consumption reports of the company's owned ship(s) in a non-anonymized form to the general public.

Regulation 28
Operational carbon intensity

Attained annual operational carbon intensity indicator (attained annual operational CII)

1 After the end of calendar year 2023 and after the end of each following calendar year, each ship of 5,000 gross tonnage and above which falls into one or more of the categories in regulations 2.2.5, 2.2.7, 2.2.9, 2.2.11, 2.2.14 to 2.2.16, 2.2.22, and 2.2.26 to 2.2.29 of this Annex shall calculate the attained annual operational CII over a 12-month period

53 Refer to the *2024 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)* (resolution MEPC.395(82), as amended by resolution MEPC.401(83)).

54 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

55 Refer to the *2022 Guidelines for the development and management of the IMO Ship Fuel Oil Consumption Database* (resolution MEPC.349(78)).

from 1 January to 31 December for the preceding calendar year, using the data collected in accordance with regulation 27 of this Annex, taking into account the guidelines to be developed by the Organization.[56]

2 Within three months after the end of each calendar year, the ship shall report to its Administration, or any organization duly authorized by it,[57] the attained annual operational CII via electronic communication and using a standardized format to be developed by the Organization.[58]

3 Notwithstanding 1 and 2 of this regulation, in the event of any transfer of a ship addressed in regulations 27.4, 27.5 or 27.6 completed after 1 January 2023, a ship shall, after the end of the calendar year in which the transfer takes place, calculate and report the attained annual operational CII for the full 12-month period from 1 January to 31 December in the calendar year during which the transfer took place, in accordance with regulations 28.1 and 28.2, for verification in accordance with regulation 6.6 of this Annex, taking into account guidelines to be developed by the Organization.[59] Nothing in this regulation relieves any ship of its reporting obligations under regulation 27 or this regulation of this Annex.

Required annual operational carbon intensity indicator (required annual operational CII)

4 For each ship of 5,000 gross tonnage and above which falls into one or more of the categories in regulations 2.2.5, 2.2.7, 2.2.9, 2.2.11, 2.2.14 to 2.2.16, 2.2.22, and 2.2.26 to 2.2.29 of this Annex, the required annual operational CII shall be determined as follows:

$$\text{Required annual operational CII} = \left(1 - \frac{Z}{100}\right) \bullet \text{CII}_R$$

where,

Z is the annual reduction factor to ensure continuous improvement of the ship's operational carbon intensity within a specific rating level; and

CII_R is the reference value.

5 The annual reduction factor Z[60] and the reference value CII_R shall be the values defined taking into account the guidelines to be developed by the Organization.[61]

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56 Refer to the *2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1)* (resolution MEPC.352(78)), and the *2022 Interim guidelines on correction factors and voyage adjustments for CII calculations (CII guidelines, G5)* (resolution MEPC.355(78)).

57 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

58 Refer to the *2022 Guidelines for Administration verification of ship fuel oil consumption data and operational carbon intensity* (resolution MEPC.348(78)), as amended by resolution MEPC.389(81).

59 Refer to the *2022 Guidelines for Administration verification of ship fuel oil consumption data and operational carbon intensity* (resolution MEPC.348(78)), as amended by resolution MEPC.389(81).

60 The annual reduction factor is specific to each category of ship. This factor is defined to increase progressively to meet the objectives of the *Initial IMO Strategy on reduction of GHG emissions from ships* (resolution MEPC.304(72)).

61 Refer to the *2021 Guidelines on the operational carbon intensity reduction factors relative to reference lines (CII reduction factor guidelines, G3)* (resolution MEPC.338(76), as amended by resolution MEPC.400(83)) and the *2022 Guidelines on the reference lines for use with operational carbon intensity indicators (CII reference lines guidelines, G2)* (resolution MEPC.353(78)).

Operational carbon intensity rating

6 The *attained annual operational CII* shall be documented and verified against the required annual operational CII to determine operational carbon intensity rating A, B, C, D or E, indicating a major superior, minor superior, moderate, minor inferior, or inferior performance level, either by the Administration or by any organization duly authorized by it,[62] taking into account the guidelines developed by the Organization.[63] The middle point of rating level C shall be the value equivalent to the required annual operational CII set out in paragraph 4 of this regulation.

Corrective actions and incentives

7 A ship rated as D for three consecutive years or rated as E shall develop a plan of corrective actions to achieve the required annual operational CII.

8 The SEEMP shall be reviewed to include the plan of corrective actions accordingly, taking into account the guidelines to be developed by the Organization.[64] The revised SEEMP shall be submitted to the Administration or any organization duly authorized by it[65] for verification, preferably together with, but in no case later than 1 month after reporting the attained annual operational CII in accordance with paragraph 2 of this regulation.

9 A ship rated as D for three consecutive years or rated as E shall duly undertake the planned corrective actions in accordance with the revised SEEMP.

10 Administrations, port authorities and other stakeholders as appropriate, are encouraged to provide incentives to ships rated as A or B.

Review

11 This regulation shall be kept under review in light of its implementation, taking into account the IMO Strategy on Reduction of GHG Emissions from Ships.

Regulation 29
Promotion of technical cooperation and transfer of technology relating to the improvement of energy efficiency of ships[66]

1 Administrations shall, in cooperation with the Organization and other international bodies, promote and provide support, as appropriate, directly or through the Organization to States that request technical assistance, especially developing States.

2 The Administration of a Party shall cooperate actively with other Parties, subject to its national laws, regulations and policies, to promote the development and transfer of technology and exchange of information to States which request technical assistance, particularly developing States, in respect of the implementation of measures to fulfil the requirements of chapter 4 of this Annex, in particular regulations 19.4 to 19.6.

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62 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

63 Refer to the *2022 Guidelines on the operational carbon intensity rating of ships (CII rating guidelines, G4)* (resolution MEPC.354(78)).

64 Refer to the *2024 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)* (resolution MEPC.395(82), as amended by resolution MEPC.401(83)).

65 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

66 Refer to *Promotion of technical cooperation and transfer of technology relating to the improvement of energy efficiency of ships* (resolution MEPC.229(65)), and the *Model agreement between governments on technological cooperation for the implementation of the regulations in chapter 4 of MARPOL Annex VI* (MEPC.1/Circ.861).

Chapter 5 – Regulations on the IMO Net-Zero Framework

Regulation 30
Application

1 This chapter shall apply to all ships of 5,000 gross tonnage and above.

2 Notwithstanding paragraph 1 of this regulation, the provisions of this chapter shall not apply to:

.1 ships solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly. However, each Party should ensure, by the adoption of appropriate measures, that such ships act in a manner consistent with the requirements of chapter 5 of this Annex, so far as is reasonable and practicable;

.2 ships not propelled by mechanical means, and platforms including FPSOs and FSUs and drilling rigs, regardless of their propulsion; and

.3 semi-submersible vessels until further review of the application of this chapter.

Regulation 31
Goal

1 The goal of this chapter is to reduce greenhouse gas (GHG) emissions from international shipping as soon as possible, delivering on the reduction targets set out in the 2023 IMO Strategy on Reduction of GHG Emissions from Ships,[67] effectively promoting the energy transition of shipping and providing the world fleet with a needed incentive while contributing to a level playing field and a just and equitable transition.

Regulation 32
Functional requirements

1 In order to achieve the goal set out in regulation 31 of this Annex, a ship to which this chapter applies shall comply with the following functional requirements:

.1 requirements on the continuous improvement of the ship's GHG fuel intensity in accordance with regulation 35 of this Annex; and

.2 requirements on GHG emissions pricing contributions for excess emissions and on rewards for the uptake of zero or near-zero GHG emission technologies, fuels and/or energy sources (ZNZs) in accordance with regulations 36 and 39.

Regulation 33
Attained annual GHG fuel intensity (attained annual GFI)

1 After the end of calendar year 2028 and after the end of each calendar year thereafter, each ship to which this chapter applies shall calculate the attained annual GFI over a 12-month period from 1 January to 31 December for the preceding calendar year (reporting period), using

[67] Refer to the *2023 IMO Strategy on Reduction of GHG Emissions from Ships* (resolution MEPC.377(80)).

the data collected in accordance with regulations 27 and 37 of this Annex and specified in appendix XII to this Annex, taking into account the guidelines to be developed by the Organization.[68]

2 The attained annual GFI of a ship in a given year (denoted as $GFI_{attained}$) shall be calculated as follows, taking into account the guidelines to be developed by the Organization:[69]

$$GFI_{attained} = \frac{\sum_{j=1}^{J} EI_j \times Energy_j}{Energy_{total}}$$

where

GFI$_{attained}$ is the attained annual GFI of a ship in a given year;

j is the fuel type;

J is the total number of fuels used during the reporting period, as reported to the IMO Ship Fuel Oil Consumption Database;

EI$_j$, expressed in gCO_2eq/MJ, is the GHG intensity, expressed on a well-to-wake basis of a fuel type *j*, calculated taking into account the guidelines developed by the Organization:[70]

Energy$_j$, expressed in MJ, refers to the energy consumption of fuel type j by the ship in the reporting period; and

Energy$_{total}$ expressed in MJ, refers to the total amount of energy used by the ship in the reporting period, including but not limited to fuel oil, electricity delivered from the shore power, and zero-emission energy sources, such as wind propulsion and solar power.

Regulation 34
Sustainable fuels certification schemes

1 The GHG intensity of a fuel shall be calculated using GHG emission factors and take into account all relevant metrics and indicators for each sustainability theme or aspect of a fuel as documented on the Fuel Lifecycle Label(s) (FLL).

2 GHG emission factors and sustainability themes or aspects of a fuel as documented on the FLL shall be certified, as appropriate, by a recognized Sustainable Fuels Certification Scheme (SFCS) taking into account guidelines to be developed by the Organization.[71]

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68 Refer to the guidelines to be developed on the calculation of the attained annual greenhouse gas fuel intensity (GFI Calculation Guidelines).

69 Refer to the guidelines to be developed on the calculation of the attained annual greenhouse gas fuel intensity (GFI Calculation Guidelines).

70 Refer to the *2024 Guidelines on life cycle GHG intensity of marine fuels* (resolution MEPC.391(81)), as may be amended.

71 Guidelines to be developed/amend the *2024 Guidelines on life cycle GHG intensity of marine fuels* (resolution MEPC.391(81)) (LCA guidelines), as appropriate.

3 The certified information in the FLL may accompany the bunker delivery note referred to in regulation 18 of this Annex, taking into account guidelines to be developed by the Organization.[72]

4 An SFCS shall be recognized by the Committee taking into account the recognition process(es) and criteria specified in guidelines to be developed by the Organization.[73] The recognition of an SFCS shall be subject to renewal every five years and periodic review, taking into account guidelines to be developed by the Organization.[74]

5 No later than 1 March 2027, the Secretary-General of the Organization shall publish a list of recognized SFCSs, and shall update the list periodically thereafter.

6 Within three months after the end of calendar year 2027, and within three months after the end of each following calendar year, the Organization shall ensure that the legal entity administering the recognized SFCS reports data relevant to their activity for that calendar year or portion thereof to ensure transparency, traceability, and environmental integrity in the certification process, taking into account guidelines to be developed by the Organization.[75] On the basis of the reported data, the Secretary-General of the Organization shall produce an annual report to the Committee.

Regulation 35
Target annual GHG fuel intensity (target annual GFI)

1 The target annual GFI (GFI_T) of a ship shall consist of the following two tiers:

.1 a Base target annual GFI (base target); and

.2 a Direct compliance target annual GFI (direct compliance target).

2 The GFI_T for each ship to which this regulation applies shall be determined/calculated as follows:

$$GFI_T = (1 - Z_T/100) \bullet GFI_{2008}$$

where

$_T$ is the calendar year referred to in Table 4;

GFI_{2008} is the GFI reference value equivalent to 93.3 gCO_2eq/MJ (well-to-wake), representing the average GFI of international shipping in year 2008; and

Z_T is the annual GFI reduction factor to ensure continuous improvement of the ship's GHG fuel intensity, consisting of both an annual reduction factor for the base target and for the direct compliance target, the values of which are specified in Table 4, as compared to the GFI reference value.

72 Guidelines to be developed/amend the *2024 Guidelines on life cycle GHG intensity of marine fuels (resolution MEPC.391(81))* (LCA guidelines), as appropriate.

73 Guidelines to be developed/amend the 2024 Guidelines on life cycle GHG intensity of marine fuels (resolution MEPC.391(81)) (LCA guidelines), as appropriate.

74 Guidelines to be developed/amend the 2024 Guidelines on life cycle GHG intensity of marine fuels (resolution MEPC.391(81)) (LCA guidelines), as appropriate.

75 Guidelines to be developed/amend the 2024 Guidelines on life cycle GHG intensity of marine fuels (resolution MEPC.391(81)) (LCA guidelines), as appropriate.

Table 4 – *Annual GFI reduction factors (in percentage) for the target annual GFI relative to the GFI reference value*

Year$_T$	**Z_T for Base target**	**Z_T for Direct compliance target**
2028	4.0%	17.0%
2029	6.0%	19.0%
2030	8.0%	21.0%
2031	12.4%	25.4%
2032	16.8%	29.8%
2033	21.2%	34.2%
2034	25.6%	38.6%
2035	30.0%	43.0%

3 By 1 January 2032, the Committee shall determine the Z-factor (Z_T) for the Base target and Direct compliance target for the years 2036 to 2040. The 2040 Z_T for the Base target shall be set at 65%.

Regulation 36
Annual GFI compliance approaches

1 At the end of each reporting period as defined in regulation 33, each ship shall determine its GFI compliance balance, as follows, taking into account guidelines to be developed:[76]

GFI compliance balance (expressed in tonnes of CO_2eq) =
(Direct compliance target annual GFI – Attained annual GFI) × $Energy_{total}$

2 If the GFI compliance balance is equal to or greater than zero, the ship shall be considered in direct compliance and be eligible to receive surplus units for its positive compliance balance in accordance with paragraph 11 of this regulation.

3 If the GFI compliance balance is less than zero, the ship shall determine its compliance deficit in accordance with paragraph 4 of this regulation and shall achieve compliance by balancing its deficit in accordance with the GFI compliance approaches in paragraphs 5 and/or 6, as applicable, of this regulation.

Assessment of the compliance deficit

4 A ship's compliance deficit comprises the quantification of emissions in excess of the tier(s) of the target annual GFI and shall be determined as follows, taking into account guidelines to be developed:[77]

.1 for ships whose attained annual GFI is equal to or less than the base target but greater than the direct compliance target:

[76] Refer to the guidelines to be developed on the calculation of the attained annual greenhouse gas fuel intensity (GFI Calculation Guidelines).

[77] Refer to the guidelines to be developed on the calculation of the attained annual greenhouse gas fuel intensity (GFI Calculation Guidelines).

Tier 1 compliance deficit =
(Direct compliance target annual GFI – Attained annual GFI) × $Energy_{total}$,

Or

.2 for ships whose attained annual GFI is greater than the base target:

Tier 1 compliance deficit =
(Direct compliance target annual GFI – Base target annual GFI) × $Energy_{total}$

And

Tier 2 compliance deficit =
(Base target annual GFI – Attained annual GFI) × $Energy_{total}$

Balance of the compliance deficit

5 A ship shall balance its Tier 1 compliance deficit through remedial units acquired by means of GHG emissions pricing contributions to the IMO Net-Zero Fund, priced at Tier 1 benchmark rates in accordance with paragraph 8 of this regulation, as recorded on the ship account statement issued by the IMO GFI Registry in accordance with regulation 38 of this Annex.

6 A ship shall balance its Tier 2 compliance deficit through one or more of the following GFI compliance approaches, as recorded on the ship account statement issued by the IMO GFI Registry in accordance with paragraph 5 of regulation 38 of this Annex, taking into account the guidelines to be developed by the Organization:[78]

.1 surplus units transferred from other ships;

.2 surplus units banked from previous reporting periods; and/or

.3 remedial units acquired by means of GHG emissions pricing contributions to the IMO Net-Zero Fund priced at Tier 2 benchmark rates in accordance with paragraph 9 of this regulation.

7 A ship that has fully balanced its compliance deficit in accordance with paragraphs 5 and 6 of this regulation, as applicable, shall be considered as being compliant with its target annual GFI, without prejudice to the ship to recover any costs incurred in the application of this regulation that relate to the operational responsibility of the ship. For the purpose of this regulation, operational responsibility of the ship means determining the fuel used or the cargo carried or the route or the speed of the ship.

Remedial Units

8 For the reporting periods 2028 to 2030, the initial price of a Tier 1 remedial unit shall be US$100 per tonne of CO_2eq on a well-to-wake basis.

9 For the reporting periods 2028 to 2030, the initial price of a Tier 2 remedial unit shall be US$380 per tonne of CO_2eq on a well-to-wake basis.

[78] Refer to guidelines to be developed by the Organization.

10 By 1 January 2028, the Committee shall determine the mechanism for reviewing and defining the price of a Tier 1 and Tier 2 remedial unit for the reporting periods starting 2031 and onwards.

Surplus Units

11 The amount of surplus units a ship in direct compliance is eligible to receive shall be equal to its positive compliance balance, expressed in tonnes of CO_2eq, taking into account guidelines to be developed by the Organization.[79]

12 A surplus unit, subject to paragraphs 6 and 15 of this regulation, credited to the ship account in the IMO GFI Registry may be used once for one of the following purposes as shall be recorded in the IMO GFI Registry, taking into account guidelines to be developed by the Organization:[80]

.1 transfer to another ship to balance that ship's Tier 2 compliance deficit;

.2 banked for use in the following reporting periods; or

.3 voluntarily cancelled as a mitigation contribution.

13 A surplus unit shall only be transferred or cancelled once, but different surplus units of a ship can be used for the different purposes provided for in paragraph 12 of this regulation.

14 An unassigned surplus unit shall be automatically banked.

15 A surplus unit shall have a validity of two calendar years after the calendar year of its issuance from the IMO GFI Registry. A surplus unit not used by the ship in whose account it is credited by its expiry date shall be cancelled as a mitigation contribution.

Regulation 37
Reporting and verification of the annual GFI

1 Within three months after the end of calendar year 2028 and by 31 March after each reporting period thereafter, the ship shall report to its Administration, or any organization duly authorized by it,[81] the attained annual GFI, the target annual GFI and the GFI compliance balance of the ship for that reporting period, respectively calculated in accordance with regulations 33, 35 and 36 of this Annex, together with the data collected as specified in appendix XII of this Annex via electronic communication and using the standardized format to be developed by the Organization[82] for the purpose of verifying the compliance of each ship with this chapter, taking into account guidelines to be developed by the Organization.

2 In the event of any transfer of a ship from one Administration to another and/or a change from one company to another completed after 1 January 2028, a ship shall, after the end of the calendar year in which the transfer takes place, comply with paragraph 1 of this regulation for the 12-month period from 1 January to 31 December of the calendar year during which the transfer took place.

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79 Refer to guidelines to be developed by the Organization.

80 Refer to guidelines to be developed by the Organization.

81 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

82 Refer to the *2022 Guidelines for the development of a ship energy efficiency management plan (SEEMP)* (resolution MEPC.346(78), as amended by resolution MEPC.388(81).

3 Within six months after the end of 2028 and by 30 June after each following reporting period, the Administration, or any organization duly authorized by it,[83] shall verify the reported data pursuant paragraph 1 of this regulation and report the verified data to the IMO GFI Registry, taking into account the guidelines to be developed by the Organization.[84]

4 Within one month after the ship's verified data has been reported to the IMO GFI Registry pursuant to paragraph 3 of this regulation or on the 31 July at the latest, the ship shall determine and record in the IMO GFI Registry its selected GFI compliance approach(es) in accordance with regulation 36 of this Annex.

5 By 31 August after each reporting period, the IMO GFI Registry shall issue, for each ship account and reporting period, a ship account statement reflecting the transactions recorded in accordance with paragraph 4 of regulation 38. The ship account statement shall be made available to the ship, its Administration, or any organization duly authorized by it,[85] taking into account guidelines to be developed by the Organization.[86]

6 By 30 September after each reporting period, the Administration, or any organization duly authorized by it,[87] shall on the basis of the reported data and selected GFI compliance approach(es) as recorded on the ship account statement in the IMO GFI Registry, issue a Statement of Compliance related to the annual GFI in accordance with paragraph 9 of regulation 6 of this Annex. The Administration, or any organization duly authorized by it,[88] shall report that Statement of Compliance in the IMO GFI Registry ship account by 31 October after each reporting period.

7 In the event of a transfer of a ship from one Administration to another and/or a change from one company to another as referred to in paragraph 2 of this regulation, the ship shall, on the day of completion of the transfer and/or change or as close as practical thereto report the data specified in paragraph 1 of regulation 33 of this Annex for the portion of the calendar year corresponding to that Administration and/or company to the losing Administration, or any organization duly authorized by it,[89] in the case of a transfer of Administration or to its Administration, or any organization duly authorized by it,[90] in the case of a change of company. The Administration or any organization duly authorized by it[91] shall verify the data pursuant to paragraph 1 of this regulation and issue a Statement of Compliance pursuant to paragraph 10 of regulation 6 of this Annex. Within one month following the issuance of the Statement of Compliance, the Administration shall report the verified data and that Statement of Compliance to the IMO GFI Registry, taking into account guidelines to be developed by the Organization.[92]

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83 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

84 Refer to guidelines to be developed by the Organization.

85 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

86 Refer to guidelines to be developed by the Organization.

87 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

88 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

89 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

90 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

91 Refer to the Code for Recognized Organizations (RO Code) (resolutions MSC.349(92) and MEPC.237(65)).

92 Refer to guidelines to be developed by the Organization.

8 From 1 January 2028, if a ship is permanently withdrawn from service during a reporting period, the ship shall fulfil its reporting duties for the time during which the ship was operational within that period and comply with the requirements of this chapter on the day of completion of the withdrawal or as close as practical thereto, taking into account guidelines to be developed by the Organization.[93]

Regulation 38
IMO GFI Registry

Establishment

1 The Secretary-General of the Organization shall establish and administer the IMO GFI Registry to facilitate the implementation of regulation 36, taking into account the guidelines to be developed by the Organization.[94]

Ship specific obligations

2 Each ship to which this chapter applies shall have by 1 October 2027 an account with the IMO GFI Registry and shall pay by 30 June 2028, and by 30 June of each year thereafter, the annual administration fee to the IMO GFI Registry.

3 The annual administration fee shall be determined by the Secretary-General to the IMO GFI Registry to cover its administrative cost, taking into guidelines to be developed by the Organization.[95]

Functionalities

4 In accordance with regulation 36, the IMO GFI Registry shall in each ship account, as applicable:

.1 credit the amount of surplus units a ship in direct compliance is eligible to receive;

.2 record banked surplus units between reporting periods;

.3 record all transferred surplus units from one ship account to another ship account;

.4 cancel surplus units when:

.1 used by a ship to balance its Tier 2 compliance deficit for a reporting period; and/or

.2 expired or voluntarily cancelled at the request of the ship; and/or

.5 credit remedial units to a ship account, equal to the amount and the tier type of remedial units acquired by means of GHG emissions pricing contributions to the IMO Net-Zero Fund, and cancel the remedial unit following proof of payment.

93 Refer to guidelines to be developed by the Organization.

94 Refer to guidelines to be developed by the Organization.

95 Refer to guidelines to be developed by the Organization.

5 By 31 August after the end of each reporting period, the IMO GFI Registry shall issue for each ship account and reporting period a ship account statement reflecting all the transactions recorded in accordance with paragraph 4 of this regulation and the GFI compliance balance.

6 The IMO GFI Registry shall record for each ship account for each reporting period the following information:

.1 the ship account statement;

.2 the verified attained annual GFI;

.3 the total energy consumption;

.4 the total energy consumption of each ZNZ;

.5 the GHG emissions avoided by the uptake of ZNZs;

.6 Statement of Compliance related to the annual GHG fuel intensity, and

.7 any other information, taking into account guidelines to be developed by the Organization.[96]

Access to the IMO GFI Registry

7 The Secretary-General of the Organization shall grant access to the Administration to all recorded data in the accounts of ships registered by that Administration, and to any organization duly authorized by that Administration,[97] to verify and report the ship's data in accordance with regulation 37 taking into account guidelines to be developed by the Organization.[98]

8 The Secretary-General of the Organization shall maintain the IMO GFI Registry and grant access to users, taking into account guidelines to be developed by the Organization.

Reporting to the Marine Environment Protection Committee

9 On the basis of the information maintained in accordance with this regulation, the Secretary-General of the Organization shall produce an annual report to the Committee summarizing the data collected, specifying the ships with an active ship account, transaction patterns in the issuance, transferring, usage and cancellation of surplus units and remedial units, share of zero or near-zero GHG emission technologies, fuels and/or energy sources (ZNZs) used by ships in IMO GFI Registry and other relevant information as may be requested by the Committee.

96 Refer to guidelines to be developed by the Organization.

97 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

98 Refer to guidelines to be developed by the Organization.

Regulation 39
Uptake of zero or near-zero GHG emission technologies, fuels and/or energy sources (ZNZs)

1 ZNZs shall include technologies, fuels and energy sources and be evaluated on a well-to-wake basis, taking into account guidelines to be developed by the Organization.[99] The GFI threshold for ZNZs shall be set at not greater than 19.0 gCO_2eq/MJ for an initial period until 31 December 2034, and from 1 January 2035, the threshold shall be set at not greater than 14.0 gCO_2eq/MJ taking into account guidelines developed[100] and to be developed by the Organization.[101] Notwithstanding, the Committee may approve additional ZNZs taking into account guidelines to be developed by the Organization.[102]

2 Ships may receive rewards from the IMO Net-Zero Fund for the ZNZs used, taking into account guidelines to be developed by the Organization.[103]

3 No later than 1 March 2027 and every five years thereafter the Committee shall define the reward referred to in paragraph 2 of this regulation, and the methodology to determine such reward, taking into account guidelines to be developed by the Organization[104].

4 The Organization shall monitor and publish the share of ZNZs in the total annual energy used on board by ships falling under the scope of chapter 5 of this Annex.

Regulation 40
The IMO Net-Zero Fund

1 The Secretary-General of the Organization shall establish the IMO Net-Zero Fund to support the implementation of this chapter and achieve its goal as set out in regulation 31 of this Annex. Any costs associated with the operation of the Fund and its Governing Board shall be borne by the Fund.

2 The IMO Net-Zero Fund shall receive and manage GHG emissions pricing contributions made by ships pursuant to regulation 36, and disburse collected revenue in accordance with regulation 41.

3 The Committee shall adopt the governing provisions for the IMO Net-Zero Fund and appoint a Governing Board to oversee the day-to-day operations of the Fund on its behalf in accordance with the governing provisions.

4 The governing provisions, referred to in paragraph 3 of this regulation, shall include provisions on which entities may be eligible to receive funds from the IMO Net-Zero Fund; the types of financing mechanisms by which funds may be disbursed; the operating procedures of the IMO Net-Zero Fund and its Governing Board; which entities and organizations the IMO Net-Zero Fund may cooperate with in the disbursement of revenue; and allocations of revenue to the different purposes set out in regulation 41 of this Annex including those that promote a just and equitable transition in the context of this measure.

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99 Refer to guidelines to be developed by the Organization.

100 Refer to the *2024 Guidelines on life cycle GHG intensity of marine fuels* (resolution MEPC.391(81)).

101 Guidelines to be developed by the Organization.

102 Refer to guidelines to be developed by the Organization.

103 Refer to guidelines to be developed by the Organization.

104 Refer to guidelines to be developed by the Organization.

5 The Governing Board shall have a gender and geographically balanced composition, ensuring adequate representation of developing countries, in particular of small island developing States (SIDS) and least developed countries (LDCs).

6 The Governing Board shall produce an annual report to the Committee containing an overview of its operations, including total contributions received, commitments and disbursement of revenue to the different purposes set out in regulation 41, and other relevant information as may be requested by the Committee.

7 On the basis of the Governing Board's annual report referred to in paragraph 6 of this regulation, the Committee shall periodically review the allocation of revenue to the different purposes set out in regulation 41.

8 The Fund shall be subject to audits.

Regulation 41
Disbursement of revenue

1 The IMO Net-Zero Fund shall disburse collected revenue for the following purposes, as shall be specified in its governing provisions:

.1 rewards for the use of ZNZs, in accordance with regulation 39 of this Annex;

.2 in the context of the implementation of this chapter and, promoting a just and equitable transition in States by facilitating environmental and climate protection, adaptation and resilience building within the boundaries of the energy transition in shipping, paying particular attention to the needs of developing countries, in particular least developed countries (LDCs) and small island developing States (SIDS), allocating sufficient revenue, for:

.1 researching, developing and making globally available and deploying zero and near-zero GHG emission technologies, fuels and/or energy sources, supporting the energy transition of shipping, and developing the necessary maritime, coastal and port-related infrastructure and equipment;

.2 enabling a just transition for seafarers and other maritime workforce;

.3 facilitating information-sharing, technology transfer, capacity-building, training and technical cooperation supporting the implementation of the regulations in this chapter;

.4 supporting the development and implementation of National Action Plans (NAPs),[105] including fleet renewal and upgrade; and

.5 addressing, as appropriate, disproportionately negative impacts on States, including on food security, resulting from the implementation of the regulations in this chapter;[106] and

[105] Refer to resolution MEPC.367(79) on *Encouragement of Member States to develop and submit voluntary national action plans to address GHG emissions from ships*.

[106] Refer to the *2023 IMO Strategy on Reduction of GHG Emissions from Ships* (resolution MEPC.377(80)) and MEPC.1/Circ.885/Rev.1 on the *Revised procedure for assessing impacts on States of candidate measures*.

.3 cover the administration and operational costs of the Fund and its Governing Board.

Regulation 42
Promotion of technical cooperation and transfer of technology relating to the continuous improvement of the ship's GHG fuel intensity

1 Administrations shall, in cooperation with the Organization and other international bodies, promote and provide support, as appropriate, directly or through the Organization to States that request technical assistance, especially developing States.

2 The Administration of a Party shall cooperate actively with other Parties, subject to its national laws, regulations and policies, to promote the development and transfer of technology and exchange of information to States which request technical assistance, particularly developing States, in respect of the implementation of measures to fulfil the requirements of chapter 5 of this Annex.

3 The Organization shall promote information-sharing, technology transfer, capacity-building and technical cooperation to enable the development of the necessary maritime, coastal and port-related infrastructure and equipment to support supply of zero or near-zero GHG emission fuels and/or energy sources in developing States.

Regulation 43
Food security

The Committee shall:

.1 address, including avoiding, remedying and mitigating, the disproportionately negative impacts of this chapter on food security, paying particular attention to countries exposed to food insecurity; and

.2 keep the potential impacts of this chapter on food security under continuous review.

Regulation 44
Review of the chapter

1 To ensure the continued achievement of the goal of this chapter, every five years a review shall be completed by the Organization to assess the effectiveness of this chapter in achieving its goal as set out in regulation 31 of this Annex, based on which it shall consider:

.1 amending the annual GFI reduction factor (base target and direct compliance target) in regulation 35 of this Annex;

.2 amending the threshold values for ZNZs as defined in regulation 39 of this Annex; and

.3 the possible application of this chapter to ships of 400 gross tonnage and above.

Chapter 6 – Verification of compliance with the provisions of this annex

Regulation 45
Application

Parties shall use the provisions of the Code for Implementation in the execution of their obligations and responsibilities contained in this Annex.

Regulation 46
Verification of compliance

1 Every Party shall be subject to periodic audits by the Organization in accordance with the audit standard to verify compliance with and implementation of this Annex.

2 The Secretary-General of the Organization shall have responsibility for administering the Audit Scheme, based on the guidelines developed by the Organization.[107]

3 Every Party shall have responsibility for facilitating the conduct of the audit and implementation of a programme of actions to address the findings, based on the guidelines developed by the Organization.[108]

4 The audits of all Parties shall be:

.1 based on an overall schedule developed by the Secretary-General of the Organization, taking into account the guidelines developed by the Organization; [109] and

.2 conducted at periodic intervals, taking into account the guidelines developed by the Organization. [110]

107 Refer to *Framework and procedures for the IMO Member State Audit Scheme* (resolution A.1067(28)).

108 Refer to *Promotion of technical cooperation and transfer of technology relating to the improvement of energy efficiency of ships* (resolution MEPC.229(65)), and the *Model agreement between governments on technological cooperation for the implementation of the regulations in chapter 4 of MARPOL Annex VI* (MEPC.1/Circ.861).

109 Refer to *Promotion of technical cooperation and transfer of technology relating to the improvement of energy efficiency of ships* (resolution MEPC.229(65)), and the *Model agreement between governments on technological cooperation for the implementation of the regulations in chapter 4 of MARPOL Annex VI* (MEPC.1/Circ.861).

110 Refer to *Promotion of technical cooperation and transfer of technology relating to the improvement of energy efficiency of ships* (resolution MEPC.229(65)), and the *Model agreement between governments on technological cooperation for the implementation of the regulations in chapter 4 of MARPOL Annex VI* (MEPC.1/Circ.861).

Appendix I

Form of International Air Pollution Prevention (IAPP) Certificate (regulation 8)

INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE

Issued under the provisions of the Protocol of 1997, as amended, to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred to as "the Convention") under the authority of the Government of:

……..……
(full designation of the country)

by……..……
(full designation of the competent person or organization authorized under the provisions of the Convention)

Particulars of ship[1]

Name of ship ……

Distinctive number or letters ……..…….

IMO number[2] ……..

Port of registry ……..……..……

Gross tonnage ……..……..…….

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with regulation 5 of Annex VI of the Convention; and

2 That the survey shows that the equipment, systems, fittings, arrangements and materials fully comply with the applicable requirements of Annex VI of the Convention.

This Certificate is valid until (dd/mm/yyyy)[3] …… subject to surveys in accordance with regulation 5 of Annex VI of the Convention.

Completion date of the survey on which this Certificate is based (dd/mm/yyyy)……

Issued at ……
(place of issue of Certificate)

Date (dd/mm/yyyy) ……..…. ……
(date of issue) *(signature of duly authorized official issuing the Certificate)*

(seal or stamp of the authority, as appropriate)

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1 Alternatively, the particulars of the ship may be placed horizontally in boxes.

2 In accordance with the *IMO ship identification number scheme* (resolution A.1117(30)).

3 Insert the date of expiry as specified by the Administration in accordance with regulation 9.1 of Annex VI of the Convention. The day and the month of this date correspond to the anniversary date as defined in regulation 2.1.3 of Annex VI of the Convention, unless amended in accordance with regulation 9.8 of Annex VI of the Convention.

ENDORSEMENT FOR ANNUAL AND INTERMEDIATE SURVEYS

THIS IS TO CERTIFY that, at a survey required by regulation 5 of Annex VI of the Convention, the ship was found to comply with the relevant provisions of that Annex:

Annual survey Signed. …….
(signature of duly authorized official)

Place . …….

Date (dd/mm/yyyy) ……
(seal or stamp of the authority, as appropriate)

Annual/Intermediate[4] survey Signed……
(signature of duly authorized official)

Place ……..

Date (dd/mm/yyyy) ……..
(seal or stamp of the authority, as appropriate)

Annual/Intermediate[4] survey Signed……
(signature of duly authorized official)

Place ……..

Date (dd/mm/yyyy) ……
(seal or stamp of the authority, as appropriate)

Annual survey Signed. …….
(signature of duly authorized official)

Place……..

Date (dd/mm/yyyy) ……
(seal or stamp of the authority, as appropriate)

ANNUAL/INTERMEDIATE SURVEY IN ACCORDANCE WITH REGULATION 9.8.3

THIS IS TO CERTIFY that, at an annual/intermediate[4] survey in accordance with regulation 9.8.3 of Annex VI of the Convention, the ship was found to comply with the relevant provisions of that Annex:

Signed……
(signature of duly authorized official)

Place ……..

Date (dd/mm/yyyy) ……..
(seal or stamp of the authority, as appropriate)

[4] Delete as appropriate.

ENDORSEMENT TO EXTEND THE CERTIFICATE IF VALID FOR LESS THAN FIVE YEARS WHERE REGULATION 9.3 APPLIES

The ship complies with the relevant provisions of the Annex, and this Certificate shall, in accordance with regulation 9.3 of Annex VI of the Convention, be accepted as valid until (dd/mm/yyyy) ……...

Signed. ……
(signature of duly authorized official)

Place …….

Date (dd/mm/yyyy) ……

(seal or stamp of the authority, as appropriate)

ENDORSEMENT WHERE THE RENEWAL SURVEY HAS BEEN COMPLETED AND REGULATION 9.4 APPLIES

The ship complies with the relevant provisions of the Annex, and this Certificate shall, in accordance with regulation 9.4 of Annex VI of the Convention, be accepted as valid until (dd/mm/yyyy) ……

Signed. ……
(signature of duly authorized official)

Place …….

Date (dd/mm/yyyy) ……

(seal or stamp of the authority, as appropriate)

ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE UNTIL REACHING THE PORT OF SURVEY OR FOR A PERIOD OF GRACE WHERE REGULATION 9.5 OR 9.6 APPLIES

This Certificate shall, in accordance with regulation 9.5 or 9.6[4] of Annex VI of the Convention, be accepted as valid until (dd/mm/yyyy)…….

Signed. ……...
(signature of duly authorized official)

Place ……

Date (dd/mm/yyyy) …….

(seal or stamp of the authority, as appropriate)

[4] Delete as appropriate.

ENDORSEMENT FOR ADVANCEMENT OF ANNIVERSARY DATE
WHERE REGULATION 9.8 APPLIES

In accordance with regulation 9.8 of Annex VI of the Convention, the new anniversary date is (dd/mm/yyyy)……

Signed. …….
(signature of duly authorized official)

Place ……

Date (dd/mm/yyyy) …….

(seal or stamp of the authority, as appropriate)

In accordance with regulation 9.8 of Annex VI of the Convention, the new anniversary date is (dd/mm/yyyy)……..……

Signed……..
(signature of duly authorized official)

Place …….

Date (dd/mm/yyyy) ……

(seal or stamp of the authority, as appropriate)

SUPPLEMENT TO
INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE (IAPP CERTIFICATE)

RECORD OF CONSTRUCTION AND EQUIPMENT

Notes

1 This Record shall be permanently attached to the IAPP Certificate. The IAPP Certificate shall be available on board the ship at all times.

2 The Record shall be at least in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in case of a dispute or discrepancy.

3 Entries in boxes shall be made by inserting either: a cross (x) for the answers "yes" and "applicable"; or a dash (–) for the answers "no" and "not applicable", as appropriate.

4 Unless otherwise stated, regulations mentioned in this Record refer to regulations of Annex VI of the Convention and resolutions or circulars refer to those adopted by the International Maritime Organization.

1 Particulars of ship

1.1 Name of ship…….....…….....…….....

1.2 IMO number…….....…….....…….....

1.3 Date of build:

1.3.1 Date of building contract *(dd/mm/yyyy)*……..

1.3.2 Date on which keel was laid or ship was at a similar stage of construction *(dd/mm/yyyy)*……

1.3.3 Date of delivery *(dd/mm/yyyy)*:…….

1.4 Length *(L)*[5] metres …….....…….....…….....

2 Control of emissions from ships

2.1 *Ozone-depleting substances* (regulation 12)

2.1.1 The following fire-extinguishing systems, other systems and equipment containing ozone-depleting substances, other than hydrochlorofluorocarbons (HCFCs), installed before 19 May 2005 may continue in service:

System or equipment	Location on board	Substance

[5] Completed only in respect of ships constructed on or after 1 January 2016 that are specially designed, and used solely for recreational purposes and to which, in accordance with regulation 13.5.2.1 or regulation 13.5.2.3, the NO_X emission limit as given by regulation 13.5.1.1 will not apply.

2.1.2 The following systems containing HCFCs installed before 1 January 2020 may continue in service:

System or equipment	Location on board	Substance

2.2 *Nitrogen oxides (NO_X) (regulation 13)*

2.2.1 The following marine diesel engines installed on this ship are in accordance with the requirements of regulation 13, as indicated:

Applicable regulation of MARPOL Annex VI (NTC = NO_X Technical Code 2008) (AM = approved method)			Engine #1	Engine #2	Engine #3	Engine #4	Engine #5
1	Manufacturer and model						
2	Serial number						
3	Use (applicable application cycle(s) – NTC 3.2)						
4	Rated power (kW) (NTC 1.3.11)						
5	Rated speed (rpm) (NTC 1.3.12)						
6	Identical engine installed ≥ 1/1/2000 exempted by 13.1.1.2		□	□	□	□	□
7	Identical engine installation date (dd/mm/yyyy) as per 13.1.1.2						
8a	Major conversion (dd/mm/yyyy)	13.2.1.1 & 13.2.2					
8b		13.2.1.2 & 13.2.3					
8c		13.2.1.3 & 13.2.3					
9a	Tier I	13.3	□	□	□	□	□
9b		13.2.2	□	□	□	□	□
9c		13.2.3.1	□	□	□	□	□
9d		13.2.3.2	□	□	□	□	□
9e		13.7.1.2	□	□	□	□	□
9f	Tier I	NTC 8 (Multiple Engine Operational Profiles)	□	□	□	□	□
10a	Tier II	13.4	□	□	□	□	□
10b		13.2.2	□	□	□	□	□
10c		13.2.2 (Tier III not possible)	□	□	□	□	□
10d		13.2.3.2	□	□	□	□	□
10e		13.5.2 (Exemptions)	□	□	□	□	□
10f		13.7.1.2	□	□	□	□	□
10g	Tier II	NTC 8 (Multiple Engine Operational Profiles)	□	□	□	□	□

Applicable regulation of MARPOL Annex VI (NTC = NO_X Technical Code 2008) (AM = approved method)			Engine #1	Engine #2	Engine #3	Engine #4	Engine #5
11a	NO_x Tier III Emission Control Areas	13.5.1.1	□	□	□	□	□
11b		13.2.2	□	□	□	□	□
11c		13.2.3.2	□	□	□	□	□
11d		13.7.1.2	□	□	□	□	□
11e	Tier III	NTC 8 (Multiple Engine Operational Profiles)	□	□	□	□	□
12	AM[6]	installed	□	□	□	□	□
13		not commercially available at this survey	□	□	□	□	□
14		not applicable	□	□	□	□	□

2.3 *Sulphur oxides (SO_X) and particulate matter* (regulation 14)

2.3.1 When the ship operates outside of an emission control area specified in regulation 14.3, the ship uses:

.1 fuel oil with a sulphur content as documented by bunker delivery notes that does not exceed the limit value of 0.50% m/m, and/or
…….....□

.2 an equivalent arrangement approved in accordance with regulation 4.1 as listed in paragraph 2.6 that is at least as effective in terms of SO_X emission reductions as compared to using a fuel oil with a sulphur content limit value of 0.50% m/m ……..……..……..……..□

2.3.2 When the ship operates inside an emission control area specified in regulation 14.3, the ship uses:

.1 fuel oil with a sulphur content as documented by bunker delivery notes that does not exceed the limit value of 0.10% m/m, and/or
…… □

.2 an equivalent arrangement approved in accordance with regulation 4.1 as listed in paragraph 2.6 that is at least as effective in terms of SO_X emission reductions as compared to using a fuel oil with a sulphur content limit value of 0.10% m/m ……..……□

2.3.3 For a ship without an equivalent arrangement approved in accordance with regulation 4.1 as listed in paragraph 2.6, the sulphur content of fuel oil carried for use on board the ship shall not exceed 0.50% m/m as documented by bunker delivery notes ……..…….□

2.3.4 The ship is fitted with designated sampling point(s) in accordance with regulation 14.10 or 14.11.....□

[6] Refer to the *2014 Guidelines on the approved method process* (resolution MEPC.243(66)).

2.3.5 In accordance with regulation 14.12, the requirement for fitting or designating sampling point(s) in accordance with regulation 14.10 or 14.11 is not applicable for a fuel oil service system used for a low-flashpoint fuel or a gas fuel........................□

2.4 *Volatile organic compounds (VOCs)* (regulation 15)

2.4.1 The tanker has a vapour collection system installed and approved in accordance with MSC/Circ.585……………………...................………………...……...……...................□

2.4.2.1 For a tanker carrying crude oil, there is an approved VOC management plan …..□

2.4.2.2 VOC management plan approval reference …………...……..................……..…

2.5 *Shipboard incineration* (regulation 16)

The ship has an incinerator:

.1 installed on or after 1 January 2000 that complies with:

.1 resolution MEPC.76(40), as amended[7] ...……..................……..…□

.2 resolution MEPC.244(66)[8] …...........……………………………….□

.2 installed before 1 January 2000 that complies with:

.1 resolution MEPC.59(33), as amended[9] ....……….□

.2 resolution MEPC.76(40), as amended[6] ....…………………..□

2.6 *Equivalents* (regulation 4)

The ship has been allowed to use the following fitting, material, appliance or apparatus to be fitted in a ship or other procedures, alternative fuel oils, or compliance methods used as an alternative to that required by this Annex:

System or equipment	Equivalent used	Approval reference

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at . . . .
(place of issue of the Record)

Date (dd/mm/yyyy) . . . . *(date of issue)*

. . . . *(signature of duly authorized official issuing the Record)*

(seal or stamp of the authority, as appropriate)

[7] As amended by resolution MEPC.93(45).

[8] As amended by resolution MEPC.368(79).

[9] As amended by resolution MEPC.92(45).

Appendix II

Test cycles and weighting factors (regulation 13)

The following test cycles and weighting factors shall be applied for verification of compliance of marine diesel engines with the applicable NO_x limit in accordance with regulation 13 of this annex using the test procedure and calculation method as specified in the revised NO_x Technical Code 2008.

.1 For a fixed pitch propeller propulsion engine or a propeller-law operated non-propulsion engine, test cycle E3 shall be applied in accordance with table 1;

.2 For a propulsion engine that does not operate with a fixed pitch propeller, including an engine fitted as part of a diesel-electric installation or an engine operated with a controllable-pitch propeller, test cycle E2 shall be applied in accordance with table 2;

.3 For a non-propulsion engine that is a constant-speed engine, test cycle D2 shall be applied in accordance with table 3;

.4 For a non-propulsion engine that operates as a variable-speed engine, not included above, test cycle C1 shall be applied in accordance with table 4.

Table 1 – Test cycle for a marine diesel engine as given by .1 above

Test cycle E3	Speed	100%	91%	80%	63%
	Power	100%	75%	50%	25%
	Weighting factor	0.2	0.5	0.15	0.15

Table 2 – Test cycle for a *marine diesel engine as given by .2 above*

Test cycle E2	Speed	100%	100%	100%	100%
	Power	100%	75%	50%	25%
	Weighting factor	0.2	0.5	0.15	0.15

Table 3 – Test cycle for a marine diesel engine as given by .3 above

Test cycle D2	Speed	100%	100%	100%	100%	100%
	Power	100%	75%	50%	25%	10%
	Weighting factor	0.05	0.25	0.3	0.3	0.1

Table 4 – Test cycle for a marine diesel engine as given by .4 above

Test cycle C1	Speed	Rated				Intermediate			Idle
	Torque	100%	75%	50%	10%	100%	75%	50%	0%
	Weighting factor	0.15	0.15	0.15	0.1	0.1	0.1	0.1	0.15

In the case of marine diesel engine to be certified in accordance with paragraph 5.1.1 of regulation 13, the specific emission at each individual mode point shall not exceed the applicable NO_x emission limit value by more than 50% except as follows:

.1 The 10% mode point in the D2 test cycle.

.2 The 10% mode point in the C1 test cycle.

.3 The idle mode point in the C1 test cycle.

Appendix III

Criteria and procedures for the designation of emission control areas (regulations 13.6 and 14.3)

1 Objectives

1.1 The purpose of this appendix is to provide Parties with the criteria and procedures for formulating and submitting proposals for the designation of emission control areas and to set forth the factors to be considered in the assessment of such proposals by the Organization.

1.2 Emissions of NO_X, SO_X and particulate matter from ocean-going ships contribute to ambient concentrations of air pollution in cities and coastal areas around the world. Adverse public health and environmental effects associated with air pollution include premature mortality, cardiopulmonary disease, lung cancer, chronic respiratory ailments, acidification and eutrophication.

1.3 An emission control area should be considered for adoption by the Organization if supported by a demonstrated need to prevent, reduce and control emissions of NO_X or SO_X and particulate matter or all three types of emissions (hereinafter emissions) from ships.

2 Process for the designation of emission control areas

2.1 A proposal to the Organization for the designation of an emission control area for NO_X or SO_X and particulate matter or all three types of emissions may be submitted only by Parties. Where two or more Parties have a common interest in a particular area, they should formulate a coordinated proposal.

2.2 A proposal to designate a given area as an emission control area should be submitted to the Organization in accordance with the rules and procedures established by the Organization.

3 Criteria for designation of an emission control area

3.1 The proposal shall include:

.1 a clear delineation of the proposed area of application, along with a reference chart on which the area is marked;

.2 the type or types of emission(s) that is or are being proposed for control (i.e. NO_X or SO_X and particulate matter or all three types of emissions);

.3 a description of the human populations and environmental areas at risk from the impacts of ship emissions;

.4 an assessment that emissions from ships operating in the proposed area of application are contributing to ambient concentrations of air pollution or to adverse environmental impacts. Such assessment shall include a description of the impacts of the relevant emissions on human health and the environment, such as adverse impacts on terrestrial and aquatic ecosystems, areas of natural productivity, critical habitats, water quality, human health, and areas of cultural and scientific significance, if applicable. The sources of relevant data including methodologies used shall be identified;

.5 relevant information, pertaining to the meteorological conditions in the proposed area of application, to the human populations and environmental areas at risk, in particular prevailing wind patterns, or to topographical, geological, oceanographic, morphological or other conditions that contribute to ambient concentrations of air pollution or adverse environmental impacts;

.6 the nature of the ship traffic in the proposed emission control area, including the patterns and density of such traffic;

.7 a description of the control measures taken by the proposing Party or Parties addressing land-based sources of NO_X, SO_X and particulate matter emissions affecting the human populations and environmental areas at risk that are in place and operating concurrently with the consideration of measures to be adopted in relation to provisions of regulations 13 and 14 of Annex VI; and

.8 the relative costs of reducing emissions from ships when compared with land-based controls, and the economic impacts on shipping engaged in international trade.

3.2 The geographical limits of an emission control area will be based on the relevant criteria outlined above, including emissions and deposition from ships navigating in the proposed area, traffic patterns and density, and wind conditions.

4 Procedures for the assessment and adoption of emission control areas by the Organization

4.1 The Organization shall consider each proposal submitted to it by a Party or Parties.

4.2 In assessing the proposal, the Organization shall take into account the criteria that are to be included in each proposal for adoption as set forth in section 3 above.

4.3 An emission control area shall be designated by means of an amendment to this Annex, considered, adopted and brought into force in accordance with article 16 of the present Convention.

5 Operation of emission control areas

5.1 Parties that have ships navigating in the area are encouraged to bring to the Organization any concerns regarding the operation of the area.

Appendix IV

Type approval and operating limits for shipboard incinerators (regulation 16)

1 Shipboard incinerators described in regulation 16.6.1 shall possess an IMO Type Approval Certificate for each incinerator. In order to obtain such certificate, the incinerator shall be designed and built to an approved standard as described in regulation 16.6.1. Each model shall be subject to a specified type approval test operation at the factory or an approved test facility, and under the responsibility of the Administration, using the following standard fuel/waste specification for the type approval test for determining whether the incinerator operates within the limits specified in paragraph 2 of this appendix:

Sludge oil consisting of:	75% sludge oil from heavy fuel oil (HFO); 5% waste lubricating oil; and 20% `emulsified water.
Solid waste consisting of:	50% food waste; 50% rubbish containing: approx. 30% paper, " 40% cardboard, " 10% rags, " 20% plastic. The mixture will have up to 50% moisture and 7% incombustible solids.

2 Incinerators described in regulation 16.6.1 shall operate within the following limits:

O_2 in combustion chamber:	6 -12%
CO in flue gas maximum average:	200 mg/MJ
Soot number maximum average:	Bacharach 3 or Ringelmann 1 (20% opacity) (a higher soot number is acceptable only during very short periods such as starting up)
Unburned components in ash residues:	Maximum 10% by weight
Combustion chamber flue gas outlet temperature range:	850 -1,200°C

Appendix V

Information to be included in the bunker delivery note (regulation 18.5)

1 Name and IMO number of receiving ship

2 Port

3 Date of commencement of delivery

4 Name, address and telephone number of marine fuel oil supplier

5 Product name(s)

6 Quantity in metric tonnes

7 Density at 15°C (kg/m^3)[1]

8 Sulphur content (% m/m)[2]

9 The flashpoint (°C) specified in accordance with standards acceptable to the Organization[3], or a statement that the flashpoint has been measured at or above 70°C;

10 A declaration signed and certified by the fuel oil supplier's representative that the fuel oil supplied is in conformity with regulation 18.3 of this Annex and that the sulphur content of the fuel oil supplied does not exceed:

□ the limit value given by regulation 14.1 of this Annex;

□ the limit value given by regulation 14.4 of this Annex; or

□ the purchaser's specified limit value of _____ (% m/m), as completed by the fuel oil supplier's representative and on the basis of the purchaser's notification that the fuel oil:

.1 is intended to be used in combination with an equivalent means of compliance in accordance with regulation 4 of this Annex; or

.2 is subject to a relevant exemption for a ship to conduct trials for sulphur oxides emission reduction and control technology research in accordance with regulation 3.2 of this Annex.

The declaration shall be completed by the fuel oil supplier's representative by marking the applicable box(es) with a cross (x).

---

1 Fuel oil shall be tested in accordance with ISO 3675:1998 or ISO 12185:1996.

2 Fuel oil shall be tested in accordance with ISO 8754:2003.

3 ISO 2719:2016, Determination of flash point – Pensky-Martens closed cup method, Procedure A (for Distillate Fuels) or Procedure B (for Residual Fuels).

Appendix VI

Verification procedures for a MARPOL Annex VI fuel oil sample (regulation 18.8.2 or regulation 14.8)

The following relevant verification procedure shall be used to determine whether the fuel oil delivered to, in use or carried for use on board a ship has met the applicable sulphur limit of regulation 14 of this Annex.

This appendix refers to the following representative MARPOL Annex VI fuel oil samples:

Part 1 – sample of fuel oil delivered[1] in accordance with regulation 18.8.1, hereafter referred to as the "MARPOL delivered sample" as defined in regulation 2.1.22.

Part 2 – sample of fuel oil in use,[2] intended to be used or carried for use on board in accordance with regulation 14.8, hereafter referred to as the "in-use sample" as defined in regulation 2.1.16 and "onboard sample"[3] as defined in regulation 2.1.24.

Part 1 – MARPOL delivered sample

1 General requirements

1.1 The representative sample of the fuel oil, which is required by regulation 18.8.1 (the MARPOL delivered sample), shall be used to verify the sulphur content of the fuel oil delivered to a ship.

1.2 A Party, through its competent authority, shall manage the verification procedure.

1.3 A laboratory undertaking the sulphur testing procedure given in this appendix shall have valid accreditation[4] in respect of the test method to be used.

2 Verification procedure Part 1

2.1 The MARPOL delivered sample shall be conveyed by the competent authority to the laboratory.

2.2 The laboratory shall:

.1 record the details of the seal number and the sample label on the test record;

.2 record the condition of the seal of the sample as received on the test record; and

.3 reject any sample where the seal has been broken prior to receipt and record that rejection on the test record.

---

1 Samples taken in accordance with the *Guidelines for the sampling of fuel oil for determination of compliance with MARPOL Annex VI and SOLAS chapter II-2* (circular MSC-MEPC.2/Circ.18).

2 Samples taken in accordance with the *2019 Guidelines for on board sampling for the verification of the sulphur content of the fuel oil used on board ships* (MEPC.1/Circ.864/Rev.1).

3 Refer to the *2020 Guidelines for on board sampling of fuel oil intended to be used or carried for use on board a ship* (MEPC.1/Circ.889).

4 The laboratory is to be accredited to ISO/IEC 17025:2017 or an equivalent standard for the performance of the given sulphur content test ISO 8754:2003.

2.3 If the seal of the sample as received has not been broken, the laboratory shall proceed with the verification procedure and shall:

.1 unseal the sample;

.2 ensure that the sample is thoroughly homogenized;

.3 draw two subsamples from the sample; and

.4 reseal the sample and record the new reseal details on the test record.

2.4 The two subsamples shall be tested in succession, in accordance with the specified test method referred to in regulation 2.1.30 of this Annex. For the purposes of this Part 1 verification procedure, the results of the test analysis shall be referred to as '1A' and '1B':

.1 results 1A and 1B shall be recorded on the test record in accordance with the requirements of the test method; and

.2 if the results of 1A and 1B are within the repeatability (r)[5] of the test method, the results shall be considered valid; or

.3 if the results 1A and 1B are not within the repeatability (r) of the test method, both results shall be rejected and two new subsamples shall be taken by the laboratory and tested. The sample bottle shall be resealed in accordance with paragraph 2.3.4 after the new subsamples have been taken;

.4 in the case of two failures to achieve repeatability between 1A and 1B, the cause of that failure shall be investigated by the laboratory and resolved before further testing of the sample is undertaken. On resolution of that repeatability issue, two new subsamples shall be taken in accordance with paragraph 2.3. The sample shall be resealed in accordance with paragraph 2.3.4 after the new subsamples have been taken.

2.5 If the test results of 1A and 1B are valid, an average of these two results shall be calculated. The average value shall be referred to as 'X' and shall be recorded on the test record:

.1 if the result X is equal to or less than the applicable limit required by regulation 14, the fuel oil shall be considered to have met the requirement; or

.2 if the result X is greater than the applicable limit required by regulation 14, the fuel oil shall be considered to have not met the requirement.

[5] Repeatability (r) calculation in accordance with ISO 4259:2017-2 and as defined in the test method used.

Table 1: Summary of Part 1 MARPOL delivered sample procedure

On the basis of the test method referred to in regulation 2.1.30 of this Annex		
Applicable limit % m/m: V	Result 2.5.1: X ≤ V	Result 2.5.2: X > V
0.10	Met the requirement	Not met the requirement
0.50		
	Result X reported to 2 decimal places	

2.6 The final results obtained from this verification procedure shall be evaluated by the competent authority.

2.7 The laboratory shall provide a copy of the test record to the competent authority managing the verification procedure.

Part 2 – In-use and onboard samples

3 General requirements

3.1 The in-use or onboard sample, as appropriate, shall be used to verify the sulphur content of the fuel oil as represented by that sample of fuel oil at the point of sampling.

3.2 A Party, through its competent authority, shall manage the verification procedure.

3.3 A laboratory undertaking the sulphur testing procedure given in this appendix shall have valid accreditation[6] in respect of the test method to be used.

4 Verification procedure Part 2

4.1 The in-use or onboard sample shall be conveyed by the competent authority to the laboratory.

4.2 The laboratory shall:

.1 record the details of the seal number and the sample label on the test record;

.2 record the condition of the seal of the sample as received on the test record; and

.3 reject any sample where the seal has been broken prior to receipt and record that rejection on the test record.

4.3 If the seal of the sample as received has not been broken, the laboratory shall proceed with the verification procedure and shall:

.1 unseal the sample;

.2 ensure that the sample is thoroughly homogenized;

6 The laboratory is to be accredited to ISO/IEC 17025:2017 or an equivalent standard for the performance of the given sulphur content test ISO 8754:2003.

.3 draw two subsamples from the sample; and

.4 reseal the sample and record the new reseal details on the test record.

4.4 The two subsamples shall be tested in succession, in accordance with the specified test method referred to in regulation 2.1.30 of this Annex. For the purposes of this Part 2 verification procedure, the results obtained shall be referred to as '2A' and '2B':

.1 results 2A and 2B shall be recorded on the test record in accordance with the requirements of the test method; and

.2 if the results of 2A and 2B are within the repeatability (r)[7] of the test method, the results shall be considered valid; or

.3 if the results of 2A and 2B are not within the repeatability (r) of the test method, both results shall be rejected and two new subsamples shall be taken by the laboratory and tested. The sample bottle shall be resealed in accordance with paragraph 4.3.4 after the new subsamples have been taken; and

.4 in the case of two failures to achieve repeatability between 2A and 2B, the cause of that failure shall be investigated by the laboratory and resolved before further testing of the sample is undertaken. On resolution of that repeatability issue, two new subsamples shall be taken in accordance with paragraph 4.3. The sample shall be resealed in accordance with paragraph 4.3.4 after the new subsamples have been taken.

4.5 If the test results of 2A and 2B are valid, an average of these two results shall be calculated. That average value shall be referred to as 'Z' and shall be recorded on the test record:

.1 if Z is equal to or less than the applicable limit required by regulation 14, the sulphur content of the fuel oil as represented by the tested sample shall be considered to have met the requirement;

.2 if Z is greater than the applicable limit required by regulation 14 but less than or equal to that applicable limit + 0.59R (where R is the reproducibility of the test method),[8] the sulphur content of the fuel oil as represented by the tested sample shall be considered to have met the requirement; or

.3 if Z is greater than the applicable limit required by regulation 14 + 0.59R, the sulphur content of the fuel oil as represented by the tested sample shall be considered to have not met the requirement.

[7] Repeatability (r) calculation in accordance with ISO 4259:2017-2 and as defined in the test method used.

[8] Reproducibility (R) calculation in accordance with ISO 4259:2017-2 and as defined in the test method used.

Table 2: Summary of in-use or onboard sample procedure[9]

On the basis of the test method referred to in regulation 2.1.30 of this Annex				
Applicable limit %m/m: V	Test margin value: W	Result 4.5.1: Z ≤ V	Result 4.5.2: V < Z ≤ W	Result 4.5.3: Z > W
0.10	0.11	Met the requirement	Met the requirement	Not met the requirement
0.50	0.53			
		Result Z reported to 2 decimal places		

4.6 The final results obtained from this verification procedure shall be evaluated by the competent authority.

4.7 The laboratory shall provide a copy of the test record to the competent authority managing the verification procedure.

[9] Results of testing undertaken by the company or other entities are outside the MARPOL process and hence should be considered within the approach given by ISO 4259:2017-2 regarding recipient drawn samples.

Appendix VII

Emission control areas (regulations 13.6 and 14.3)

1 The boundaries of emission control areas designated under regulations 13.6 and 14.3, other than the Baltic Sea, the North Sea, and the Norwegian Sea areas, are set forth in this appendix.

2 The North American area comprises:

.1 the sea area located off the Pacific coasts of the United States and Canada, enclosed by geodesic lines connecting the following coordinates:

Point	Latitude	Longitude
1	32°32′.10 N	117°06′.11 W
2	32°32′.04 N	117°07′.29 W
3	32°31′.39 N	117°14′.20 W
4	32°33′.13 N	117°15′.50 W
5	32°34′.21 N	117°22′.01 W
6	32°35′.23 N	117°27′.53 W
7	32°37′.38 N	117°49′.34 W
8	31°07′.59 N	118°36′.21 W
9	30°33′.25 N	121°47′.29 W
10	31°46′.11 N	123°17′.22 W
11	32°21′.58 N	123°50′.44 W
12	32°56′.39 N	124°11′.47 W
13	33°40′.12 N	124°27′.15 W
14	34°31′.28 N	125°16′.52 W
15	35°14′.38 N	125°43′.23 W
16	35°44′.00 N	126°18′.53 W
17	36°16′.25 N	126°45′.30 W
18	37°01′.35 N	127°07′.18 W
19	37°45′.39 N	127°38′.02 W
20	38°25′.08 N	127°53′.00 W
21	39°25′.05 N	128°31′.23 W
22	40°18′.47 N	128°45′.46 W
23	41°13′.39 N	128°40′.22 W
24	42°12′.49 N	129°00′.38 W
25	42°47′.34 N	129°05′.42 W
26	43°26′.22 N	129°01′.26 W
27	44°24′.43 N	128°41′.23 W
28	45°30′.43 N	128°40′.02 W
29	46°11′.01 N	128°49′.01 W
30	46°33′.55 N	129°04′.29 W
31	47°39′.55 N	131°15′.41 W

Point	Latitude	Longitude
32	48°32′.32 N	132°41′.00 W
33	48°57′.47 N	133°14′.47 W
34	49°22′.39 N	134°15′.51 W
35	50°01′.52 N	135°19′.01 W
36	51°03′.18 N	136°45′.45 W
37	51°54′.04 N	137°41′.54 W
38	52°45′.12 N	138°20′.14 W
39	53°29′.20 N	138°40′.36 W
40	53°40′.39 N	138°48′.53 W
41	54°13′.45 N	139°32′.38 W
42	54°39′.25 N	139°56′.19 W
43	55°20′.18 N	140°55′.45 W
44	56°07′.12 N	141°36′.18 W
45	56°28′.32 N	142°17′.19 W
46	56°37′.19 N	142°48′.57 W
47	58°51′.04 N	153°15′.03 W

.2 the sea areas located off the Atlantic coasts of the United States, Canada and France (Saint- Pierre-et-Miquelon), and the Gulf of Mexico coast of the United States enclosed by geodesic lines connecting the following coordinates:

Point	Latitude	Longitude
1	60°00′.00 N	64°09′.36 W
2	60°00′.00 N	56°43′.00 W
3	58°54′.01 N	55°38′.05 W
4	57°50′.52 N	55°03′.47 W
5	57°35′.13 N	54°00′.59 W
6	57°14′.20 N	53°07′.58 W
7	56°48′.09 N	52°23′.29 W
8	56°18′.13 N	51°49′.42 W
9	54°23′.21 N	50°17′.44 W
10	53°44′.54 N	50°07′.17 W
11	53°04′.59 N	50°10′.05 W
12	52°20′.06 N	49°57′.09 W
13	51°34′.20 N	48°52′.45 W
14	50°40′.15 N	48°16′.04 W
15	50°02′.28 N	48°07′.03 W
16	49°24′.03 N	48°09′.35 W
17	48°39′.22 N	47°55′.17 W
18	47°24′.25 N	47°46′.56 W
19	46°35′.12 N	48°00′.54 W

Point	Latitude	Longitude
20	45°19′.45 N	48°43′.28 W
21	44°43′.38 N	49°16′.50 W
22	44°16′.38 N	49°51′.23 W
23	43°53′.15 N	50°34′.01 W
24	43°36′.06 N	51°20′.41 W
25	43°23′.59 N	52°17′.22 W
26	43°19′.50 N	53°20′.13 W
27	43°21′.14 N	54°09′.20 W
28	43°29′.41 N	55°07′.41 W
29	42°40′.12 N	55°31′.44 W
30	41°58′.19 N	56°09′.34 W
31	41°20′.21 N	57°05′.13 W
32	40°55′.34 N	58°02′.55 W
33	40°41′.38 N	59°05′.18 W
34	40°38′.33 N	60°12′.20 W
35	40°45′.46 N	61°14′.03 W
36	41°04′.52 N	62°17′.49 W
37	40°36′.55 N	63°10′.49 W
38	40°17′.32 N	64°08′.37 W
39	40°07′.46 N	64°59′.31 W
40	40°05′.44 N	65°53′.07 W
41	39°58′.05 N	65°59′.51 W
42	39°28′.24 N	66°21′.14 W
43	39°01′.54 N	66°48′.33 W
44	38°39′.16 N	67°20′.59 W
45	38°19′.20 N	68°02′.01 W
46	38°05′.29 N	68°46′.55 W
47	37°58′.14 N	69°34′.07 W
48	37°57′.47 N	70°24′.09 W
49	37°52′.46 N	70°37′.50 W
50	37°18′.37 N	71°08′.33 W
51	36°32′.25 N	71°33′.59 W
52	35°34′.58 N	71°26′.02 W
53	34°33′.10 N	71°37′.04 W
54	33°54′.49 N	71°52′.35 W
55	33°19′.23 N	72°17′.12 W
56	32°45′.31 N	72°54′.05 W
57	31°55′.13 N	74°12′.02 W
58	31°27′.14 N	75°15′.20 W
59	31°03′.16 N	75°51′.18 W
60	30°45′.42 N	76°31′.38 W

Point	Latitude	Longitude
61	30°12′.48 N	77°18′.29 W
62	29°25′.17 N	76°56′.42 W
63	28°36′.59 N	76°48′.00 W
64	28°17′.13 N	76°40′.10 W
65	28°17′.12 N	79°11′.23 W
66	27°52′.56 N	79°28′.35 W
67	27°26′.01 N	79°31′.38 W
68	27°16′.13 N	79°34′.18 W
69	27°11′.54 N	79°34′.56 W
70	27°05′.59 N	79°35′.19 W
71	27°00′.28 N	79°35′.17 W
72	26°55′.16 N	79°34′.39 W
73	26°53′.58 N	79°34′.27 W
74	26°45′.46 N	79°32′.41 W
75	26°44′.30 N	79°32′.23 W
76	26°43′.40 N	79°32′.20 W
77	26°41′.12 N	79°32′.01 W
78	26°38′.13 N	79°31′.32 W
79	26°36′.30 N	79°31′.06 W
80	26°35′.21 N	79°30′.50 W
81	26°34′.51 N	79°30′.46 W
82	26°34′.11 N	79°30′.38 W
83	26°31′.12 N	79°30′.15 W
84	26°29′.05 N	79°29′.53 W
85	26°25′.31 N	79°29′.58 W
86	26°23′.29 N	79°29′.55 W
87	26°23′.21 N	79°29′.54 W
88	26°18′.57 N	79°31′.55 W
89	26°15′.26 N	79°33′.17 W
90	26°15′.13 N	79°33′.23 W
91	26°08′.09 N	79°35′.53 W
92	26°07′.47 N	79°36′.09 W
93	26°06′.59 N	79°36′.35 W
94	26°02′.52 N	79°38′.22 W
95	25°59′.30 N	79°40′.03 W
96	25°59′.16 N	79°40′.08 W
97	25°57′.48 N	79°40′.38 W
98	25°56′.18 N	79°41′.06 W
99	25°54′.04 N	79°41′.38 W
100	25°53′.24 N	79°41′.46 W
101	25°51′.54 N	79°41′.59 W

Point	Latitude	Longitude
102	25°49′.33 N	79°42′.16 W
103	25°48′.24 N	79°42′.23 W
104	25°48′.20 N	79°42′.24 W
105	25°46′.26 N	79°42′.44 W
106	25°46′.16 N	79°42′.45 W
107	25°43′.40 N	79°42′.59 W
108	25°42′.31 N	79°42′.48 W
109	25°40′.37 N	79°42′.27 W
110	25°37′.24 N	79°42′.27 W
111	25°37′.08 N	79°42′.27 W
112	25°31′.03 N	79°42′.12 W
113	25°27′.59 N	79°42′.11 W
114	25°24′.04 N	79°42′.12 W
115	25°22′.21 N	79°42′.20 W
116	25°21′.29 N	79°42′.08 W
117	25°16′.52 N	79°41′.24 W
118	25°15′.57 N	79°41′.31 W
119	25°10′.39 N	79°41′.31 W
120	25°09′.51 N	79°41′.36 W
121	25°09′.03 N	79°41′.45 W
122	25°03′.55 N	79°42′.29 W
123	25°03′.00 N	79°42′.56 W
124	25°00′.30 N	79°44′.05 W
125	24°59′.03 N	79°44′.48 W
126	24°55′.28 N	79°45′.57 W
127	24°44′.18 N	79°49′.24 W
128	24°43′.04 N	79°49′.38 W
129	24°42′.36 N	79°50′.50 W
130	24°41′.47 N	79°52′.57 W
131	24°38′.32 N	79°59′.58 W
132	24°36′.27 N	80°03′.51 W
133	24°33′.18 N	80°12′.43 W
134	24°33′.05 N	80°13′.21 W
135	24°32′.13 N	80°15′.16 W
136	24°31′.27 N	80°16′.55 W
137	24°30′.57 N	80°17′.47 W
138	24°30′.14 N	80°19′.21 W
139	24°30′.06 N	80°19′.44 W
140	24°29′.38 N	80°21′.05 W
141	24°28′.18 N	80°24′.35 W
142	24°28′.06 N	80°25′.10 W

Point	Latitude	Longitude
143	24°27′.23 N	80°27′.20 W
144	24°26′.30 N	80°29′.30 W
145	24°25′.07 N	80°32′.22 W
146	24°23′.30 N	80°36′.09 W
147	24°22′.33 N	80°38′.56 W
148	24°22′.07 N	80°39′.51 W
149	24°19′.31 N	80°45′.21 W
150	24°19′.16 N	80°45′.47 W
151	24°18′.38 N	80°46′.49 W
152	24°18′.35 N	80°46′.54 W
153	24°09′.51 N	80°59′.47 W
154	24°09′.48 N	80°59′.51 W
155	24°08′.58 N	81°01′.07 W
156	24°08′.30 N	81°01′.51 W
157	24°08′.26 N	81°01′.57 W
158	24°07′.28 N	81°03′.06 W
159	24°02′.20 N	81°09′.05 W
160	24°00′.00 N	81°11′.16 W
161	23°55′.32 N	81°12′.55 W
162	23°53′.52 N	81°19′.43 W
163	23°50′.52 N	81°29′.59 W
164	23°50′.02 N	81°39′.59 W
165	23°49′.05 N	81°49′.59 W
166	23°49′.05 N	82°00′.11 W
167	23°49′.42 N	82°09′.59 W
168	23°51′.14 N	82°24′.59 W
169	23°51′.14 N	82°39′.59 W
170	23°49′.42 N	82°48′.53 W
171	23°49′.32 N	82°51′.11 W
172	23°49′.24 N	82°59′.59 W
173	23°49′.52 N	83°14′.59 W
174	23°51′.22 N	83°25′.49 W
175	23°52′.27 N	83°33′.01 W
176	23°54′.04 N	83°41′.35 W
177	23°55′.47 N	83°48′.11 W
178	23°58′.38 N	83°59′.59 W
179	24°09′.37 N	84°29′.27 W
180	24°13′.20 N	84°38′.39 W
181	24°16′.41 N	84°46′.07 W
182	24°23′.30 N	84°59′.59 W
183	24°26′.37 N	85°06′.19 W

Point	Latitude	Longitude
184	24°38′.57 N	85°31′.54 W
185	24°44′.17 N	85°43′.11 W
186	24°53′.57 N	85°59′.59 W
187	25°10′.44 N	86°30′.07 W
188	25°43′.15 N	86°21′.14 W
189	26°13′.13 N	86°06′.45 W
190	26°27′.22 N	86°13′.15 W
191	26°33′.46 N	86°37′.07 W
192	26°01′.24 N	87°29′.35 W
193	25°42′.25 N	88°33′.00 W
194	25°46′.54 N	90°29′.41 W
195	25°44′.39 N	90°47′.05 W
196	25°51′.43 N	91°52′.50 W
197	26°17′.44 N	93°03′.59 W
198	25°59′.55 N	93°33′.52 W
199	26°00′.32 N	95°39′.27 W
200	26°00′.33 N	96°48′.30 W
201	25°58′.32 N	96°55′.28 W
202	25°58′.15 N	96°58′.41 W
203	25°57′.58 N	97°01′.54 W
204	25°57′.41 N	97°05′.08 W
205	25°57′.24 N	97°08′.21 W
206	25°57′.24 N	97°08′.47 W

.3 the sea area located off the coasts of the Hawaiian Islands of Hawai'i, Maui, Oahu, Moloka'i, Ni'ihau, Kaua'i, Lana'i and Kaho'olawe, enclosed by geodesic lines connecting the following coordinates:

Point	Latitude	Longitude
1	22°32′.54 N	153°00′.33 W
2	23°06′.05 N	153°28′.36 W
3	23°32′.11 N	154°02′.12 W
4	23°51′.47 N	154°36′.48 W
5	24°21′.49 N	155°51′.13 W
6	24°41′.47 N	156°27′.27 W
7	24°57′.33 N	157°22′.17 W
8	25°13′.41 N	157°54′.13 W
9	25°25′.31 N	158°30′.36 W
10	25°31′.19 N	159°09′.47 W
11	25°30′.31 N	159°54′.21 W
12	25°21′.53 N	160°39′.53 W
13	25°00′.06 N	161°38′.33 W

Point	Latitude	Longitude
14	24°40′.49 N	162°13′.13 W
15	24°15′.53 N	162°43′.08 W
16	23°40′.50 N	163°13′.00 W
17	23°03′.20 N	163°32′.58 W
18	22°20′.09 N	163°44′.41 W
19	21°36′.45 N	163°46′.03 W
20	20°55′.26 N	163°37′.44 W
21	20°13′.34 N	163°19′.13 W
22	19°39′.03 N	162°53′.48 W
23	19°09′.43 N	162°20′.35 W
24	18°39′.16 N	161°19′.14 W
25	18°30′.31 N	160°38′.30 W
26	18°29′.31 N	159°56′.17 W
27	18°10′.41 N	159°14′.08 W
28	17°31′.17 N	158°56′.55 W
29	16°54′.06 N	158°30′.29 W
30	16°25′.49 N	157°59′.25 W
31	15°59′.57 N	157°17′.35 W
32	15°40′.37 N	156°21′.06 W
33	15°37′.36 N	155°22′.16 W
34	15°43′.46 N	154°46′.37 W
35	15°55′.32 N	154°13′.05 W
36	16°46′.27 N	152°49′.11 W
37	17°33′.42 N	152°00′.32 W
38	18°30′.16 N	151°30′.24 W
39	19°02′.47 N	151°22′.17 W
40	19°34′.46 N	151°19′.47 W
41	20°07′.42 N	151°22′.58 W
42	20°38′.43 N	151°31′.36 W
43	21°29′.09 N	151°59′.50 W
44	22°06′.58 N	152°31′.25 W
45	22°32′.54 N	153°00′.33 W

3 The United States Caribbean Sea area includes:

.1 the sea area located off the Atlantic and Caribbean coasts of the Commonwealth of Puerto Rico and the United States Virgin Islands, enclosed by geodesic lines connecting the following coordinates:

Point	Latitude	Longitude
1	17°18′.37 N	67°32′.14 W
2	19°11′.14 N	67°26′.45 W
3	19°30′.28 N	65°16′.48 W

Point	Latitude	Longitude
4	19°12′.25 N	65°06′.08 W
5	18°45′.13 N	65°00′.22 W
6	18°41′.14 N	64°59′.33 W
7	18°29′.22 N	64°53′.51 W
8	18°27′.35 N	64°53′.22 W
9	18°25′.21 N	64°52′.39 W
10	18°24′.30 N	64°52′.19 W
11	18°23′.51 N	64°51′.50 W
12	18°23′.42 N	64°51′.23 W
13	18°23′.36 N	64°50′.17 W
14	18°23′.48 N	64°49′.41 W
15	18°24′.11 N	64°49′.00 W
16	18°24′.28 N	64°47′.57 W
17	18°24′.18 N	64°47′.01 W
18	18°23′.13 N	64°46′.37 W
19	18°22′.37 N	64°45′.20 W
20	18°22′.39 N	64°44′.42 W
21	18°22′.42 N	64°44′.36 W
22	18°22′.37 N	64°44′.24 W
23	18°22′.39 N	64°43′.42 W
24	18°22′.30 N	64°43′.36 W
25	18°22′.25 N	64°42′.58 W
26	18°22′.26 N	64°42′.28 W
27	18°22′.15 N	64°42′.03 W
28	18°22′.22 N	64°40′.60 W
29	18°21′.57 N	64°40′.15 W
30	18°21′.51 N	64°38′.23 W
31	18°21′.22 N	64°38′.16 W
32	18°20′.39 N	64°38′.33 W
33	18°19′.15 N	64°38′.14 W
34	18°19′.07 N	64°38′.16 W
35	18°17′.23 N	64°39′.38 W
36	18°16′.43 N	64°39′.41 W
37	18°11′.33 N	64°38′.58 W
38	18°03′.02 N	64°38′.03 W
39	18°02′.56 N	64°29′.35 W
40	18°02′.51 N	64°27′.02 W
41	18°02′.30 N	64°21′.08 W
42	18°02′.31 N	64°20′.08 W
43	18°02′.03 N	64°15′.57 W
44	18°00′.12 N	64°02′.29 W
45	17°59′.58 N	64°01′.04 W
46	17°58′.47 N	63°57′.01 W

Point	Latitude	Longitude
47	17°57′.51 N	63°53′.54 W
48	17°56′.38 N	63°53′.21 W
49	17°39′.40 N	63°54′.53 W
50	17°37′.08 N	63°55′.10 W
51	17°30′.21 N	63°55′.56 W
52	17°11′.36 N	63°57′.57 W
53	17°05′.00 N	63°58′.41 W
54	16°59′.49 N	63°59′.18 W
55	17°18′.37 N	67°32′.14 W

4 In respect of the application of regulation 14.4, the Mediterranean Sea Emission Control Area for Sulphur Oxides and Particulate Matter includes all waters bounded by the coasts of Europe, Africa and Asia, and is described by the following coordinates:

.1 the western entrance of the Straits of Gibraltar, defined as a line joining the extremities of Cape Trafalgar, Spain (36°11'.00 N, 6°02'.00 W) and Cape Spartel, Morocco (35°48'.00 N, 5°55'.00 W);

.2 the Strait of Canakkale, defined as a line joining Mehmetcik Burnu (40°03'.00 N, 26°11'.00 E) and Kumkale Burnu (40°01'.00 N, 26°12'.00 E); and

.3 the northern entrance to the Suez Canal excluding the area enclosed by geodesic lines connecting points 1-4 with the following coordinates:

Point	Latitude	Longitude
1	31˚29'.00 N	32°16'.00 E
2	31˚29'.00 N	32°28'.48 E
3	31˚14'.00 N	32°32'.62 E
4	31˚14'.00 N	32°16'.00 E

5 The Canadian Arctic area comprises of two segments:

.1 starting at the Yukon mainland at 68°54'.00 N, 137°0'.00 W; following the coordinates listed below and ending at the north coast of Hans Island at 80°49'.91 N, 66°27'.40 W, connected by geodesic lines connecting the following coordinates in World Geodetic System 1984 (WGS84) datum:

Point	Latitude	Longitude
1	68°54'.00 N	137°00'.00 W
2	72°56'.58 N	137°00'.00 W
3	73°00'.42 N	136°21'.72 W
4	73°21'.72 N	136°20'.46 W
5	73°56'.34 N	136°57'.60 W
6	74°30'.18 N	137°13'.08 W
7	75°03'.42 N	137°07'.20 W
8	75°49'.26 N	136°32'.04 W

Point	Latitude	Longitude
9	76°42'.18 N	136°57'.06 W
10	77°28'.26 N	136°34'.74 W
11	78°07'.26 N	135°28'.50 W
12	78°39'.72 N	133°44'.88 W
13	79°29'.58 N	131°24'.96 W
14	79°53'.16 N	129°32'.22 W
15	80°31'.44 N	127°33'.48 W
16	81°54'.36 N	118°36'.24 W
17	82°16'.32 N	116°28'.98 W
18	82°52'.86 N	115°29'.46 W
19	83°54'.54 N	112°07'.20 W
20	85°46'.14 N	97°16'.86 W
21	86°09'.78 N	89°14'.46 W
22	86°22'.56 N	78°59'.58 W
23	86°19'.18 N	60°10'.17 W
24	85°38'.92 N	58°10'.58 W
25	85°22'.29 N	57°59'.22 W
26	85°12'.04 N	57°54'.68 W
27	84°49'.56 N	57°13'.28 W
28	84°22'.15 N	56°43'.09 W
29	84°17'.32 N	56°35'.78 W
30	84°11'.05 N	56°29'.53 W
31	83°10'.79 N	57°00'.21 W
32	83°04'.29 N	57°27'.78 W
33	83°00'.95 N	57°32'.72 W
34	82°44'.71 N	58°00'.38 W
35	82°42'.57 N	58°06'.78 W
36	82°40'.69 N	58°11'.74 W
37	82°34'.95 N	58°25'.30 W
38	82°31'.25 N	58°38'.56 W
39	82°27'.52 N	58°50'.12 W
40	82°22'.87 N	59°02'.00 W
41	82°20'.26 N	59°21'.38 W
42	82°18'.54 N	59°32'.25 W
43	82°17'.22 N	59°41'.31 W
44	82°14'.41 N	59°56'.06 W
45	82°12'.06 N	60°02'.23 W
46	81°51'.67 N	62°09'.60 W
47	81°17'.89 N	64°08'.73 W
48	80°50'.48 N	66°15'.33 W
49	80°50'.10 N	66°26'.97 W
50	80°49'.91 N	66°27'.40 W

.2 continuing from the south coast of Hans Island at 80°49'.29 N, 66°27'.04 W, following the coordinates listed below, and ending at the coast of Newfoundland and Labrador at 60°0'.00 N, 64°9'.60 W, connected by geodesic lines connecting the following coordinates in World Geodetic System 1984 (WGS84) datum:

Point	Latitude	Longitude
51	80°49'.29 N	66°27'.04 W
52	80°49'.19 N	66°26'.57 W
53	80°45'.43 N	67°03'.99 W
54	80°26'.16 N	68°14'.39 W
55	80°01'.79 N	68°46'.99 W
56	79°40'.38 N	69°04'.68 W
57	78°48'.09 N	72°52'.36 W
58	78°25'.05 N	73°45'.66 W
59	77°30'.83 N	74°38'.24 W
60	76°43'.47 N	74°56'.49 W
61	75°00'.00 N	73°16'.07 W
62	74°50'.67 N	73°02'.71 W
63	74°44'.20 N	72°52'.86 W
64	74°28'.67 N	71°45'.72 W
65	74°24'.02 N	71°25'.67 W
66	74°12'.42 N	70°33'.06 W
67	74°10'.03 N	70°23'.12 W
68	74°07'.50 N	70°12'.16 W
69	74°06'.15 N	70°06'.69 W
70	74°02'.53 N	69°51'.43 W
71	74°02'.25 N	69°50'.33 W
72	73°57'.54 N	69°31'.02 W
73	73°52'.27 N	69°10'.88 W
74	73°46'.73 N	68°51'.14 W
75	73°46'.17 N	68°48'.81 W
76	73°41'.77 N	68°29'.65 W
77	73°37'.91 N	68°12'.34 W
78	73°36'.51 N	68°05'.42 W
79	73°31'.14 N	67°15'.52 W
80	73°25'.90 N	66°24'.99 W
81	73°18'.48 N	66°07'.91 W
82	72°50'.89 N	65°07'.52 W
83	72°47'.70 N	65°00'.63 W
84	72°45'.76 N	64°58'.22 W
85	72°43'.78 N	64°54'.27 W
86	72°36'.40 N	64°38'.74 W
87	72°30'.58 N	64°26'.04 W
88	72°24'.89 N	64°13'.11 W
89	72°10'.96 N	63°40'.55 W
90	72°06'.33 N	63°30'.42 W
91	72°01'.65 N	63°20'.73 W

Point	Latitude	Longitude
92	71°52'.98 N	63°03'.86 W
93	71°47'.21 N	62°52'.67 W
94	71°44'.71 N	62°49'.41 W
95	71°32'.90 N	62°33'.35 W
96	71°31'.73 N	62°31'.66 W
97	71°29'.39 N	62°28'.99 W
98	71°25'.93 N	62°25'.37 W
99	71°18'.98 N	62°17'.45 W
100	71°12'.10 N	62°08'.98 W
101	70°51'.84 N	61°42'.53 W
102	70°48'.17 N	61°37'.62 W
103	70°35'.55 N	61°20'.28 W
104	70°33'.07 N	61°17'.10 W
105	70°13'.48 N	61°10'.49 W
106	70°08'.83 N	61°08'.67 W
107	70°07'.55 N	61°07'.92 W
108	70°01'.68 N	61°04'.08 W
109	69°55'.82 N	60°59'.85 W
110	69°55'.27 N	60°59'.41 W
111	69°49'.82 N	60°57'.99 W
112	69°29'.41 N	60°51'.36 W
113	69°12'.82 N	60°27'.40 W
114	69°10'.24 N	60°23'.47 W
115	69°06'.79 N	60°18'.33 W
116	69°00'.88 N	60°08'.99 W
117	68°56'.83 N	60°02'.21 W
118	68°38'.02 N	59°14'.43 W
119	68°37'.86 N	59°14'.01 W
120	68°34'.02 N	59°04'.46 W
121	68°32'.88 N	59°01'.49 W
122	68°25'.25 N	58°42'.06 W
123	68°21'.67 N	58°38'.64 W
124	68°16'.07 N	58°33'.75 W
125	68°07'.40 N	58°26'.93 W
126	68°06'.87 N	58°26'.58 W
127	68°04'.26 N	58°24'.69 W
128	68°01'.89 N	58°23'.15 W
129	67°56'.94 N	58°19'.62 W
130	67°44'.25 N	58°9'.79 W
131	67°39'.77 N	58°06'.05 W
132	67°35'.33 N	58°02'.07 W
133	67°30'.76 N	57°57'.66 W
134	67°29'.16 N	57°56'.00 W
135	67°28'.21 N	57°55'.01 W

Point	Latitude	Longitude
136	67°27'.27 N	57°54'.57 W
137	67°21'.52 N	57°52'.35 W
138	66°49'.47 N	57°42'.84 W
139	66°41'.71 N	57°40'.35 W
140	66°37'.88 N	57°39'.45 W
141	66°36'.02 N	57°38'.99 W
142	66°30'.27 N	57°38'.04 W
143	66°24'.50 N	57°37'.56 W
144	66°18'.68 N	57°37'.55 W
145	66°12'.84 N	57°38'.01 W
146	66°03'.50 N	57°39'.45 W
147	65°57'.62 N	57°39'.93 W
148	65°57'.50 N	57°39'.93 W
149	65°51'.75 N	57°40'.44 W
150	65°50'.81 N	57°40'.46 W
151	65°37'.59 N	57°41'.74 W
152	65°34'.74 N	57°42'.18 W
153	65°23'.33 N	57°44'.83 W
154	65°18'.08 N	57°45'.70 W
155	65°14'.52 N	57°44'.99 W
156	65°11'.49 N	57°44'.22 W
157	65°08'.79 N	57°43'.69 W
158	65°06'.04 N	57°43'.95 W
159	64°12'.06 N	57°48'.09 W
160	64°04'.20 N	57°49'.01 W
161	63°57'.36 N	57°53'.40 W
162	63°52'.57 N	57°56'.46 W
163	63°50'.05 N	57°57'.01 W
164	63°43'.99 N	57°58'.60 W
165	63°37'.16 N	58°01'.00 W
166	63°35'.02 N	58°01'.86 W
167	63°28'.62 N	57°59'.62 W
168	63°22'.86 N	57°57'.29 W
169	62°47'.14 N	57°40'.83 W
170	62°11'.35 N	57°25'.12 W
171	62°03'.47 N	57°22'.15 W
172	62°02'.23 N	57°21'.62 W
173	62°00'.39 N	57°20'.92 W
174	61°24'.74 N	57°16'.16 W
175	61°10'.14 N	57°38'.70 W
176	60°43'.56 N	57°17'.64 W
177	60°15'.36 N	57°04'.56 W
178	60°00'.00 N	56°43'.02 W
179	60°00'.00 N	64°09'.60 W

6 The North-East Atlantic Emission Control Area (NE Atlantic ECA) encompasses the Exclusive Economic Zones (EEZ) and territorial seas, extending up to 200 nautical miles from the baselines of Greenland, Iceland, the Faroes, Ireland, the mainlands of the United Kingdom, France, Spain and Portugal. This designation excludes the seas bounded by the North Sea area, as defined in regulation 1.14.6 of Annex V of the present Convention.

7 The geographic outer boundaries of the NE Atlantic ECA are delineated by a series of geodetic lines connecting specified coordinates of latitude and longitude. These coordinates are referenced to the World Geodetic System 1984 (WGS 1984) datum and are presented in a clockwise order, as outlined below:

.1 The northernmost outer boundary of the NE Atlantic ECA begins at the point of intersection of the EEZ of Greenland and the Canadian Arctic area, as outlined in regulation 14.3 and appendix VII of MARPOL Annex VI, at the coordinate **86°19'.18 N, 60°10'.17 W**. From this point, the boundary extends eastward, following the outer boundaries of the EEZs of Iceland, the Faroes, and the eastern part of the mainland of the United Kingdom, until reaching the coordinate **62°00'.00 N, 01°22'.27 E**, where it intersects with the northern boundary of the North Sea area. The boundary of this section is defined by connecting the following coordinates in sequential order:

Point	Latitude	Longitude
1	86°19'.30 N	60°10'.28 W
2	86°57'.80 N	37°45'.68 W
3	86°39'.87 N	12°26'.95 W
4	85°37'.64 N	01°00'.60 E
5	83°42'.56 N	07°58'.17 E
6	82°20'.92 N	05°51'.60 E
7	79°52'.93 N	01°38'.37 W
8	78°19'.00 N	03°20'.63 W
9	76°59'.35 N	02°49'.70 W
10	76°03'.97 N	04°27'.87 W
11	75°18'.13 N	04°17'.90 W
12	74°30'.64 N	04°50'.57 W
13	72°49'.62 N	11°28'.77 W

Point	Latitude	Longitude
14	71°52'.99 N	12°46'.03 W
15	69°54'.98 N	13°37'.77 W
16	69°35'.00 N	13°16'.00 W
17	69°34'.77 N	12°24'.42 W
18	69°09'.46 N	09°42'.43 W
19	68°20'.93 N	07°34'.34 W
20	67°30'.09 N	06°32'.60 W
21	66°24'.66 N	05°45'.14 W
22	65°41'.60 N	05°34'.40 W
23	65°15'.62 N	02°38'.26 W
24	64°26'.05 N	00°29'.18 W
25	63°53'.25 N	00°29'.33 W
26	62°00'.00 N	01°22'.27 E

.2 Continuing from the coordinate 62°00'.00 N, 01°22'.27 E, the boundary proceeds along the northwestern outer limits of the North Sea area, as defined in regulation 1.14.6 of Annex V of the present Convention. The boundary excludes the area south of latitude 62°00'.00 N and east of longitude 04°00'.00 W, connecting the following coordinates:

Point	Latitude	Longitude
26	62°00'.00 N	01°22'.27 E
27	62°00'.00 N	04°00'.00 W
28	58°33'.94 N	04°00'.00 W

.3 Continuing southward, the boundary follows the southwestern outer limits of the North Sea area, as defined in regulation 1.14.6 of Annex V of the present Convention, excluding the English Channel and its approaches eastward of longitude 05°00'.00 W and northward of latitude 48°30'.00 N, until the boundary reaches its southernmost coordinate at 48°30'.00 N, 05°00'.00 W.

Point	Latitude	Longitude
29	48°30'.00 N	05°00'.00 W

.4 The following section of the NE Atlantic ECA extends southward from the coordinate 48°30'.00 N, 05°00'.00 W, until it reaches the intersection of two boundaries: the line joining Cape Trafalgar, Spain (36°11'.00 N, 06°02'.00 W), and Cape Spartel, Morocco (35°48'.00 N, 05°55'.00 W), as outlined in regulation 14.3 and this appendix; and the eastern outer limit of Spain's mainland EEZ at the coordinate 35°57'.59 N, 05°58'.27 W. This section of the NE Atlantic ECA encompasses the waters within the EEZ and territorial seas of the mainland territories of France, Portugal, and Spain. The area is bounded to the east by the coasts of these countries and to the west by the outer limits of their respective EEZ. The coordinates defining the outer limits, extending from the southernmost points northward, are as follows:

Point	Latitude	Longitude
30	35°57'.59 N	05°58'.27 W
31	35°57'.88 N	06°02'.14 W
32	35°57'.94 N	06°03'.00 W
33	35°57'.98 N	06°03'.48 W
34	35°58'.09 N	06°04'.90 W
35	35°55'.91 N	06°16'.72 W
36	35°54'.85 N	06°22'.58 W
37	35°54'.63 N	06°23'.83 W

Point	Latitude	Longitude
38	35°53'.50 N	06°30'.25 W
39	35°53'.34 N	06°31'.23 W
40	35°52'.13 N	06°38'.74 W
41	35°51'.94 N	06°39'.54 W
42	35°49'.70 N	06°48'.66 W
43	35°49'.60 N	06°49'.22 W
44	35°49'.18 N	06°51'.55 W
45	35°48'.61 N	06°59'.14 W

Point	Latitude	Longitude
46	35°48'.51 N	06°59'.81 W
47	35°47'.62 N	07°06'.03 W
48	35°46'.01 N	07°31'.75 W
49	35°46'.00 N	07°32'.00 W
50	35°26'.00 N	08°05'.00 W
51	35°19'.00 N	08°21'.00 W
52	35°11'.00 N	08°53'.00 W
53	35°07'.00 N	09°13'.00 W
54	35°01'.00 N	10°30'.00 W
55	34°55'.00 N	11°40'.00 W
56	34°57'.00 N	12°17'.00 W
57	37°00'.00 N	13°09'.00 W
58	38°10'.00 N	13°42'.00 W
59	38°43'.00 N	13°46'.00 W
60	41°09'.00 N	13°16'.00 W
61	41°23'.77 N	13°18'.00 W
62	41°24'.03 N	13°17'.61 W
63	41°24'.04 N	13°17'.61 W
64	41°28'.00 N	13°18'.00 W
65	41°29'.12 N	13°19'.54 W
66	41°30'.12 N	13°20'.50 W
67	41°30'.99 N	13°21'.34 W
68	41°35'.55 N	13°25'.32 W
69	41°44'.00 N	13°30'.10 W
70	41°54'.17 N	13°35'.21 W
71	42°04'.57 N	13°39'.38 W
72	42°15'.70 N	13°43'.28 W

Point	Latitude	Longitude
73	42°24'.69 N	13°45'.77 W
74	42°31'.79 N	13°47'.34 W
75	42°39'.44 N	13°48'.60 W
76	42°52'.53 N	13°50'.12 W
77	43°00'.67 N	13°50'.66 W
78	43°09'.85 N	13°50'.86 W
79	43°18'.03 N	13°50'.54 W
80	43°27'.44 N	13°49'.62 W
81	43°41'.45 N	13°47'.12 W
82	43°57'.73 N	13°42'.42 W
83	44°10'.36 N	13°37'.36 W
84	44°20'.93 N	13°32'.09 W
85	44°25'.70 N	13°29'.41 W
86	44°33'.99 N	13°24'.15 W
87	44°43'.13 N	13°17'.74 W
88	44°55'.81 N	13°08'.03 W
89	45°01'.23 N	13°03'.33 W
90	45°01'.37 N	13°03'.21 W
91	45°07'.52 N	12°57'.42 W
92	45°14'.79 N	12°49'.94 W
93	45°22'.20 N	12°41'.48 W
94	45°29'.33 N	12°32'.60 W
95	45°35'.60 N	12°23'.73 W
96	45°43'.59 N	12°11'.30 W
97	45°50'.60 N	11°59'.37 W
98	46°02'.77 N	11°37'.11 W
99	46°08'.97 N	11°24'.71 W

Point	Latitude	Longitude
100	46°15'.55 N	11°09'.69 W
101	46°21'.12 N	10°55'.44 W
102	46°25'.27 N	10°47'.40 W
103	46°29'.31 N	10°39'.08 W
104	46°32'.75 N	10°31'.66 W
105	46°37'.94 N	10°19'.19 W

Point	Latitude	Longitude
106	46°42'.62 N	10°06'.98 W
107	46°45'.83 N	09°58'.26 W
108	46°48'.86 N	09°48'.96 W
109	46°52'.16 N	09°37'.92 W
110	46°52'.73 N	09°35'.99 W

.5 Continuing from the coordinate 46°52'.73 N, 09°35'.99 W, the boundary proceeds in a northern direction, following the western outer limits of the EEZ of the mainland of the United Kingdom, Ireland, Iceland, the Faroes, and Greenland, until it reaches the southernmost intersection of the EEZ of Greenland and the Canadian Arctic ECA, at the coordinate 61°24'.74 N, 57°16'.16 W, as detailed in regulation 14.3 and this appendix. The coordinates for this section are as follows:

Point	Latitude	Longitude
111	48°10'.49 N	10°48'.56 W
112	48° 10.811' N	10° 48.562' W
113	48° 36.377' N	12° 36.484' W
114	49° 12.414' N	13° 56.755' W
115	49° 41.425' N	14° 39.118' W
116	50° 07.692' N	15° 08.259' W
117	50° 34.072' N	15° 29.322' W
118	51° 17.55' N	15° 54.73' W
119	51° 43.994' N	16° 02.877' W
120	52° 11.469' N	16° 05.45' W
121	52° 41.538' N	16° 01.852' W
122	53° 10.974' N	15° 50.662' W
123	54° 05.164' N	16° 00.588' W
124	54° 45.403' N	15° 55.823' W
125	55° 13.087' N	15° 43.866' W
126	55° 38.987' N	15° 25.217' W
127	56° 12.209' N	14° 50.963' W
128	56° 34.631' N	14° 19.862' W
129	56°57'.19 N	14°36'.16 W
130	57°25'.36 N	14°48'.11 W
131	57°46'.48 N	14°52'.42 W
132	58°10'.58 N	14°52'.18 W
133	58°37'.54 N	14°47'.13 W

Point	Latitude	Longitude
134	59°08'.50 N	14°29'.17 W
135	59°36'.59 N	14°03'.25 W
136	59°55'.59 N	13°37'.56 W
137	60°09'.13 N	13°16'.39 W
138	60°42'.23 N	14°00'.03 W
139	60°09'.28 N	17°03'.21 W
140	59°58'.44 N	20°22'.34 W
141	60°03'.00 N	22°08'.29 W
142	60°31'.10 N	25°30'.33 W
143	60°55'.19 N	27°17'.15 W
144	61°31'.52 N	28°48'.06 W
145	62°14'.11 N	29°52'.18 W
146	63°18'.12 N	30°52'.05 W
147	62°30'.13 N	33°39'.15 W
148	61°24'.86 N	35°02'.45 W
149	58°10'.71 N	37°39'.21 W
150	57°12'.46 N	39°29'.13 W
151	56°31'.75 N	42°11'.97 W
152	56°23'.72 N	44°27'.68 W
153	56°42'.83 N	47°08'.20 W
154	57°52'.48 N	51°48'.36 W
155	58°41'.66 N	53°40'.40 W
156	61°24'.74 N	57°16'.16 W

.6 Continuing along the common points between the EEZ of Greenland and the Canadian Arctic ECA until reaching the northernmost outer boundary of the NE Atlantic ECA at the intersection of the EEZ of Greenland and the Canadian Arctic ECA (Point 1), at the coordinates 86°19'.18 N, 60°10'.17 W. The coordinates for this section are as follows:

Point	Latitude	Longitude
157	63°35'.00 N	58°02'.00 W
158	66°37'.15 N	57°39'.10 W
159	67°27'.05 N	57°54'.15 W
160	68°25'.05 N	58°42'.07 W
161	69°29'.06 N	60°51'.10 W
162	70°33'.02 N	61°17'.06 W
163	72°06'.07 N	63°30'.15 W
164	73°25'.15 N	66°25'.05 W
165	74°44'.03 N	72°53'.00 W
166	76°41'.06 N	75°00'.00 W
167	77°30'.00 N	74°46'.00 W
168	78°48'.08 N	73°00'.00 W
169	79°39'.00 N	69°20'.00 W
170	80°25'.00 N	68°20'.00 W
171	80°45'.00 N	67°07'.12 W
172	82°24'.83 N	58°59'.72 W
173	83°35'.80 N	56°51'.48 W
174	84°21'.79 N	56°28'.88 W
175	85°50'.08 N	57°57'.22 W

Appendix VIII

Form of International Energy Efficiency (IEE) Certificate (regulation 8.2)

INTERNATIONAL ENERGY EFFICIENCY CERTIFICATE

Issued under the provisions of the Protocol of 1997, as amended, to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred to as "the Convention") under the authority of the Government of:

.....
(full designation of the country)

by .....
(full designation of the competent person or organization authorized under the provisions of the Convention)

Particulars of ship[1]

Name of ship .....

Distinctive number or letters .....

Port of registry .....

Gross tonnage .....

IMO number[2] .....

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with regulation 5.4 of Annex VI to the Convention; and

2 That the survey shows that the ship complies with the applicable requirements in regulations 22, 23, 24, 25 and 26.

Completion date of survey on which this Certificate is based: ..... (dd/mm/yyyy)

Issued at .....
(place of issue of certificate)

(dd/mm/yyyy): ....
(date of issue) *(signature of duly authorized official issuing the certificate)*

(seal or stamp of the authority, as appropriate)

1 Alternatively, the particulars of the ship may be placed horizontally in boxes.

2 In accordance with the *IMO ship identification number scheme* (resolution A.1117(30)).

Supplement to the International Energy Efficiency Certificate (IEE Certificate)

RECORD OF CONSTRUCTION RELATING TO ENERGY EFFICIENCY

Notes:

1 This Record shall be permanently attached to the IEE Certificate. The IEE Certificate shall be available on board the ship at all times.

2 The Record shall be at least in English, French or Spanish. If an official language of the issuing Party is also used, this shall prevail in case of a dispute or discrepancy.

3 Entries in boxes shall be made by inserting either: a cross (x) for the answers "yes" and "applicable"; or a dash (-) for the answers "no" and "not applicable", as appropriate.

4 Unless otherwise stated, regulations mentioned in this Record refer to regulations in Annex VI of the Convention, and resolutions or circulars refer to those adopted by the International Maritime Organization.

1 Particulars of ship

1.1 Name of ship .....

1.2 IMO number .....

1.3 Date of building contract .....

1.4 Date of major conversion (if applicable)……

1.5 Gross tonnage .....

1.6 Deadweight .....

1.7 Type of ship[3] .....

2 Propulsion system

2.1 Diesel propulsion ..... □

2.2 Diesel-electric propulsion ..... □

2.3 Turbine propulsion ..... □

2.4 Hybrid propulsion ..... □

2.5 Propulsion system other than any of the above ..... □

[3] Insert ship type in accordance with definitions specified in regulation 2.2. Ships falling into more than one of the ship types defined in regulation 2.2 should be considered as being the ship type with the most stringent (the lowest) required EEDI. If the ship does not fall into the ship types defined in regulation 2.2, insert "Ship other than ship types defined in regulation 2.2".

3 Attained Energy Efficiency Design Index (EEDI)

3.1 The attained EEDI in accordance with regulation 22.1 is calculated based on the information contained in the EEDI technical file, which also shows the process of calculating the attained EEDI..... □

The attained EEDI is: ..... grams-CO_2/tonne-nautical mile

3.2 The attained EEDI is not calculated, as:

3.2.1 the ship is exempt under regulation 22.1 as it is not a new ship as defined in regulation 2.2.18 ..... □

3.2.2 the type of propulsion system is exempt in accordance with regulation 19.3 ….... □

3.2.3 the requirement of regulation 22 is waived by the ship's Administration in accordance with regulation 19.4..... □

3.2.4 the type of ship is exempt in accordance with regulation 22.1..... □

4 Required EEDI

4.1 Required EEDI is: ..... grams-CO_2/tonne-mile

4.2 The required EEDI is not applicable, as:

4.2.1 the ship is exempt under regulation 24.1 as it is not a new ship as defined in regulation 2.2.18..... □

4.2.2 the type of propulsion system is exempt in accordance with regulation 19.3...…..... □

4.2.3 the requirement of regulation 24 is waived by the ship's Administration in accordance with regulation 19.4 ..... □

4.2.4 the type of ship is exempt in accordance with regulation 24.1 …..... □

4.2.5 the ship's capacity is below the minimum capacity threshold in table 1 of regulation 24.2..... □

5 Attained Energy Efficiency Existing Ship Index (EEXI)

5.1 The attained EEXI in accordance with regulation 23.1 is calculated taking into account the guidelines[4] developed by the Organization…….. □

The attained EEXI is:……..grams-CO_2/tonne-mile

5.2 The attained EEXI is not calculated, as:

5.2.1 the type of propulsion system is exempt in accordance with regulation 19.3……. □

[4] Refer to the *2022 Guidelines on the method of calculation of the attained Energy Efficiency Existing Ship Index (EEXI)* (resolution MEPC.350(78)).

5.2.2 the type of ship is exempt in accordance with regulation 23.1…… □

6 Required EEXI

6.1 The required EEXI is:…….grams-CO_2/tonne-mile in accordance with regulation 25

6.2 The required EEXI is not applicable, as:

6.2.1 the type of propulsion system is exempt in accordance with regulation 19.3…….. □

6.2.2 the type of ship is exempt in accordance with regulation 25.1…… □

6.2.3 the ship's capacity is below the minimum capacity threshold in table 3 of regulation 25.1……. □

7 Ship Energy Efficiency Management Plan

7.1 The ship is provided with a Ship Energy Efficiency Management Plan (SEEMP) in compliance with regulation 26……..……..…… □

8 EEDI technical file

8.1 The IEE Certificate is accompanied by the EEDI technical file in compliance with regulation 22.1…….…….. □

8.1.1 The EEDI technical file identification/verification number……..……

8.1.2 The EEDI technical file verification date……..……....

9 EEXI technical file

9.1 The IEE Certificate is accompanied by the EEXI technical file in compliance with regulation 23.1…… □

9.1.1 The EEXI technical file identification/verification number..……

9.1.2 The EEXI technical file verification date...…….....

9.2 The IEE Certificate is not accompanied by the EEXI technical file as the attained EEDI is used as an alternative to the attained EEXI……..□

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at .....
(place of issue of the Record)

(dd/mm/yyyy): ....
(date of issue) *(signature of duly authorized official issuing the Record)*

(seal or stamp of the authority, as appropriate)

Appendix IX

Information to be submitted to the IMO Ship Fuel Oil Consumption Database (regulation 27)

Identity of the ship

IMO number . . . . . .

Period of calendar year for which the data is submitted……

For the purpose of regulation 27:

Start date (dd/mm/yyyy) ……

End date (dd/mm/yyyy)……

For the purpose of regulation 28:

Start date (dd/mm/yyyy) ……

End date (dd/mm/yyyy)……

Technical characteristics of the ship

Year of delivery…….

Ship type, as defined in regulation 2.2 of this Annex or other (to be stated) ……

Gross tonnage (GT)[1]
……...

Net tonnage (NT)[2] ……...

Deadweight tonnage (DWT)[3]

…….

Power output (rated power)[4] of main and auxiliary reciprocating internal combustion engines over 130 kW (to be stated in kW) ……..

[1] Gross tonnage should be calculated in accordance with the International Convention on Tonnage Measurement of Ships, 1969.

[2] Net tonnage should be calculated in accordance with the International Convention on Tonnage Measurement of Ships, 1969. If not applicable, note “N/A”.

[3] DWT means the difference in tonnes between the displacement of a ship in water of relative density of 1,025 kg/m3 at the summer load draught and the lightweight of the ship. The summer load draught should be taken as the maximum summer draught as certified in the stability booklet approved by the Administration or an organization recognized by it. If not applicable, note “N/A”.

[4] Rated power means the maximum continuous rated power as specified on the nameplate of the engine.

Attained EEDI[5] (if applicable)……..…….

Attained EEX[6] (if applicable)……..……

Ice class[7] . ……..

Fuel oil consumption data

Total fuel oil consumption by fuel oil type[8] in metric tonnes and methods used for collecting fuel oil consumption data:…….

Total fuel oil consumption by fuel oil type[8] per consumer type in metric tonnes and methods used for collecting fuel oil consumption data…….

Main Engine(s) …….

Auxiliary Engine(s)/Generator(s) ……

Fired Boiler(s)……

Others (specify) ……

Fuel oil consumption while the ship is not under way by fuel oil type[8] per consumer type in metric tonnes and methods used for collecting fuel oil consumption data:

Main Engine(s) …….

Auxiliary Engine(s)/Generator(s) ……

Fired Boiler(s) ……..

Others (specify) ……

Total distance travelled (nm)……..

Laden distance travelled (nm) (on a voluntary basis)……

Hours under way……

Total amount of onshore power supplied (kWh)……..

5 Refer to the *2022 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.364(79)).

6 Refer to the *2022 Guidelines on the method of calculation of the attained Energy Efficiency Existing Ship Index (EEXI)* (resolution MEPC.350(78)).

7 Ice class should be consistent with the definition set out in the International Code for Ships Operating in Polar Waters (Polar Code) (resolutions MEPC.264(68) and MSC.385(94)). If not applicable, note “N/A”.

For ships to which regulation 28 of MARPOL Annex VI applies:

Total transport work …….

Applicable CII[8]: □AER □cgDIST

Required annual operational CII[9]……

Attained annual operational CII before any correction[10]……..

Attained annual operational CII[11] …….

Installation of innovative technology,[12] if applicable: □A □B-1 □B-2 □C-1 □C-2

Operational carbon intensity rating:[13] □A □B □C □D □E

CII for trial purpose (on voluntary basis):[14]

□ EEPI (gCO_2/t/nm): ……

□ cbDIST (gCO_2/berth/nm): ……

□ clDIST (gCO_2/m/nm): ……

□ EEOI (gCO_2/t/nm):[15] ……

8 Refer to the *2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1)* (resolution MEPC.352(78)).

9 Refer to the *2022 Guidelines on the reference lines for use with operational carbon intensity indicators (CII reference lines guidelines, G2)* (resolution MEPC.353(78)) and *2021 Guidelines on the operational carbon intensity reduction factors relative to reference lines (CII reduction factors guidelines, G3)* (resolution MEPC.338(76)).

10 As calculated in accordance with *the 2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1)* (resolution MEPC.352(78)) before any correction using *Interim guidelines on correction factors and voyage adjustments for CII calculations (G5)* (resolution MEPC.355(78)).

11 As calculated in accordance with the *2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1)* (resolution MEPC.352(78)) and having been corrected taking into account *Interim guidelines on correction factors and voyage adjustments for CII calculations (G5)* (resolution MEPC.355(78)).

12 Refer to the *2021 Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI and EEXI* (MEPC.1/Circ.896).

13 Refer to the *2022 Guidelines on the operational carbon intensity rating of ships (CII rating guidelines, G4)* (resolution MEPC.354(78)).

14 Refer to the *2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1)* (resolution MEPC.352(78)).

15 Refer to the *Guidelines for voluntary use of the ship energy efficiency operational indicator (EEOI)* (MEPC.1/Circ.684).

Appendix X

Form of Statement of Compliance – Fuel Oil Consumption Reporting and Operational Carbon Intensity rating (regulation 8.3)

STATEMENT OF COMPLIANCE – FUEL OIL CONSUMPTION REPORTING AND OPERATIONAL CARBON INTENSITY RATING

Issued under the provisions of the Protocol of 1997, as amended, to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred to as "the Convention") under the authority of the Government of:

……
(full designation of the country)

by.....
(full designation of the competent person or organization authorized under the provisions of the Convention)

Particulars of ship[1]

Name of ship……

Distinctive number or letters……..……

IMO number[2]……..

Port of registry…….…….

Gross tonnage……..…….

Deadweight.…….……

Type of ship……

THIS IS TO DECLARE THAT:

1 the ship has submitted to this Administration the data required by regulation 27 of Annex VI to the Convention, covering ship operations from (dd/mm/yyyy) to (dd/mm/yyyy);

2 the data was collected and reported in accordance with the methodology and processes set out in the ship's SEEMP that was in effect over the period from (dd/mm/yyyy) to (dd/mm/yyyy);

[1] Alternatively, the particulars of the ship may be placed horizontally in boxes.

[2] In accordance with the *IMO ship identification number scheme* (resolution A.1117(30)).

3 the attained annual operational CII of the ship from (dd/mm/yyyy) through (dd/mm/yyyy) was: …… pursuant to regulations 28.1 and 28.2 of Annex VI of the Convention, for ships to which regulation 28 applies;[3]

4 the annual operational carbon intensity of the ship in this period is rated as
□A □B □C □D □E

in accordance with regulation 28 of Annex VI to the Convention, for a ship to which regulation 28 applies;[4] and

5 a corrective action plan has been developed and included in the SEEMP (for a ship to which regulation 28 applies, rated as D for three consecutive years or rated as E)[4]

This Statement of Compliance is valid until (dd/mm/yyyy) .....

Issued at……...
(place of issue of the Statement)

(dd/mm/yyyy): ....
(date of issue) *(signature of duly authorized official issuing the Statement)*

(seal or stamp of the authority, as appropriate)

[3] In the event of any transfer of a ship addressed in regulations 27.4, 27.5 or 27.6, these sections should be completed consistent with regulation 28.3 of MARPOL Annex VI.

[4] Ice class should be consistent with the definition set out in the International Code for Ships Operating in Polar Waters (Polar Code) (resolutions MEPC.264(68) and MSC.385(94)). If not applicable, note "N/A".

Appendix XI

Form of Exemption Certificate for UNSP Barges (regulation 8.4)

INTERNATIONAL AIR POLLUTION PREVENTION EXEMPTION CERTIFICATE FOR UNMANNED NON-SELF-PROPELLED (UNSP) BARGES

Issued under the provisions of the Protocol of 1997, as amended, to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred to as "the Convention") under the authority of the Government of:

……

(full designation of the country)

by ……

(full designation of the competent person or organization authorized under the provisions of the Convention)

Particulars of ship[1]

Name of ship……

Distinctive number or letters……..……

IMO Number[2]…….

Port of registry…….……

Gross tonnage……..…..

THIS IS TO CERTIFY THAT:

1 the UNSP barge has been surveyed in accordance with regulation 3.4 of Annex VI to the Convention;

2 the survey shows that the UNSP barge:

.1 is not propelled by mechanical means;

.2 has no system, equipment and/or machinery fitted that may generate emissions controlled by Annex VI to the Convention; and

.3 has neither persons nor living animals on board; and

3 the UNSP barge is exempted, under regulation 3.4 of Annex VI to the Convention from the certification and related survey requirements of regulations 5.1 and 6.1 of Annex VI to the Convention.

[1] Alternatively, the particulars of the ship may be placed horizontally in boxes.

[2] In accordance with the *IMO ship identification number scheme* (resolution A.1117(30)).

This Certificate is valid until (dd/mm/yyyy) …….

subject to the exemption conditions being maintained.

Completion date of the survey on which this Certificate is based (dd/mm/yyyy)

Issued at ……
(place of issue of certificate)

(dd/mm/yyyy): ....
(date of issue) *(signature of duly authorized official issuing the certificate)*

(seal or stamp of the authority, as appropriate)

Appendix XII

Information to be submitted on the annual GHG fuel intensity (regulation 33)

Identity of the ship

Name of the ship……...

IMO number……..

Port of registry……..

Company name……

Company contact details…….

Period of calendar year for which the data is submitted:

Start date (dd/mm/yyyy) ……..

End date (dd/mm/yyyy)……..

Technical characteristics of the ship

Year of delivery…….

Ship type, as defined in regulation 2.2 of this Annex or other (to be stated) ……

Gross tonnage (GT)[1] ……..

Net tonnage (NT)[2] ……..

Deadweight tonnage (DWT)[3]……..

Power output (rated power)[4] of main and auxiliary reciprocating internal combustion engines over 130 kW (to be stated in kW) ……..

Information related to the annual GHG fuel intensity

Fuel use, by fuel type *j,* as referred to in regulation 33 of Annex VI of the MARPOL Convention, in metric tonnes and methods used for collecting fuel consumption data:

1 Gross tonnage should be calculated in accordance with the International Convention on Tonnage Measurement of Ships, 1969

2 Net tonnage should be calculated in accordance with the International Convention on Tonnage Measurement of Ships, 1969. If not applicable, note “N/A”.

3 DWT means the difference in tonnes between the displacement of a ship in water of relative density of 1,025 kg/m3 at the summer load draught and the lightweight of the ship. The summer load draught should be taken as the maximum summer draught as certified in the stability booklet approved by the Administration or an organization recognized by it. If not applicable, note “N/A”.

4 Rated power means the maximum continuous rated power as specified on the nameplate of the engine.

Main Engine(s) …….

Auxiliary Engine(s)/Generator(s) ……...

Fired Boiler(s)……

Others (specify) ……

Power capacity of other energy conversion systems installed on board, expressed in MJ, and methods used for collecting data, if applicable:

☐ Fuel cell:…….

☐ Electric battery:……..

☐ Wind assisted propulsion system…….....

☐ Photovoltaic power generation system……..

☐ Other:……..

Total amount of onshore power supplied (kWh)……..

Reference of the Fuel Lifecycle Label (FLL) by fuel or energy source type used:……..

Attained annual GHG fuel intensity

EI_j, the GHG intensity, expressed on a well-to-wake basis of each fuel type used, expressed in gCO_2eq/MJ:……..

$Energy_j$, amount of energy used by fuel or energy source type, expressed in MJ……..

$Energy_{total}$, total amount of energy used by the ship, expressed in MJ……..

Attained annual greenhouse gas fuel intensity (attained annual GFI), expressed in gCO_2eq/MJ …….....

Target annual GHG fuel intensity

Target annual GHG fuel intensity of the ship for the reporting period, expressed in in gCO_2eq/MJ:

Base target annual GFI:……...

Direct compliance target annual GFI:…….

GFI compliance balance

GFI compliance balance, expressed in tCO_2eq:……...

For ships in direct compliance, amount of surplus units the ship is eligible to receive, expressed in tCO_2eq:……

For ships with a compliance deficit, the compliance deficit expressed in tCO_2eq, as follows:

Tier 1 compliance deficit:…….

Tier 2 compliance deficit:…….

Amount of surplus units banked from previous reporting periods, expressed in tCO_2eq:……...

Information related to the uptake of zero or near-zero GHG emission technologies, fuels and/or energy sources (ZNZs)

The different ZNZs used, and the total amount per ZNZ, in tCO_2eq:…….

Appendix XIII

Form of Statement of Compliance – Annual GHG Fuel Intensity (regulation 8.5)

STATEMENT OF COMPLIANCE – Annual GHG Fuel Intensity

Issued under the provisions of the Protocol of 1997, as amended, to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred to as "the Convention") under the authority of the Government of:

. . . . . .
(full designation of the country)

by. . . . .
(full designation of the competent person or organization authorized under the provisions of the Convention)

Reporting period:

from (dd/mm/yyyy) to (dd/mm/yyyy)

Particulars of ship

Name of ship. . . . .
Distinctive number or letters . . . . . .
IMO number[1]. . . . . .
Port of registry. . . . . .
Gross tonnage. . . . . .

THIS IS TO DECLARE THAT:

1 the ship has submitted to this Administration the data required by regulation 37 of Annex VI to the Convention, covering ship operations from (dd/mm/yyy) to (dd/mm/yy);

2 the data was collected and reported to this Administration in accordance with the methodology and the processes set out in the ship's SEEMP that was in effect over the period from (dd/mm/yyy) to (dd/mm/yy);

3 the attained annual GHG fuel intensity of the ship for the reporting period was: . . . . . gCO$_2$eq/MJ, pursuant to chapter 5 of Annex VI of the Convention;

4 the GHG fuel intensity compliance balance of the ship for the reporting period was: . . . . . tCO$_2$eq, pursuant to chapter 5 of Annex VI of the Convention;

[1] In accordance with the *IMO Ship Identification Number Scheme* (resolution A.1117(30)).

5 the amount of surplus units banked in the ship's IMO GFI Registry account from previous reporting periods was: . . . . . tCO$_2$eq, pursuant to chapter 5 of Annex VI of the Convention;

6 for ships in direct compliance for the reporting period, pursuant to regulation 36 of Annex VI of the Convention:

.1 the amount of surplus units the ship was eligible to receive was: . . . . . tCO$_2$eq; and

.2 the following selected GHG fuel intensity compliance approach(es) was/were recorded by the IMO GFI Registry:

☐ transfer …….tCO$_2$eq surplus units to other ships;

☐ bank …….tCO$_2$eq surplus units for use in future reporting periods; and/or

☐ cancel……. tCO$_2$eq surplus units on a voluntary basis.

.3 the final amount of surplus units recorded in the ship's IMO GFI Registry account was: . . . . . tCO$_2$eq;

7 for ships with a compliance deficit for the reporting period, pursuant to regulation 36 of Annex VI of the Convention:

.1 the compliance deficit comprised:

☐ Tier 1 compliance deficit:……...tCO$_2$eq; and

☐ Tier 2 compliance deficit:……...tCO$_2$eq.

.2 the following selected GHG fuel intensity compliance approach(es) was/were recorded by the IMO GFI Registry to balance the compliance deficit, pursuant to chapter 5 of Annex VI of the Convention:

☐ use……. surplus units (in tCO$_2$eq) banked;

☐ obtain……. surplus units (in tCO$_2$eq) transferred from other ships; and/or

☐ acquire remedial units through making contribution to the IMO Net-Zero Fund:

☐ Tier 1 remedial units:…….. tCO$_2$eq; and

☐ Tier 2 remedial units:…….. tCO$_2$eq).

8 the annual administration fee was paid to the IMO GFI Registry, pursuant to regulation 38 of Annex VI of the Convention;

9 for a ship eligible to receive rewards from the IMO Net-Zero Fund, the total amount of GHGs reduced by the uptake of ZNZs ……. in tCO_2eq, pursuant to regulation 39 of Annex VI of the Convention, for ships to which chapter 5 applies; and

10 the ship is compliant with its target annual GFI, pursuant to regulation 36 of Annex VI of the Convention.

This Statement of Compliance is valid until (dd/mm/yyyy) . . . . . .

Issued at . . . . . .
(place of issue of the Statement)

(dd/mm/yyyy) . . . . . .

(date of issue) (signature of duly authorized official issuing the Statement)

(seal or stamp of the authority, as appropriate)