GUIDANCE NOTES
GD 35-2022

CHINA CLASSIFICATION SOCIETY

GUIDELINES FOR EVALUATION OF SHIP OPERATIONAL CARBON INTENSITY AND DEVELOPMENT AND VERIFICATION OF SHIP ENERGY EFFICIENCY MANAGEMENT PLAN PART III

2022

Effective from 10 December 2022

Beijing

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Chapter 1 General

1.1 Purpose

1.1.1 The purpose of the Guidelines is to assist shipowners or shipping companies in the calculation and rating of the ship operational carbon intensity indicator (CII), and the development of the SEEMP (Ship Energy Efficiency Management Plan) PART III in accordance with regulations 26 and 28 of amendments to MARPOL Annex VI adopted by resolution MEPC.328(76).

1.1.2 The Guidelines also provide guidance for China Classification Society (CCS) to conduct CII technical services and statutory audits as well as verification of SEEMP PART III.

1.2 Basis

1.2.1 Amendments to MARPOL Annex VI adopted by resolution MEPC.328(76) at MEPC 76.

1.2.2 2022 Guidelines on Operational Carbon Intensity Indicators and the Calculation Methods (CII Guidelines, G1) adopted by resolution MEPC.352(78) at MEPC 78.

1.2.3 2022 Guidelines on the Reference Lines for Use with Operational Carbon Intensity Indicators (CII Reference Lines Guidelines, G2) adopted by resolution MEPC.353(78) at MEPC 78.

1.2.4 2021 Guidelines on the operational carbon intensity reduction factors relative to reference lines (CII reduction factors guidelines, G3) adopted by resolution MEPC.338(76) at MEPC 76.

1.2.5 2022 Guidelines on the Operational Carbon Intensity Rating of Ships (CII Rating Guidelines, G4) adopted by resolution MEPC.354(78) at MEPC 78.

1.2.6 2022 Interim Guidelines on Correction Factors and Voyage Adjustments for CII Calculations (CII Guidelines, G5) adopted by resolution MEPC.355(78) at MEPC 78.

1.2.7 2022 Guidelines for the Development of a Ship Energy Efficiency Management Plan (SEEMP) adopted by resolution MEPC.346(78) at MEPC 78.

1.2.8 Guidelines for the Verification and Company Audits by the Administration of Part III of the Ship Energy Efficiency Management (SEEMP) adopted by resolution MEPC.347(78) at MEPC 78.

1.2.9 2022 Guidelines for Administration Verification of Ship Fuel Oil Consumption Data and Operational Carbon Intensity adopted by resolution MEPC.348(78) at MEPC 78.

1.3 Application

1.3.1 The Guidelines are applicable to the following ships of 5000 gross tonnage and above (see 1.4.9 for definition of ship types):

(1) Bulk carrier;

(2) Gas carrier;

(3) Tanker;

(4) Container ship;

(5) General cargo ship;

(6) Refrigerated cargo carrier;

(7) Combination carrier;

(8) LNG carrier;

(9) Ro-ro passenger ship;

(10) Ro-ro cargo ship (vehicle carrier);

(11) Ro-ro cargo ship;

(12) Cruise passenger ship.

1.3.2 The Guidelines are not applicable to category A ships as defined in 1.4.9(14).

1.4 Definition

1.4.1 *IMO DCS* means the data collection system for fuel oil consumption of ships referred to in regulation 27 and related provisions of MARPOL Annex VI.

1.4.2 *Deadweight tonnage (DWT)* means the difference in tonnes between the displacement of a ship in water of a relative density of 1025kg/m^3 at the summer load draught and the lightweight of the ship. Unless otherwise specified by the Administration, DWT in the supplement to the IEE certificate is to be taken.

1.4.3 *Gross tonnage (GT)* means the gross tonnage in accordance with the International Convention of Tonnage Measurement of Ships 1969.

1.4.4 *Operational carbon intensity indicator (CII)* means the average CO_2 emissions per transport work of a ship. A specific CII, in which calculation the capacity of a ship is taken as proxy of the actual mass or volume of the shipment carried on board, is generally referred to as supply-based CII. The supply-based CII which uses DWT as the capacity is referred to as AER, and the supply-based CII which uses GT as the capacity is referred to as cgDIST.

1.4.5 *Attained annual operational CII* is the operational carbon intensity indicator value achieved by an individual ship in accordance with Chapter 3 of the Guidelines, hereinafter referred to as Attained CII.

1.4.6 Required annual operational CII is the target value of attained annual operational CII in accordance with Chapter 2 of the Guidelines for the specific ship type and size, hereinafter referred to as Required CII.

1.4.7 A refrigerated container is an intermodal shipping container that is refrigerated (including chilled and frozen containers) or heated for the transportation of temperature-sensitive cargo, which will receive its power from the ship's power supply.

1.4.8 Ice edge is defined by the WMO Sea-Ice Nomenclature, March 2014 as the demarcation at any given time between the open sea and sea ice of any kind, whether fast or drifting.

1.4.9 Definitions of ship types

(1) *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 SOLAS chapter XII , but excluding combination carriers.

(2) *Gas carrier* means a cargo ship, other than an LNG carrier, constructed or adapted and used for the carriage in bulk of any liquefied gas.

(3) *Tanker* means an oil tanker as defined in regulation 1 of MARPOL Annex I or a chemical tanker or a NLS (noxious liquid substance) tanker as defined in regulation 1 of MARPOL Annex II.

(4) *Container ship* means a ship designed exclusively for the carriage of containers in holds and on deck.

(5) *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[①] , yacht carrier, nuclear fuel carrier.

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

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

(8) *Passenger ship* means a ship which carries more than 12 passengers.

(9) *Ro-ro passenger ship* means a passenger ship with roll-on-roll-off cargo spaces.

(10) *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.

① For the scope of definition of heavy load carrier, reference may be made to IACS Rec.170.

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

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

(13) *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.

(14) *Category A ship* means a ship designed for operation in polar waters in at least medium first-year ice, which may include old ice inclusions, as defined in the Polar Code.

1.4.10 *A shuttle tanker* is a tanker which is equipped with dynamic positioning and specialized cargo handling equipment making it capable of loading crude oil at offshore installations.

1.4.11 *Ship-to-Ship (STS) operation* means STS operation of a tanker when operating in accordance with regulation 41.2 of MARPOL Annex I and applying the best practices in accordance with the OCIMF Ship to Ship Transfer Guide for Petroleum, Chemical and Liquefied Gases.

1.4.12 *A self-unloading bulk carrier* is a bulk carrier with an onboard cargo handling system that is utilized to discharge dry bulk cargo via a boom conveyor or shipboard cargo pipeline equipment.

Chapter 2 CII Reference Line and CII Rating Framework

2.1 Determination of CII reference line and reduction factor

2.1.1 Calculation method of CII reference lines

(1) An operational carbon intensity indicator (CII) reference line is defined as a curve representing the median attained operational carbon intensity performance of a defined group of ships.

(2) The CII reference line is formulated as follows:

$$CII_{ref} = a \cdot Capacity^{-c}$$

where: CII_{ref} — CII reference value;
Capacity — DWT or GT, identical with the one defined in the specific carbon intensity indicator (CII) for a ship type, as shown in Table 2.1.1;
a and *c* — parameters, see Table 2.1.1.

Parameters for determining the ship type specific reference lines Table 2.1.1

Ship type		Capacity	*a*	*c*
Bulk carrier	279,000 DWT and above	279,000	4745	0.622
	less than 279,000 DWT	DWT	4745	0.622
Gas carrier	65,000 DWT and above	DWT	14405E7	2.071
	less than 65,000 DWT	DWT	8104	0.639
Tanker		DWT	5247	0.610
Container ship		DWT	1984	0.489
General cargo ship	20,000 DWT and above	DWT	31948	0.792
	less than 20,000 DWT	DWT	588	0.3885
Refrigerated cargo carrier		DWT	4600	0.557
Combination carrier		DWT	5119	0.622
LNG carrier	100,000 DWT and above	DWT	9.827	0.000
	65,000 DWT and above, but less than 100,000 DWT	DWT	14479E10	2.673
	less than 65,000 DWT	65,000	14779E10	2.673
Ro-ro cargo ship (vehicle carrier)	57,700 GT and above	57,700	3627	0.590
	30,000 GT and above, but less than 57,700 GT	GT	3627	0.590
	Less than 30,000 GT	GT	330	0.329
Ro-ro cargo ship		GT	1967	0.485
Ro-ro passenger ship	Ro-ro passenger ship	GT	2023	0.460
	High-speed craft designed to SOLAS chapter X	GT	4196	0.460
Cruise passenger ship		GT	930	0.383

2.1.2 CII reduction factor

(1) The CII reduction factor, generally denoted as ″Z″, is a positive value, stipulating the percentage points of the Required CII of a ship for a given year lower than the reference value (CII_{ref}).

(2) Reduction factor Z for the Required CII from year 2023 to 2026 is as specified in Table 2.1.2.

Reduction factor for the CII relative to the reference line Table 2.1.2

Year	Reduction factor to the reference lines Z%
2023	5 %
2024	7 %
2025	9 %
2026	11 %
2027	--
2028	--
2029	--
2030	--

(3) Z factors for the years of 2027 to 2030 will be further strengthened and developed by IMO taking into account the review of the short-term measure the the Initial IMO Strategy on Reduction of GHG Emissions from Ships.

2.2 Calculation of Required CII and framework of the operational energy efficiency performance rating

2.2.1 Calculation of Required CII

For each ship to which the Guidelines apply, CII_{ref} of the ship is to be calculated in accordance with 2.1.1. For each subsequent calendar year, the Required CII of the Ship for that calendar year is to be calculated based on this reference value and the corresponding reduction factor as follows:

$$Required\ \ CII = (1 - Z/100) \times CII_{ref}$$

where: Z — annual reduction factor, see Table 2.1.2.

2.2.2 Framework of the operational energy efficiency performance rating

(1) Operational energy efficiency rating

① Operational energy efficiency performance is determined by CII rating, i.e. assigning a ranking label from among the five grades (A, B, C, D and E) to the ship, indicating a major superior, minor superior, moderate, minor inferior, or inferior performance level. The distribution of CIIs of individual ships in the year is set based on the reference line, and the annual rating distribution of the ship is as follows: Grade A accounting for 15%, Grade B accounting for 20%, Grade C accounting for 30%, Grade D accounting for 20% and Grade E accounting for 15%.

② Four boundaries are defined for the five-grade rating mechanism, namely superior boundary, lower boundary, upper boundary, and inferior boundary.

③ For each ship to which the Guidelines apply, a rating can be assigned through comparing the Attained CII of a ship with the Required CII calculated in accordance with 2.2.1.

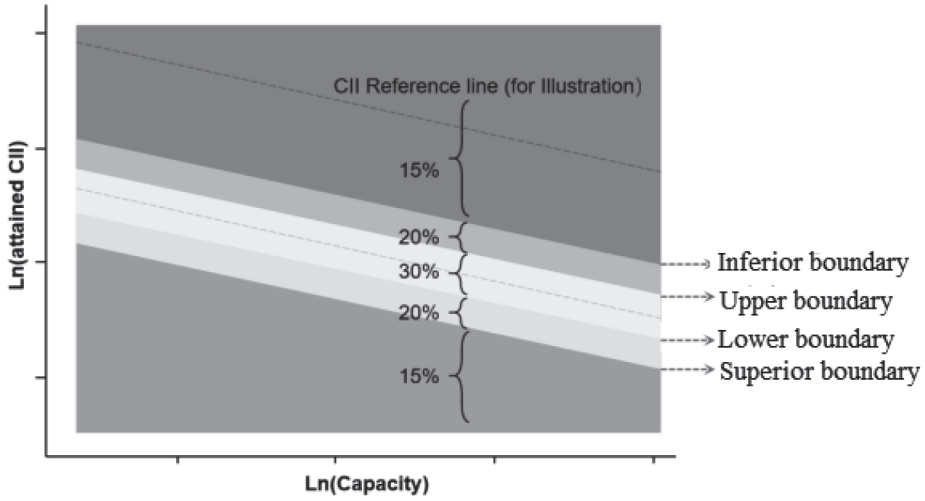

Figure 2.2.2-1 Operational energy efficiency performance rating scale

(2) Rating boundaries

① The boundaries can be determined by the *Required CII* in conjunction with the vectors (denoted as *dd*), as illustrated in Figure 2.2.2-2.

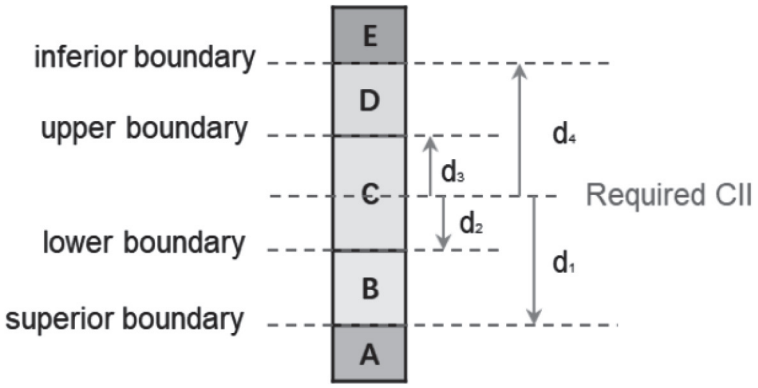

Figure 2.2.2-2 dd vectors and rating bands

② The rating boundaries are calculated in accordance with the following formulae:

a) superior boundary = *exp(d1) · Required CII*
b) lower boundary = *exp(d2) · Required CII*
c) upper boundary = *exp(d3) · Required CII*
d) inferior boundary = *exp(d4) · Required CII*

where: exp(d1) - exp(d4) — *dd* vectors after exponential transformation, see Table 2.2.2 below.

dd vectors for determining the rating boundaries of ship types Table 2.2.2

Ship type		Capacity in CII calculation	*dd* vectors (after exponential transformation)			
			exp(d1)	exp(d2)	exp(d3)	exp(d4)
Bulk carrier		DWT	0.86	0.94	1.06	1.18
Gas carrier	65,000 DWT and above	DWT	0.81	0.91	1.12	1.44
	less than 65,000 DWT	DWT	0.85	0.95	1.06	1.25
Tanker		DWT	0.82	0.93	1.08	1.28
Container ship		DWT	0.83	0.94	1.07	1.19
General cargo ship		DWT	0.83	0.94	1.06	1.19
Refrigerated cargo carrier		DWT	0.78	0.91	1.07	1.20
Combination carrier		DWT	0.87	0.96	1.06	1.14
LNG carrier	100,000 DWT and above	DWT	0.89	0.98	1.06	1.13
	Less than 100,000 DWT	DWT	0.78	0.92	1.10	1.37
Ro-ro cargo ship (vehicle carrier)		GT	0.86	0.94	1.06	1.16
Ro-ro cargo ship		GT	0.76	0.89	1.08	1.27
Ro-ro passenger ship		GT	0.76	0.92	1.14	1.30
Cruise passenger ship		GT	0.87	0.95	1.06	1.16

Chapter 3 Calculation and Correction of Attained CII

3.1 Calculation of Attained CII

3.1.1 Calculation formula of Attained CII

Attained CII of individual ships is calculated as the ratio of the total mass of CO_2 (M) emitted to the total transport work (W) undertaken in a given calendar year, as follows:

$$Attained\ CII = \frac{M}{W}$$

3.1.2 Parameters and their values in the CII calculation formula

(1) The total mass of CO_2 is the sum of CO_2 emissions (in grams) from all the fuel oil consumed on board a ship in a given calendar year, as follows:

$$M = \sum FC_j \times C_{Fj}$$

where: j — fuel oil type;
FC_j — the total mass (in grams) of consumed fuel oil of type j in the calendar year, as reported under IMO DCS;
C_{Fj} — the fuel oil mass to CO_2 mass conversion factor for fuel oil type j, see Table 3.1.2 below.

Carbon Conversion Factor C_F **Table 3.1.2**

Type of fuel	Reference	C_F (t-CO_2/t-Fuel)
1. Diesel/Gas Oil	ISO 8217 Grades DMX through DMC	3.206
2. Light Fuel Oil (LFO)	ISO 8217 Grades RMA through RMD	3.151
3. Heavy Fuel Oil (HFO)	ISO 8217 Grades RME through RMK	3.114
4. Liquefied Petroleum Gas (LPG)	Propane	3.000
	Butane	3.030
5. Liquefied Natural Gas (LNG)		2.750
6. Methanol		1.375
7. Ethanol		1.913
Note: In case the type of the fuel oil is not covered by the table, the conversion factor should be obtained from the fuel oil supplier supported by documentary evidence.		

(2) Transport work (W)

It is defined as the product of a ship's capacity and the distance travelled in a given calendar year, as follows:

$$W = C \times D_t$$

where: C — the ship's capacity. For bulk carriers, tankers, container ships, gas carriers, LNG carriers, general cargo ships, refrigerated cargo carrier and combination carriers, deadweight tonnage (*DWT*) should be used as Capacity; For cruise passenger ships, ro-ro cargo ships (vehicle carriers), ro-ro cargo ships and ro-ro passenger ships, gross tonnage (*GT*) should be used as Capacity;

D_t — the total distance travelled (in nautical miles), as reported under IMO DCS.

3.1.3 Operational carbon intensity indicator (CII) of individual ships for trial purpose

The following metrics are encouraged to be used for trial purposes, where applicable:

(1) *EEPI*

$$EEPI = \frac{M}{C \times D_l}$$

(2) *cbDIST*

$$cbDIST = \frac{M}{ALB \times D_t}$$

(3) *clDIST*

$$clDIST = \frac{M}{Lanemeter \times D_t}$$

(4) *EEOI*

$$EEOI = \frac{M}{m_{cargo} \times D_l}$$

In the formulas above:

M, C and D_t are as specified in 3.1.2;

D_l — the laden distance travelled (in nautical miles) when the ship is loaded;

ALB — the number of available lower berths of a cruise passenger ship;

Lanemeter — the length (in metres) of the lanes of a ro-ro ship;

mcargo — cargo carried for ship (tonnes/number of TEU) or number of passengers for passenger ships.

3.1.4 Others

(1) In case of a ship with multiple load line certificates or with a load line certificate containing multiple load lines, the highest deadweight value should be used to calculate CII.

(2) For a ship which permanently changes its deadweight (*DWT*) and/or its gross tonnage (*GT*) during the year:

① Required CII should always be calculated using the original DWT or GT value before conversion; however, Attained CII should be calculated using the new DWT or GT value after conversion;

② for the year when the conversion is made, Attained CII should be calculated for the entire calendar year on the average DWT or GT value weighted on distance travelled before and after conversion.

(3) Except for those specified in (2), for a ship which is regarded by the Administration as a newly constructed ship as per regulation 5.4.3 of MARPOL Annex VI due to major conversion, including extensive changes of carrying capacity and/or ship type during the year, CII should be calculated as per a newly constructed ship.

3.2 Correction of Attained CII

3.2.1 Correction formula of Attained CII

For correction of Attained CII due to voyage adjustment, special operation, special energy use, etc., the calculation formula is as follows:

$$\frac{\sum_j C_{Fj} \cdot \left\{ FC_j - \left(FC_{voyage,j} + TF_j + \left(0.75 - 0.03 y_i\right) \cdot \left(FC_{electrical,j} + FC_{boiler,j} + FC_{other,j} \right) \right) \right\}}{f_i \cdot f_m \cdot f_c \cdot f_{iVSE} \cdot Capacity \cdot \left(D_t - D_x \right)}$$

3.2.2 Parameters and their values in the Attained CII correction formula

(1) Voyage adjustment and related fuel oil consumption and distance travelled

Mass of fuel consumed ($FC_{voyage,j}$) and distance travelled (D_x) for voyage periods may be deducted from the calculation of Attained CII in case the ship encounters one of the following situations:

① scenarios specified in regulation 3.1 of MARPOL Annex VI, which may endanger safe navigation of a ship;

② sailing in ice conditions.

(2) Fuel type *j*

This factor means fuel type.

(3) Carbon conversion factor (C_{Fj})

This factor represents the fuel mass to CO_2 mass conversion factor, see Table 3.1.2.

(4) Total mass of fuel (FC_j)

This factor represents the total mass of consumed fuel of type j in the calendar year, as reported under IMO DCS, converted to grams.

(5) Total distance travelled (D_t)

This factor represents the total distance travelled (in nautical miles), as reported under IMO DCS.

(6) Fuel consumption related to STS or shuttle tanker (TF_j)

This factor represents the quantity of fuel *j* removed for STS or shuttle tanker operation. For an STS voyage for which the fuel consumption can be removed, the voyage between cargo loading and cargo discharging locations, or the voyage between cargo discharging and cargo loading locations does not exceed 600 nautical miles and the time for each of these voyages (which does not include port or discharge time) is limited to 72 hours.

The calculation formula of TF_j is as follows:

$$TF_j = \left(1 - AF_{Tanker}\right) \cdot FC_{S,j}$$

where:

① AF_{Tanker} is calculated as follows:
For STS operation, $AF_{Tanker,STS} = 6.1742 \cdot DWT^{-0.246}$;
For shuttle tanker, $AF_{Tanker,Shuttle} = 5.6805 \cdot DWT^{-0.208}$.

② $FC_{s,j}$ is the total quantity of fuel *j*:
For shuttle tanker, $FC_{s,j}$ is FC_j;
For ships engaged in STS operation, $FC_{s,j}$ is the total quantity of fuel *j* used on STS voyages for ships, including cargo transfer at offshore location, voyage, cargo discharge and waiting periods at anchor or drifting during which the ship reports being part of an STS operation and voyage, and the fuel consumption in port where the transferred cargo is discharged after such a voyage.

(7) Numbering system (y_i)

This factor represents a consecutive numbering system starting at $y_{2023} = 0$, $y_{2024} = 1$, $y_{2025} = 2$, etc.

(8) Fuel consumption for corrections relating to electrical power ($FC_{electrical,j}$)

This factor represents the mass (in grams) of fuel of type *j*, consumed for production of electrical power during the calendar year for the following special purposes, not including consumption during voyage adjustment periods.

① Fuel consumption due to use of reefer ($FC_{electrical\_reefer,j}$)

a) For ships that have the ability to monitor reefer electrical consumption, the calculation formula is as follows:

$$FC_{electrical\_reefer,j} = ReeferkWh \times SFOC_{avg}$$

where: *ReeferkWh* — reefer electrical consumption measured on the ship by the kWh meter counter on the ship;

$SFOC_{avg}$ — the specific fuel consumption in g/kWh as a weighted average of the engines used to provide the electrical power, as per the EEDI/EEXI Technical File or the NOx Technical File. In the case of ships without a Technical File, a default value of 175 g/kWh for 2 stroke engines and 200 g/kWh for 4 stroke engines may be applied. In the case of waste heat recovery systems as defined under Category C1 in MEPC.1/Circ.896 the SFOC to be used will be at the discretion of the Administration;

Alternatives such as derivation of fuel consumption or kWh from auto-logged data may be used subject to approval by the Administration.

b) For ships that do not have the ability to monitor reefer electrical consumption, the calculation formula is as follows:

$$FC_{electrical\_reefer,j} = C_x \cdot 24 \cdot SFOC_{avg} \cdot \left(Reefer\_days_{sea} + \sum Reefer\_days_{port}\right)$$

where: C_x — a default reefer consumption of 2.75kW/h.

$SFOC_{avg}$ — the specific fuel consumption in g/kWh as a weighted average of the engines used to provide the electrical power, as per the EEDI/EEXI Technical File or NOx Technical File. In the case of ships without a Technical File, a default value of 175g/kWh for 2 stroke engines and 200g/kWh for 4 stroke engines may be applied. In the case of waste heat recovery systems as defined under Category C1 in MEPC.1/Circ.896 the SFOC to be used will be at the discretion of the Administration.

$Reefer\_days_{sea}$ — the number of in-use reefer-days over the declared period, which may be derived using the number of reefer containers as recorded in the BAPLIE file multiplied by the number of days at sea.

$Reefer\_days_{port}$ — the number of in-use reefers at port where shore-power is not used, and the calculation formula is as follows:

$$Reefer\_days_{port} = \frac{No_c Arrival + No_c Departure}{2} Days_{port}$$

where: *NocArrival* — number of reefer containers on arrival;

$No_c Departure$ —— number of reefer containers at departure;

$Days_{port}$ —— number of days in port.

In all cases, the actual number of in-use reefers carried is documented in relevant documents, e.g. BAPLIE file.

② Fuel oil consumption ($FC_{electrical\_cooling,\ j}$) attributed to cargo cooling or reliquefaction of gas carriers and LNG carriers is calculated in accordance with the following formula:

$$FC_{electrical\ \ cooling,j} = CoolingkWh \cdot SFOC$$

where: *CoolingkWh* — amount of electricity measured by the kWh meter counter during the cooling/ reliquefaction of the cargo on board;

SFOC — the specific fuel consumption in g/kWh associated with the relevant source of electrical power as per the EEDI/EEXI Technical File or NOx Technical File. In the case of ships without a Technical File, a default value of 175g/kWh for 2 stroke engines and 200g/kWh for 4 stroke engines may be applied. In the case of waste heat recovery systems as defined under Category C1 in MEPC.1/Circ.896 the *SFOC* to be used will be at the discretion of the Administration.

Alternatives such as derivation of fuel consumption or kWh from auto-logged data may be used subject to approval by the Administration.

③ the fuel consumption ($FC_{electrical\_discharge,j}$) attributed to use of electrically powered cargo discharge pumps on tankers is calculated in accordance with the following formula:

$$FC_{electrical\ \ discharge,j} = Dischargekwh \cdot SFOC$$

where: *DischargekWh* — amount of electricity measured by the kWh meter counter during the discharge on board;

SFOC — the specific fuel oil consumption in g/kWh associated with the relevant source of electrical power as per the EEDI/EEXI Technical File or NOx Technical File. In the case of ships without a Technical File, a default value of 175 g/kWh for 2 stroke engines and 200 g/kWh for 4 stroke engines may be applied. In the case of waste heat recovery systems as defined under Category C1 in MEPC.1/Circ.896 the *SFOC* to be used will be at the discretion of the Administration.

Alternatives such as derivation of actual fuel consumption or kWh from auto-logged data may be used subject to approval by the Administration.

(9) Fuel consumption related to correction of boilers ($FC_{boiler,j}$)

This factor represents the mass (in grams) of fuel of type *j*, consumed for tankers with fuel fired boilers used for cargo heating or steam driven cargo pumps, not including consumption during voyage adjustment periods.

$FC_{boiler,j}$ may be measured by accepted means, e.g. tank soundings, flow meters.

Some amount of fuel consumed by the boiler during cargo heating or discharge operations may be attributed to other purposes, e.g. calorifiers. It is not necessary to split these out from reporting.

(10) Correction factor of other fuel consumption ($FC_{other,j}$)

This factor represents the mass (in grams) of fuel of type *j*, consumed for the period that the discharge pumps are in operation for tankers with discharge pumps powered by their own generator, not including consumption during voyage adjustment periods.

$FC_{other,j}$ may be measured by accepted means, e.g. tank soundings, flow meters.

(11) Ice-classed ship capacity correction factor (f_i), ice-classed ship correction factor (f_m), cubic capacity correction factor of chemical tanker (f_c), correction factor for ship specific voluntary structural enhancement ($f_{i,VSE}$)

f_i — ice-classed ship capacity correction factor;
f_m — correction factor of ice class IA Super and IA and relevant ice class of classification society;
f_c — cubic capacity correction factor of chemical tanker;
$f_{i,VSE}$ — correction factor for ship specific voluntary structural enhancement (only applicable to self-unloading bulk carrier).

The above four correction factors are calculated and taken in accordance with the Guidelines on Calculation and Verification of Energy Efficiency Design Index (EEDI) of Sea-going Ships Engaged on International Voyages.

(12) *Capacity*

This factor represents *DWT* or *GT*, in line with ship-specific CII.

Chapter 4 Verification of Attained CII and CII Rating

4.1 General requirements

4.1.1 In accordance with relevant provisions of MARPOL Annex VI, CCS, when so authorized by the Administration and upon application by the company, verifies the submitted ship fuel oil consumption data and Attained CII, determines the CII rating, issues " Statement of Compliance - Fuel Oil Consumption Reporting and Operational Carbon Intensity Rating"① (SOC), and submits the data to IMO.

4.1.2 It is recommended that the CCS Ship Energy Efficiency Management System be used for the collection and submission of ship fuel consumption data and the application for operational carbon intensity calculation and verification.

4.2 Verification and rating of Attained CII

4.2.1 In 2024 and at the beginning of each year thereafter, ships are to calculate their Attained CII for the 12-month period from 1 January to 31 December of the previous year based on IMO DCS data and submit it electronically to CCS by 31 March of each year in IMO standard format.

4.2.2 If a change of flag and/or change of company occurs after 1 January 2023, the ship is still to calculate and report Attained CII for the 12-month period from 1 January to 31 December after the end of current year.

4.2.3 In 2024 and at the beginning of each year thereafter, CCS verifies the IMO DCS report and Attained CII submitted by the ship to determine the ship's operational carbon intensity rating and issue the SOC. The operational carbon intensity rating ranges from high to low in five grades: "A", "B", "C", "D" and "E", with the median value of each year's grade "C" equivalent to the "Required CII" applicable to the ship.

4.2.4 For a ship rated as D for three consecutive years or rated as E, the SEEMP PART III is to be reviewed by the company to include a plan of corrective actions, describing how to achieve the Required CII through the corrective action plan. The revised SEEMP PART III is recommended to be submitted in conjunction with the Attained CII and is to be submitted to CCS for verification no later than 30 April of each year and furnished with SOC issued by CCS.

4.2.5 For verification of Attained CII, the following additional documents are to be submitted in conjunction with IMO DCS report during application by the company:

(1) a copy of the verified ship's Operational Carbon Intensity Plan (SEEMP part III);

(2) documents (IEE certificate, Stability Booklet or International Tonnage Certificate) evidencing the capacity parameter of the ship in the metric relevant for the calculation of its operational carbon intensity (deadweight or gross tonnage);

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① Statement of Compliance - Fuel Oil Consumption Reporting and Operational Carbon Intensity Rating replaces the Statement of Compliance of Fuel Oil Consumption Report in the Guidelines for the Monitoring, Reporting and Verification of CO_2 Emissions (2018).

(3) aggregated data of fuel oil consumption and distance travelled covering the entire calendar year to calculate Attained CII (see sample form of data summary set out in appendix 5);

(4) the aggregated values of the parameters and associated calculation methods to determine the annual metric value of the trial CIIs on voluntary basis, if any (see sample form of data summary set out in appendix 5-1);

(5) supported by documentary evidence, the correction factors and voyage adjustments applied in the Attained CII calculation, if any, during the reporting period (see sample form of data summary set out in appendix 5); and

(6) statements of compliance for previous two calendar years where applicable.

4.2.6 The attained annual operational CII is to be verified using the data over a 12-month period from 1 January to 31 December for the preceding calendar year. In cases where the calculation of the Attained CII is not possible due to the unavailability of some data, such as where a new ship is delivered or a ship is put into service again after 1 January in the preceding year, the Attained CII is to be verified using the available data covering the corresponding period of the preceding calendar year.

4.2.7 For a ship which has undergone a transfer addressed in regulations 27.4, 27.5 or 27.6 of MARPOL Annex VI, the losing Administration neither needs to verify the Attained CII nor to determine the annual CII rating of the ship for partial year. The Attained CII is to be verified by the receiving Administration using the data over an entire calendar year. In such cases, the aggregated data necessary to calculate the Attained CII before transfer, which should have already been verified by the losing Administration, can be directly used by the receiving Administration without further verification (see sample form set out in appendix 6 and appendix 6-1). The above verification is carried out by CCS when so authorized by the Administration.

4.2.8 CCS is to carry out calculation and rating, and determine the operational carbon intensity rating for the ship after verifying the data of Attained CII. The Attained and Required CII, as well as the rating boundaries, are to be all given with three decimal places. If the Attained CII happens to land on a rating boundary, the ship is to be rated as the better of the two ratings.

4.2.9 The trial CIIs (e.g. EEPI, cbDIST, clDIST or EEOI), if voluntarily calculated and reported, are to be verified following the same procedure as for the Attained CII. There is no need to assign a rating to a ship based on trial CIIs.

4.3 Issuance of a statement of compliance

4.3.1 Upon completion of CII verification and rating as required in 4.2 of the Guidelines, CCS will issue the SOC, which is valid from the calendar year when it is issued until the first five months of the next calendar year. The Statement of Compliance is to be kept on board for a minimum of 5 years, see sample form in Appendix 8.

4.3.2 In the case of a corrective actions plan being required, the company is to submit a revised SEEMP including a plan of corrective actions in a timely manner to CCS no later than one month after reporting the Attained CII.

4.3.3 Should any material discrepancy be identified by CCS in the verification of Attained CII, it should be communicated to the company on a timely basis for clarification or correction. A discrepancy is considered material if the discrepancy or aggregation of discrepancies could influence the reported total by more than ±5%. The Statement of Compliance should not be issued in such a case unless the material discrepancy is clarified or corrected.

Chapter 5 Development of Seemp Part III

5.1 General requirements

5.1.1 For ships applicable to the Guidelines, SEEMP PART III is to include:

(1) a description of the methodology that will be used to calculate the ship's Attained CII and the processes that will be used to report this value to the ship's Administration;

(2) the Required CII for the next three years;

(3) an implementation plan documenting how the Required CIIs will be achieved during the next three years;

(4) a procedure for self-evaluation and improvement.

5.1.2 For a ship rated as D for three consecutive years or rated as E, the SEEMP PART III is to be reviewed by the company to include a plan of corrective actions, describing how to achieve the Required CII through the corrective action plan.

5.1.3 It is recommended that ships applicable to the Guidelines, when developing/revising SEEMP PART III, review the goal setting mentioned in SEEMP PART I for compliance with the requirements of CII and revise it as necessary.

5.1.4 Ships applicable to the Guidelines may consider voluntarily using one or more of the trial CIIs (EEPI, cbDIST, clDIST or EEOI) described in 3.1.3. A standardized data reporting format for the trial carbon intensity indicators is presented in appendix 4. A description of the methodology that is to be used to calculate the trial CII is to be included in the SEEMP PART III.

5.1.5 Part III of the ship's SEEMP is to be updated every three years and is also to be updated promptly in case of voluntary modifications or necessary corrective actions are involved.

5.2 Development content

5.2.1 Calculation methodology of Attained CII

(1) The Attained CII before and after correction is to be calculated in accordance with the relevant requirements in Chapter 3 of the Guidelines and IMO DCS data.

(2) In describing the calculation methodology, the SEEMP PART III is to include a detailed description of the data required for the calculation of the Attained CII. The data collection is to follow the relevant methodology and requirements of IMO DCS.

(3) In case of transfer of the ship from one company to another, all relevant data necessary for the calculation of the Attained CII is to be submitted by the former company to the receiving company within one month after the date of transfer. The data is to have been verified by the Administration or any organization duly authorized by it according to regulation 6.7 of MARPOL Annex VI before they are transferred to the receiving company. The format of the transferred data report is to be consistent with Appendix 3 and such that the receiving company can use it in the calculations of the Attained CII for the whole year in which the transfer takes place.

(4) In case the former company does not transfer the required data, the Administration may make relevant data submitted to the IMO Fuel Oil Consumption Database available to the receiving company. In case of a transfer of both company and Administration concurrently, the incoming Administration may make a request to IMO for access to the data. If no such data is available, the Attained CII can be calculated and verified using the available data covering a period of the preceding calendar year.

(5) In case of transfer of a ship from one Administration to another, the data needed for calculating the Attained CII is already in the possession of the relevant company and no further exchange of data is needed.

5.2.2 Required CII for next three years

The Required CII values for the ship for each of the next three years are to be calculated in accordance with Chapter 2 of the Guidelines.

5.2.3 Three-year implementation plan

(1) The three-year implementation plan is to describe the measures the ship plans to take to continue to achieve the Required CII over the next three-year period. These measures may include, but are not limited to those described in SEEMP PART I. The three-year implementation plan is to be specific, measurable, achievable, realistic, and time-bound. It is to include:

① a list of measures that improve the energy efficiency and reduce the carbon intensity of the ship, with time and method of implementation;

② a description of how, when the listed measures are implemented, the Required CII will be achieved, taking into consideration the combined effect of the measures on the CII;

③ the company personnel responsible for the three-year implementation plan, and for monitoring and recording performance throughout the year for the reviewing of the effectiveness of the three-year implementation plan; and

④ identification of possible impediments to the effectiveness of the measures for improving the energy efficiency and reducing the carbon intensity of the ship, including possible contingency measures put in place to overcome these impediments.

(2) The three-year implementation plan is to be monitored and adjusted when necessary, and the data is to be monitored and identified.

5.2.4 Self-evaluation and improvement

(1) The purpose of self-evaluation is to evaluate the effectiveness of the planned measures, to deepen the understanding of the overall characteristics of the ship's operation, such as what types of measures can function effectively and how they can be effective, and what efficiency improvement measures can be explored, to develop an improved plan for the next implementation cycle and to provide meaningful feedback for the planned measures in the next period.

(2) Procedures for self-evaluation of the ship's energy usage and carbon intensity are to be developed in SEEMP PART III. Self-evaluation is to be carried out periodically based on data collected through monitoring. It is recommended that the cause and effect of the ship's performance in the evaluated period be identified in order to identify measures for improving performance during the next period.

(3) The process of self-evaluation and improvement is to consist of the following elements:

① regular internal shipboard and company audits to verify implementation and the effectiveness of the self-evaluation and improvement system;

② preventive or modifying measures (responsible personnel within the company is to evaluate such audit reports and implement corrective actions including preventive or modifying measures);

③ periodical review of the SEEMP and associated documents, to update the SEEMP in a manner which minimizes any administrative and unnecessary burdens on company's personnel and ship's staff.

(4) The content of the self-evaluation and improvement is to include the following elements:

① criteria for evaluation, including elements to evaluate, such as quality of monitoring, record-keeping, effectiveness of implemented measures (including cause and effect) and achievement of the goal;

② the evaluation of the effectiveness of the different measures taken, in terms of energy efficiency and carbon intensity;

③ which measures contribute the most and how much, which measures do not contribute and are therefore not efficient, which ship and/or company-specific elements adversely affect the CII and how these could be improved;

④ timeline for starting the review process ahead of the end of the compliance period and for implementation of new measures in the subsequent year;

⑤ measures identified to address deficiencies and discrepancies including correction of data gaps and system weaknesses, new measures to improve implementation (e.g. training) as well as new carbon intensity improvement measures as needed;

⑥ where relevant, actions that will be taken to bring the ship into better CII ratings including estimated quantification of the additional expected reduction in carbon intensity;

⑦ where applicable, if a plan of corrective actions is required, the plan is to include items listed under 5.2.5 to bring the ship out of inferior performance;

⑧ where relevant, identification of critical factors that contributed to missing the CII target.

5.2.5 Plan of corrective actions

(1) For ships that are rated D for three consecutive years or rated as E, a plan of corrective actions is required to be included in SEEMP PART III and corrective actions are to be taken timely in accordance with the plan.

(2) For ships requiring a plan of corrective actions, the revised SEEMP PART III (including corrective action to reduce the CII) is to be submitted to CCS for verification.

(3) The purpose of the plan of corrective actions is to set out what actions a ship that was rated D for three consecutive years or E is to take to achieve at least a C rating for the calendar year following the adoption of the plan of corrective actions and ultimately the Required CII. The plan of corrective actions is ship-specific. Many of the approaches described in SEEMP PART I or any other suitable measure may be applied to a ship to improve its fuel efficiency and thus its CII rating.

(4) The plan for corrective action is to describe the actions that the ship plans to take, the timeline in which those actions will be applied, and the expected impact their application will have on the ship's CII rating. It is to be demonstrated how the corrective actions will contribute to achieving the Required CII, so as to ascertain the effectiveness of the corrective actions. Experience gained from previously taken corrective actions and their degree of effectiveness are to be taken into account when selecting the proper corrective actions. The plan of corrective actions is to be specific, measurable, achievable, realistic, and time-bound. It is to include:

① an analysis of the cause of the inferior CII rating;

② an analysis of the performance of implemented measures;

③ a list of additional measures and revised measures to be added to the implementation plan with time and method of implementation necessary for achieving the Required CII;

④ designation of a person to be responsible for the added and revised measures in the implementation plan, monitoring and recording performance of ship throughout the year and reviewing of the effectiveness of the corrective actions;

⑤ identification of possible impediments to the effectiveness of the measures for improving the energy efficiency and reducing the carbon intensity of the ship, including possible additional contingency measures put in place to overcome and how these impediments will be overcome.

(5) The implementation of the plan of corrective actions is to be monitored and adjusted when necessary. Additional measures are to be taken to strengthen corrective actions in case of insufficient intermediate results.

(6) The company is to ensure that it is in a position to perform the actions set out in the plan of corrective actions and confirm that it is able to do so when submitting its updated SEEMP.

5.2.6 Refer to Appendix 2 for the sample of SEEMP PART III.

5.3 Review and update

5.3.1 The Company is to periodically review SEEMP PART III.

5.3.2 For ships that are rated D for three consecutive years or rated as E, the company is to promptly review SEEMP PART III.

5.3.3 SEEMP PART III is to include a log for when it has been reviewed and updated and identify which parts have been changed.

Chapter 6 Audit and Verification of Seemp Part III

6.1 Types of audit and verification

6.1.1 The verification and audit process for SEEMP PART III according to regulation 26.3.3 of MARPOL Annex VI is to normally involve the following:

(1) initial verification;

(2) periodical verifications;

(3) additional verifications; and

(4) company audits.

6.1.2 The initial, periodical, additional verifications and company audits are to be based on documentary evidence.

6.1.3 Initial verification

(1) For each ship to which regulation 26.3 of MARPOL Annex VI applies, the company is to apply for an SEEMP PART III initial verification to ensure that the SEEMP complies with regulation 26.3.1 of MARPOL Annex VI. In accordance with regulation 5.4.6 of MARPOL Annex VI, this process must be done prior to 1 January 2023 for existing ships; for new ships or ships put in service again after 1 January 2023, this process must be done before the ship is put in service.

(2) For ships with a transfer of company after 1 January 2023, the new company is to apply for an SEEMP PART III initial verification to ensure that the SEEMP complies with regulation 26.3.1 of MARPOL Annex VI.

(3) On satisfactory assessment of SEEMP PART III, CCS can issue the Confirmation of Compliance (COC) as authorized by the Administration (sample format in Appendix 7).

6.1.4 Periodical verification

(1) If any of the elements in SEEMP PART III is updated, and in any case every three years, the company is to apply for a periodical verification.

(2) On satisfactory verification of SEEMP PART III, CCS is to issue the COC as authorized by the Administration

6.1.5 Additional verifications

(1) In the case of a ship rated as D for three consecutive years or a ship rated as E, an additional verification is to be performed to ensure that a plan of corrective actions has been established by the company in accordance with regulations 28.7 and 28.8 of MARPOL Annex VI.

(2) Additional verifications can be combined with fuel consumption data and operational carbon intensity verification. On satisfactory verification of the plan of corrective actions established by the company, CCS is to issue a new COC. The Statement of Compliance (SOC) cannot be issued until the additional verification is completed.

6.1.6 Company audits

(1) The company is to, in accordance with regulation 26.3.3 of MARPOL Annex VI, apply for periodical company audits to:

① verify that SEEMP PART III for which the Confirmation of Compliance has previously been issued complies with regulation 26.3.1 of MARPOL Annex VI and, in the case of non-compliance, require remedial action;

② confirm that the ship is being operated in accordance with SEEMP PART III, regardless of its rating;

③ verify the progress made in the (corrective) actions to be taken in the execution of the three-year implementation plan and the plan of corrective actions;

④ verify self-assessment and improvement of actions taken;

⑤ verify the assignment of responsibilities related to the implementation and monitoring of measures.

(2) The periodical company audits may include annual audits of the company (company audits) and verifications on board the ship (shipboard audits). The company audit is to be carried out once a year, generally in conjunction with the company's Document of Compliance (DOC) audit, and the shipboard audit is to be carried out according to the condition (CII rating) requirements.

6.2 Documents to be submitted for verification by the company

6.2.1 The company may submit the electronic application form and SEEMP PART III to the CCS branch where the company is located for SEEMP PART III approval.

6.2.2 If SEEMP PART II is not approved by CCS, the verified SEEMP PART II and COC - SEEMP PART II, Ship Registration Certificate/Nationality Certificate, IEEC, International Tonnage Certificate, IMO DCS emission report of the previous year and SOC are to be submitted.

6.2.3 If SEEMP PART III has been developed via CCS energy efficiency management system and submitted to CCS, the electronic SEEMP PART III is not required.

6.2.4 If the company submits the SEEMP PART III application for approval of the fleet in batch, it may apply by written email and attach the list of the fleet (including the basic information of the ships), instead of filling in the application for a single ship.

6.3 Requirements for verification

6.3.1 For initial verification/periodical verification, the verification is to consist of, but not be limited to, the following elements:

(1) verification of the method of calculations of the CII and that there is a proper description of the method to report ship data to the Administration;

(2) assessment of the effectiveness (of the combination) of measures, so that when implemented the ship will with reasonable assurance achieve the Required CII, including the goal as set in the SEEMP;

(3) robustness of the three-year implementation plan and, where applicable, the plan of corrective actions, including whether realistic timelines for implementation of actions have been included;

(4) verification of the process for self-assessment and improvement.

6.3.2 In the case of a ship rated as D for three consecutive years or a ship rated as E, an additional verification is to be performed to verify the plan of corrective actions established by the company.

6.3.3 Verification of implementation aspects of the SEEMP on board (monitoring, self-evaluation and improvements, etc.) may be combined with the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM) audits. The verifications may be carried out in accordance with guidelines on implementation of the ISM Code referred to in Chapter 15 of the ISM Code.

6.4 Disposal of nonconformity

6.4.1 The company is to be notified without delay of any nonconformity found in SEEMP PART III during the audit, and the company is to correct all nonconformities and resubmit the revised SEEMP PART III for review within the time agreed with CCS.

6.4.2 All nonconformities found during the audit that do not meet the requirements of MARPOL Annex VI and the Guidelines, whether or not they are corrected during the audit, are to be recorded in the audit report.

6.4.3 After the completion of audit, if any nonconformity (verification of emission report and ship operational carbon intensity rating, PSC/FSC inspection, feedback from third parties, etc.) in SEEMP PART III is found, the company is to be informed to carry out corrective action after it is assessed and confirmed by CCS. The revised SEEMP PART III is to be submitted to CCS for periodical verification. CCS will withdraw the SEEMP PART III Confirmation of Compliance of the ship if the revision is not completed as required and CCS assessment is not satisfactory.

6.5 Issuance of confirmation of compliance

6.5.1 Based on the information collected during the audit of SEEMP PART III, CCS is to promptly notify the company of the audit conclusion in writing and clearly state whether there is any nonconformity in SEEMP PART III and whether it meets the relevant requirements of MARPOL Annex VI and the Guidelines.

6.5.2 Upon audit, if the relevant requirements of the Guidelines are met, CCS will issue a COC which is to be kept on board.

Appendix 1

Guidance on Reporting of Fuel Oil Consumption and Distance Travelled For Voyage Periods Where the Ship Meets the Criteria to Apply any Voyage Adjustment

In this appendix guidance is given for reporting and verification of fuel oil consumption and distance travelled concerning voyage adjustments when a scenario specified in regulation 3.1 of MARPOL Annex VI applies, which may endanger safe navigation of a ship, or when sailing in ice conditions.

1. Fuel oil consumption for voyage periods is to include all the fuel oil consumed on board including but not limited to the fuel oil consumed by the main engines, auxiliary engines, gas turbines, boilers and inert gas generator, for each type of fuel oil consumed, regardless of whether a ship is under way or not. Methods for collecting data on fuel oil include the method using flow meters or method using bunker fuel tank monitoring on board as described in CCS Guidelines for the Monitoring, Reporting and Verification of CO_2 Emissions.

2. The distance travelled over ground in nautical miles for voyage periods is to be recorded in the logbook in accordance with SOLAS regulation V/28.1 and submitted to the Administration.

3. At the end of the voyage, if the ship has encountered ice conditions during its voyage, when the ship was under way sailing between the ice edges or between the ice edge and the port, or when a scenario specified in regulation 3.1 of MARPOL Annex VI applies:

(1) the fuel oil consumed is not to be included in the calculations for the Attained CII index value;

(2) if the voyage period is excluded from calculations of the Attained CII index value when a scenario specified in regulation 3.1 of MARPOL Annex VI applies, the distance travelled is to be clearly marked in the SEEMP monitoring plan, the ship's logbook is to include data entries for the voyage period with date, time and position of the ship, when a scenario specified in regulation 3.1 of MARPOL Annex VI started to apply and ceased to apply, and data is to be added to the data reporting format;

(3) if the voyage period is excluded from calculations of the Attained CII index value due to sailing in ice conditions, the distance travelled is to be clearly marked in the SEEMP monitoring plan, the ship's logbook is to include data entries for the voyage period with date, time and position of the ship when the ship encountered ice conditions and left ice conditions, and data is to be added to the data reporting format.

4. The summary of monitoring data containing records of measured fuel oil consumption and distance travelled for voyage periods is to be available on board. Ice charts related to the voyage periods are also to be available if the ship has sailed in ice conditions. (Figure 1: An example of an ice chart of the Baltic Sea area)

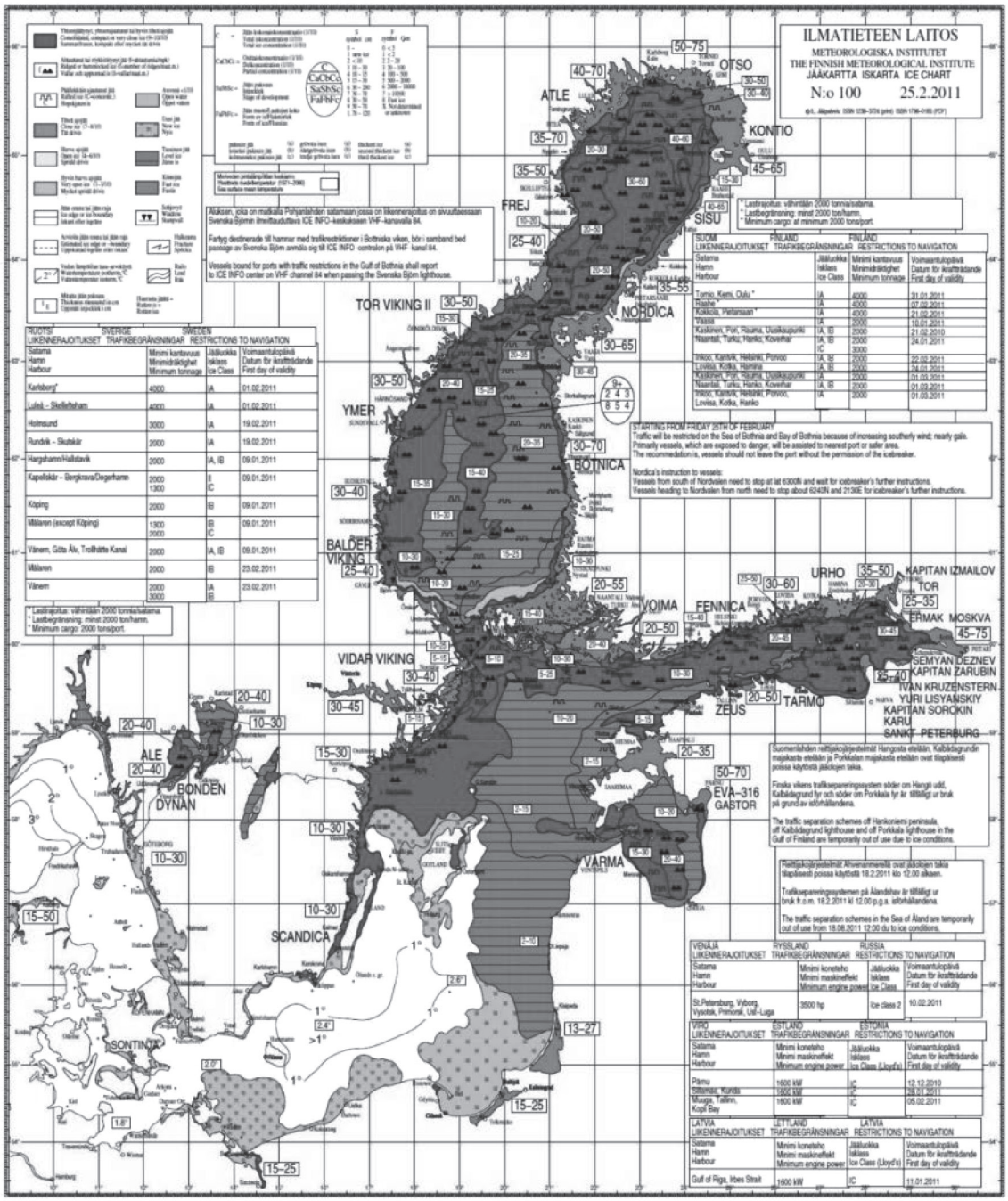

Figure 1 An example of an ice chart of the Baltic Sea area

Appendix 2

Sample Form of Ship Operational Carbon Intensity Plan
(SEEMP PART III)

1 Review and update log

Date/timeline	Updated parts	Developed by	Implemented by
<1st time>			
<2nd time>			
Etc.			

2 Required CII over the next three years, Attained CII and rating over three consecutive years

Name of the ship			IMO number	
Company			Year of delivery	
Flag			Ship type	
Gross tonnage			DWT	
Applicable CII	☐ AER; ☐ cgDIST			
Year	Required annual operational CII	Attained annual operational CII (before any correction)	Attained annual operational CII	Operational carbon intensity rating (A, B, C, D or E):
<year -1>				
<year -2>				
<year -3>				
	Required annual operational CII			
<year >:				
<year +1>				
<year +2>				

3 Calculation methodology of the ship's attained annual CII, including required data and how to obtain these data as far as not addressed in SEEMP PART II

Description

4 Three-year implementation plan

Description

Company personnel to be responsible for the three-year implementation plan, monitoring and recording performance

List of measures to be considered and implemented

Measure	Impact on CII	Time and method of implementation and responsible personnel			Impediments and contingency measures	
		Milestone	Due	Responsible	Impediment	Contingencies
		Milestone	Due	Responsible	Impediment	Contingencies
		Milestone	Due	Responsible	Impediment	Contingencies

Calculation showing the combined effect of the measures and that the required operational CII will be achieved

Year	Required annual operational CII	Targeted operational annual CII	Targeted rating
<year >:			
<year +1>			
<year +2>			

5 Self-evaluation and improvement

Description

6 Plan of corrective actions (if applicable)

Analysis of causes for inferior CII rating

Cause	Analysis of effect	Actions

Analysis of measures in the implementation plan

Measure	Analysis of effect	Actions

List of additional measures and revised measures to be added to the implementation plan

Measure	Impact on CII	Time and method of implementation and responsible personnel			Impediments and contingency measures	
		Milestone	Due	Responsible	Impediment	Contingencies

Appendix 3

Standardized Data Reporting Format for the Data Collection System and Operational Carbon Intensity to the Administration

Name of the ship		IMO number	
Company		Year of delivery	
Flag		Ship type	
Gross tonnage		DWT	
Applicable CII	☐ AER; ☐ cgDIST		
Operational carbon intensity rating		☐ A; ☐ B; ☐ C; ☐ D; ☐ E	
CII for trial purpose (none, one or more on voluntary basis)		☐ EEPI; ☐ cbDIST; ☐ clDIST; ☐ EEOI	
Attained annual operational CII before any correction (AER in g CO_2/dwt.nm or cgDIST in g CO_2/gt.nm)			
Attained annual operational CII (AER in g CO_2/dwt.nm or cgDIST in g CO_2/gt.nm)			
End date for annual CII (dd/mm/yy)*			
Start date for annual CII (dd/mm/yy)*			
Attained EEDI (if applicable)			
Attained EEXI (if applicable)			
EEPI(gCO_2/dwt.nm)			
cbDIST(gCO_2/berth.nm)			
clDIST(gCO_2/m.nm)			
EEOI(gCO_2/t.nm or others)			
……			
……			
IMO number			
End date for DCS (dd/mm/yy)			
Start date for DCS (dd/mm/yy)			

Appendix 4

Standardized Data Reporting Format for the Parameters to Calculate the Trial Carbon Intensity Indicators on Voluntary Basis

Attained annual EEOI	
Metric of Cargo Mass Carried or Work Done in EEOI calculation (gCO_2/t.nm or others)*****	
Transport work*****	
Attained annual EEPI(gCO_2/dwt.nm)	
Laden distance travelled (n.m)	
Attained annual clDIST(gCO_2/m.nm)****	
Length of lanes (metre) ****	
Attained annual cbDIST(gCO_2/berth.nm)***	
Available lower berths***	
End date for trial CII (dd/mm/yy)**	
Start date for trial CII (dd/mm/yy)**	
IMO number**	
End date for DCS (dd/mm/yy)**	
Start date for DCS (dd/mm/yy)**	

* For reporting a trial CII, the data is to be reported as applicable taking into account the information already provided in appendix 3.

** Consistent with Appendix 3.

*** Only applicable to cruise passenger ships.

**** Only applicable to ro-ro ships.

***** As defined in section 2.4.5.4 of CCS Guidelines for the Development of Ship Energy Efficiency Management Plan (SEEMP). The distance travelled is to be determined from berth of the port of departure to berth of the port of arrival and is to be expressed in nautical miles.

Appendix 5 Sample of the Collected Data Summaries

Date and time from (dd/mm/yyyy; hh:mm UTC)	* Date and time to (dd/mm/yyyy; hh:mm UTC)	Distance travelled (n.m)	Hours under way (hh:mm)	**Exceptional conditions specified in regulation 3.1 of MARPOL Annex VI (Y/N)	**Sailing in ice condition (Y/N)	**STS Operation (Y/N)	Fuel consumption (metric tons)							
							Total mass		**Mass to be deducted from the total					
									Consumed for production of electrical Power ($FC_{electrical}$)		Consumed by oil-fired boiler for cargo heating/discharge on tankers (FC_{boiler})		Consumed by standalone engine driven cargo pumps during discharge operations on tankers (FC_{others})	
							***DO/GO	...	DO/GO	...	DO/GO	...	DO/GO	...
01/01/2023 00:00	01/01/2023 13:20	150	13:20	N	N	N								
01/01/2023 13:20	01/01/2023 24:00	60	10:40	N	Y	N								
02/01/2023 00:00	02/01/2023 24:00	288	24:00	N	N	Y								
03/01/2023 00:00	03/01/2023 24:00	260	24:00	N	N	Y								
.....	.....	.....	.....	.....	.....	.....								
.....	.....	.....	.....	.....	.....	.....								
31/12/2023 00:00	31/12/2023 24:00	290	24:00	N	N	N								
Annual total														

* In the case of daily underlying data, this column would be left blank.

** Refer to 3.3.2 of the Guidelines. Supporting documentation may be additionally submitted to facilitate the verification when necessary, such as Baplie files where the number of in-use reefer containers on board are recorded. Note that voyages in different sailing or operational conditions should be recorded in separate rows so that the correction factors and voyage adjustments can be duly calculated and verified.

*** Refer to fuel types specified in 3.1.2 of the Guidelines.

Explanatory remarks: If bunker supply/correction data have been recorded in a company's electronic reporting system, the data is acceptable to be submitted in the existing format instead of submitting the data by this format.

Appendix 5-1

Sample of the Collected Data Summaries to Calculate Trial CII on a Voluntary Basis

The following aggregated data should be additionally included in the table in Appendix 5, if one or more trial CII metrics have been applied on a voluntary basis:

Date from (dd/mm/yyyy)	*Date to (dd/mm/yyyy)	Laden distance travelled (n.m)	****Transport work (metric of transport work)
01/01/2023			
02/01/2023			
03/01/2023			
31/12/2023			
Annual total			

* In the case of daily underlying data, this column would be left blank.

**** As defined in 3.5 of Appendix 6 of CCS Guidelines for the Development of Ship Energy Efficiency Management Plan (SEEMP).

Explanatory remarks: If bunker supply/correction data have been recorded in a Company's electronic reporting system, the data is acceptable to be submitted in the existing format instead of submitting the data by this format.

Appendix 6

Sample of the Aggregated Data Before a Transfer of Flag/Company

Date of transfer (dd/mm/ yyyy)	Type of transfer (flag/ company/ both)	Reporting period		Distance Travelled (n.m)		Hours under way (hh:mm)	[Hours of operation (cruise ships only) (hh: mm)]	Fuel consumption (metric tons)					
		Date from (dd/mm/ yyyy)	Date to (dd/mm/ yyyy)	Total distance travelled	*Distance to be deducted from CII calculation			Total mass		*Mass to bededucted from the total		**Mass consumed in STS operations	
								***DO/GO	...	DO/GO	...	DO/GO	...
12/05/2023	Flag	01/01/2023	11/05/2023										
15/06/2023	Company	12/05/2023	14/06/2023										
02/11/2023	Both	15/06/2023	01/11/2023										

* Refer to the aggregated mass of fuel consumption to calculate FC_{voyage}, $FC_{electrical}$, FC_{boiler} and FC_{others} in the Guidelines.

** Refer to the aggregated mass of fuel consumption to calculate $AF_{tanker, STS}$ in the Guidelines.

*** Refer to fuel types specified in 3.1.2 of the Guidelines.

Appendix 6-1

Sample of the Aggregated Data Before aTransfer of Flag/Company to Calculate Trial CII Metrics on a Voluntary Basis

The following aggregated data may be additionally included in the table in Appendix 2, if one or more trial CII metrics have been applied on a voluntary basis:

Date of transfer (dd/mm/yyyy)	Type of transfer (flag/company/both)	Reporting period		Laden dstance travelled (n.m)	****Transport work (metric of transport work)
		Date from (dd/mm/yyyy)	Date to (dd/mm/yyyy)		
12/05/2023	Flag	01/01/2023	11/05/2023		
15/06/2023	Company	12/05/2023	14/06/2023		
02/11/2023	Both	15/06/2023	01/11/2023		
.....					

**** As defined in 2.4.5.4 of CCS Guidelines for the Development of Ship Energy Efficiency Management Plan (SEEMP).

Appendix 7

Sample Format for Confirmation of Compliance

Confirmation of Compliance – Seemp Part III

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 related 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. . . . .
SEEMP part III date of revision, as applicable . . . .

THIS IS TO CONFIRM:

Taking into account the 2022 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP) adopted by resolution MEPC.346(78), the ship's SEEMP has been developed and complies with regulation 26.3.1 of Annex VI of the Convention.

Issued at: . . . .
(place of issue of the Confirmation)

Date
(dd/mm/yyyy) . . . .

(date of issue) (signature of duly authorized official issuing the Confirmation)

(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, adopted by the Organization by resolution A.1117(30).

Appendix 8

Form of 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

Name of ship…….....…

Distinctive number or letters…….....……

IMO Number…….....….

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);

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;

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; 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)

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)