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ENERGY EFFICIENCY OF SHIPS

A discrepancy in the definition of "capacity" for the CII calculations in the CII Guidelines, G1, and the CII Guidelines, G5

Submitted by Republic of Korea and IACS

SUMMARY

Executive summary:	This document raises a discrepancy in the definition of "capacity" for CII calculations between *the 2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII Guidelines, G1)* and the *2022 Interim Guidelines on correction factors and voyage adjustments for CII calculations (CII Guidelines, G5)*, causing unintended consequences for the CII ratings of individual ships and proposes a correction to the definition of "capacity" in the *CII Guidelines, G5* to prevent undesirable incentives and to ensure a technically robust implementation of the CII requirements.
Strategic direction, if applicable:	3
Output:	3.7
Action to be taken:	Paragraph 14
Related documents:	MEPC 78/7/11 and MEPC 78/17/Add.1

Introduction

1 The Marine Environment Protection Committee, at its seventy-second session, adopted resolution MEPC.304(72) on *Initial IMO Strategy on Reduction of GHG Emissions from Ships* (hereinafter the Initial IMO Strategy). Subsequently, MEPC 76 adopted resolution MEPC.328(76) on *2021 Revised MARPOL Annex VI* concerning mandatory goal-based technical and operational measures to reduce carbon intensity of international shipping to realize the short-term measures such as the requirements on the EEXI, Carbon Intensity Indicator (CII) and SEEMP part III as planned in the Initial IMO Strategy, as well as the technical guidelines to support the implementation of those new measures.

2 MEPC 76 established the Correspondence Group on Carbon Intensity Reduction to develop, inter alia, guidelines on correction factors for certain ship types, operational profiles and/or voyages for the CII calculations *(CII Guidelines, G5)*.

3 Having considered the final report of the Correspondence Group (MEPC 78/7/11 (China et al.)), MEPC 78 adopted 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)).

4 In adopting these CII technical guidelines, MEPC 78 agreed to keep the guidelines under review in light of experience gained with their implementation, of additional data and analyses, also taking into consideration that a review of the operational measure to reduce carbon intensity of international shipping shall be completed by 1 January 2026 in accordance with regulation 28.11 of MARPOL Annex VI.

Discussion

5 The CII Guidelines, G1 stipulate how to calculate the CII of individual ships in implementing regulation 28 of MARPOL Annex VI, as follows:

$$attained\ CII_{ship} = FC_j \times C_{Fj} \ / C \times D_t$$

6 According to the CII Guidelines, G1, the coefficient *C* represents the ship's capacity, meaning the actual ship's deadweight tonnage (DWT) for bulk carriers, tankers, container ships, gas carriers, LNG carriers, general cargo ships, refrigerated cargo carriers and combination carriers) or gross tonnage (GT) for cruise passenger ships, ro-ro cargo ships (vehicle carriers), ro-ro cargo ships and ro-ro passenger ships.

7 However, the CII Guidelines, G5 provide a different definition of capacity for the calculation of the attained CII when applying correction factors and voyage adjustments, as follows:

"

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

Where:

...

- *Capacity* is deadweight or gross tonnes as defined for each specific ship type in the *2022 Guidelines on the reference lines for use with operational carbon intensity indicators (CII reference lines guidelines, G2)* (resolution MEPC.353(78));"

8 As the CII Guidelines, G5 reference the capacity definition as outlined in the CII reference lines guidelines, CII Guidelines, G2, it is important to recall that the CII reference lines guidelines (CII Guidelines, G2) provide the method for calculating ship type-specific operational carbon intensity reference lines, as follows:

"$CII_{ref} = aCapacity^{-c}$"

The capacity for determining the ship type specific reference lines, for use in that equation, appears in table 1 of the same CII Guidelines, G2 reproduced below.

9 As can be seen, in respect of the definition of capacity, there are variations, for certain ship types and sizes, between the capacity used to define the reference lines and the actual ship's capacity. The specific ships which are affected are highlighted in *italics* of table 1 (resolution MEPC.353(78)), as follows:

Table 1: Parameters for determining the 2019 ship type specific reference lines

Ship type		Capacity	*a*	*c*
Bulk carrier	*279,000 and above*	*279,000*	4745	0.622
	less than 279,000 DWT	DWT	4745	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

10 As a result, when calculating the attained CII value for these ships, the actual capacity will be considered unless voyage adjustments or correction factors are applied. However, should the ship opt to apply a correction factor or a voyage adjustment, the capacity used in calculating the attained CII values will subsequently change solely due to the application of these correction factors or voyage adjustments.

11 This distinction in the definitions of capacity between the CII Guidelines, G1 and the CII Guidelines, G5 (particularly for specific ship type categories like bulk carriers of 279,000 DWT and above, LNG carriers of less than 65,000 DWT and ro-ro cargo ships (vehicle carriers) of 57,700 GT and above) creates a situation where the application of the *CII Guidelines, G5* introduces unequal treatment. For these three ship types, a ship not benefitting from a correction factor/voyage adjustment will be subjected to a different capacity value compared to a ship of the same type which can claim such benefits.

12 Consequently, while considering this approach as unhelpful in ensuring a level playing field across all ship types (when applying voyage adjustments or correction factors) and not being able to find any technical justification which led to this difference between the two instruments, the co-sponsors believe the matter to be one of the unintended misalignments at the time of preparation of the package of CII-related documents and that the reference in the definition of capacity in the CII Guidelines, G5 should be to the CII Guidelines, G1.

Proposal

13 Therefore, given the purpose and nature of the CII requirements, the co-sponsors propose a correction to the definition capacity appearing in the CII Guidelines, G5 as follows:*

> "*Capacity* is deadweight or gross tonnes as defined for each specific ship type in the *2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII Guidelines, G1)* (resolution MEPC.352(78)) ~~*2022 Guidelines on the reference lines for use with operational carbon intensity indicators (CII Reference lines Guidelines, G2)* (resolution MEPC.353(78));~~".

Action requested of the Committee

14 The Committee is invited to consider the foregoing, the proposal in paragraph 13, and take action, as appropriate.

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* Tracked changes are indicated using "strikeout" for deleted text and "grey shading" to highlight all modifications and new insertions, including deleted text.