INTERNATIONAL MARITIME ORGANIZATION

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ENERGY EFFICIENCY OF SHIPS

Anomalies within the CII reference line for bulk carriers

Submitted by ICS and INTERCARGO

SUMMARY

Executive summary:	This document highlights anomalies within the reference line that is utilized by the Carbon Intensity Indicator (CII) for bulk carriers.
Strategic direction, if applicable:	3
Output:	3.2
Action to be taken:	Paragraph 8
Related documents:	MEPC 76/7/43, MEPC 76/INF.10; MEPC 79/7/27; MEPC 80/6/3, MEPC 80/17/Add.1 and ISWG-GHG 12/2/5

Introduction

1 Regulations 25 and 28 of MARPOL Annex VI identify that a review of the short-term GHG reduction measures (including the CII regulations) should be carried out and this must be completed by 1 January 2026.

2 MEPC 80 approved the Review plan of the short-term GHG reduction measures (MEPC 80/17/Add.1, annex 13), with the following invitation therein:

> "Interested Member States and international organizations are invited to collect data and submit information and proposals to the relevant MEPC meetings during the data gathering stage.
>
> Additionally, other stakeholders (e.g. shipowners, charterers, manufacturers, ports authorities, etc.) are invited to provide data to facilitate the review process, through the designated email address: ghg@imo.org"

Observed anomalies

3 During data evaluation, ship managers have recently recognized that the CII reference line for bulk carriers is not accurately reflecting the fuel efficiency of various subgroups of ships that the reference line applies to. For example, figure 1 below plots the CII ratings of handy, supra, kamsarmax and cape sized bulk carriers against deadweight. The coloured lines also represent the CII rating boundaries. Whereas the larger cape size ships are achieving generally satisfactory ratings, the smaller handy and supra sized ships are all outliers and not achieving the required A, B or C ratings. These subgroups not only vary in their size but, in some cases, their design. For example, the supramax was developed out of the panamax and is limited in its dimensions to allow operation from certain ports, e.g. for purposes of exporting grain from the Mississippi River. Hence, owing to these design variations, there are also variations in the normal fuel consumption of these subgroups, when compared to the majority of bulk carriers.

4 Another factor that is unfairly penalizing some of these subgroups is the methodology that was used to derive the reference line, whereby the regression line fits that were used to derive the reference lines are influenced more heavily by the more populous groups than the smaller subgroups, i.e. the shape of the resulting curve tends to be driven by the majority of bulk carriers and the minority subgroups have little impact on the shape of the curve.

5 It is also important to recall the previous submissions such as documents ISWG-GHG 12/2/5 and MEPC 79/7/27 (ICS and INTERCARGO), MEPC 76/7/43 (INTERCARGO) and MEPC 80/6/3 (Liberia) which have highlighted the CII compliance problems that self-unloading bulk carriers and geared bulk carriers are experiencing. These two are subgroups of bulk carriers that are designed and operated very differently to the majority of bulk carriers but are currently required to use the same one-size-fits-all reference line.

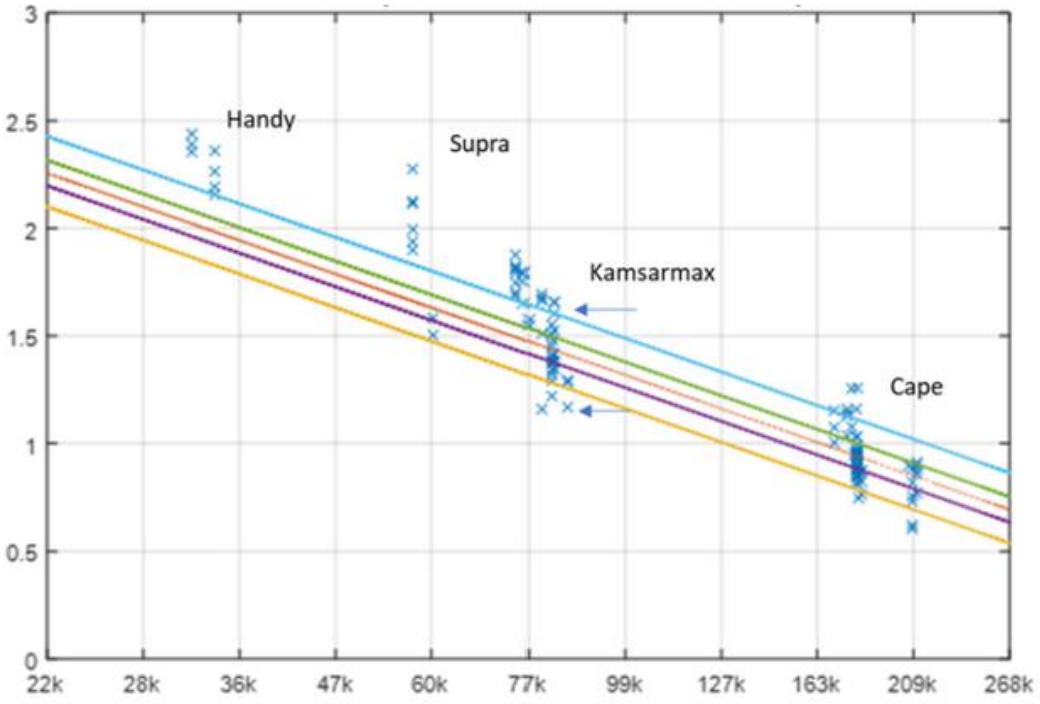

Figure 1: CII ratings for various bulk carrier subgroups

(source: https://vesops.dk/back-to-the-ciis-does-the-cii-rating-has-anything-to-do-with-fuel-efficiency)

6 Figure 2 below further illustrates the point by plotting some typical achieved supramax AER ratings. The green line is fitted through the supramax data whereas the blue line represents the bulk carrier reference line (as taken from document MEPC 76/INF.10). As can be seen, the supramax ships all lie above the required AER values.

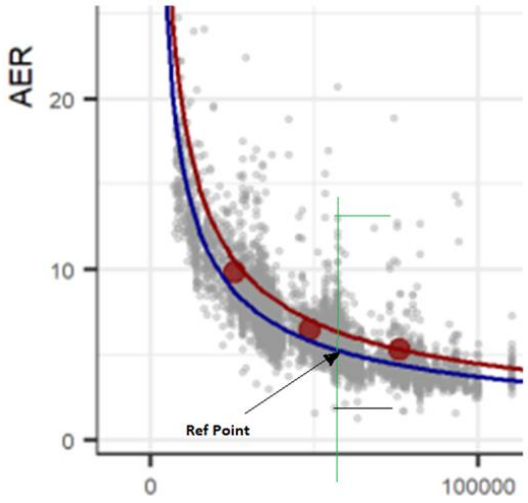

Figure 2: Achieved supramax AER ratings and the bulk carrier reference line

Potential solutions

7 Potential solutions to these anomalies could include dedicated reference lines for such subgroups (e.g. as previously proposed by document MEPC 79/7/27) or additional correction factors (e.g. as proposed by document MEPC 80/6/3). The co-sponsors are open to other solutions that may be put forward during the discussions at MEPC 82.

Action requested of the Committee

8 The Committee is invited to consider the information provided in this document, and in particular to consider instructing the Working Group on Air Pollution and Energy Efficiency (if established at MEPC 82) to give due consideration to the anomalies detailed in paragraphs 3 to 6 and the potential solutions proposed in paragraph 7, and take action as appropriate.