INTERNATIONAL MARITIME ORGANIZATION

E

INTERSESSIONAL MEETING OF THE
WORKING GROUP ON REDUCTION OF
GHG EMISSION FROM SHIPS
8th session
Agenda item 3

ISWG-GHG 8/3
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ENGLISH ONLY

GUIDELINES SUPPORTING THE CII FRAMEWORK

Choice of metrics for capacity for ro-ro cargo ships and using a GT/DWT-distinction for the ro-ro cargo ship reference line for annual operational CII

Submitted by INTERFERRY

SUMMARY

Executive summary:	Based on extensive data analysis, INTERFERRY suggests that all ro-ro type ships (cargo/passenger/vehicle carriers) should make use of GT as the measure of capacity for the purposes of the CII framework. Additionally, due to inherent diversity issues within the ro-ro cargo sector it is suggested to split the reference line for the ro-ro cargo ship sector at 25,000 DWT.
Strategic direction, if applicable:	3
Output:	3.2
Action to be taken:	Paragraph 14
Related document:	MEPC 76/7/3

Introduction

1 MEPC 75 established a Correspondence Group (CG) on the Development of Technical Guidelines on Carbon Intensity Reduction, under the joint coordination of China, Japan and the European Commission, which, inter alia, should "further consider and develop draft Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines)" including "the formula of CII of individual ships, especially the proxies for transport work".

2 For Round 3 of the CG, INTERFERRY had conducted a comprehensive assessment and found that out of the options available, cgDIST provided the best representation of transport work energy efficiency for all ro-ro type ships. This recommendation is noted in the CG Report, but the report also notes that a majority of the CG members had shown a preference for AER for ro-ro cargo ships.

3 For volume carriers like ro-ro cargo ships, our technical analysis show that cgDIST will provide a more fair and robust outcome than AER, which would unfairly favour smaller size ships to the detriment of larger size ships (see figure 2). The below plots only show ships below 25,000 DWT as this is in line with the proposal of INTERFERRY to divide the ro-ro cargo ship into two size bins, but the same outcome is valid also for ships above 25,000 DWT.

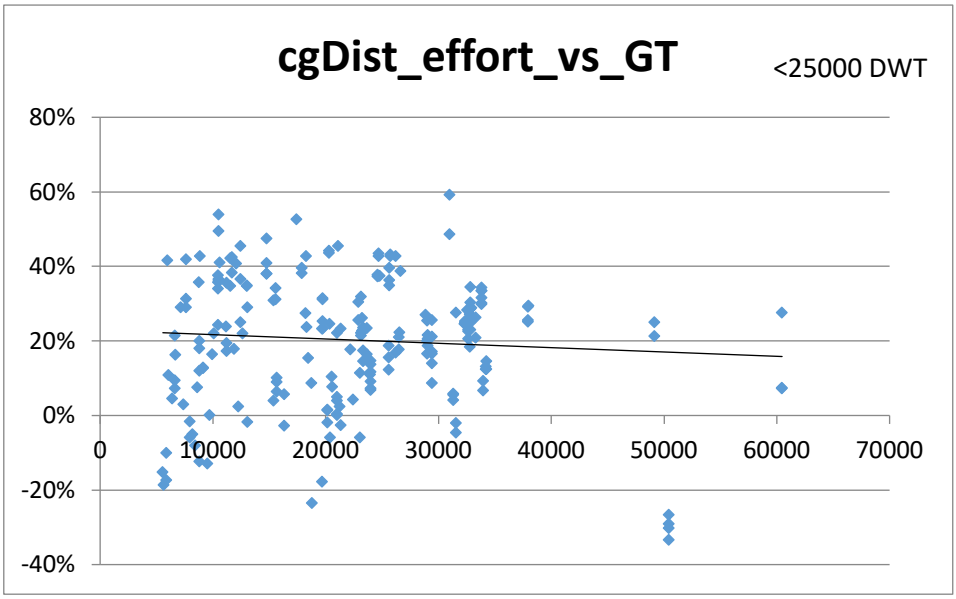

Figure 1 – Average effort to meet CII requirement (here depicted as 0%) is evenly distributed when using cgDIST.

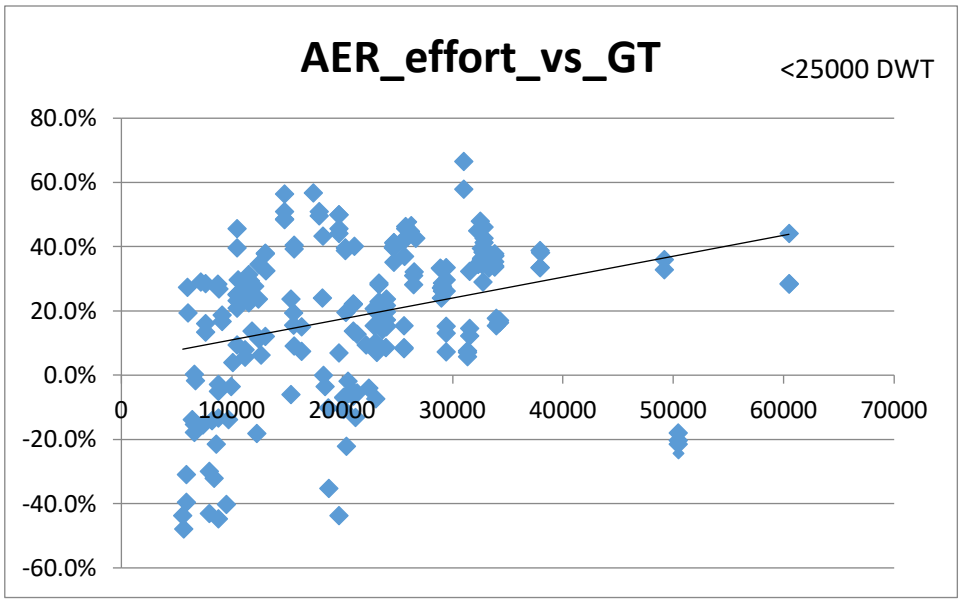

Figure 2 – Average effort to meet CII requirement (here depicted as 0%) increases with size when using AER

4 INTERFERRY believes that due to the short timeline for the CG it was not possible for most participants to review these findings in time for their recommendations. INTERFERRY therefore re-iterates its recommendation to use cgDIST for all ro-ro type ships.

Ship types

5 When EEDI was developed, and ship categories defined, care was taken to ensure that the categorization of ships would offer a "fair and robust" application of the requirements. To that end, some principles were adhered to, inter alia that ships that cannot do each other's work, should not be put into the same category.

6 At that time, it was not clear that the same categorization would also be used later for the implementation of CII, and it is clear to INTERFERRY that a transposition of the EEDI ship categories (MARPOL Annex VI, regulations 2.25 to 2.42) will not necessarily offer a "fair and robust" application for all ships.

7 The MRV dataset for 2019 shows two distinct size bins for ro-ro cargo ships, below and above 25,000 DWT. The presence of large, deep-sea container ro-ro ships (classified as con-ro ships in the EU MRV system) have a pronounced influence on the regression line.

8 There are also a number of smaller con-ro ships in the dataset, in the same size magnitude as pure ro-ro cargo ships, but since their nominal CII performance is indistinguishable it would not make sense to establish a separate reference line for con-ro ships, as that would penalize the smaller con-ro ships. This issue is fundamentally due to the two distinct size-bins in the combined fleet.

Figure 3 – con-ro ship

Figure 4 – pure ro-ro cargo ship

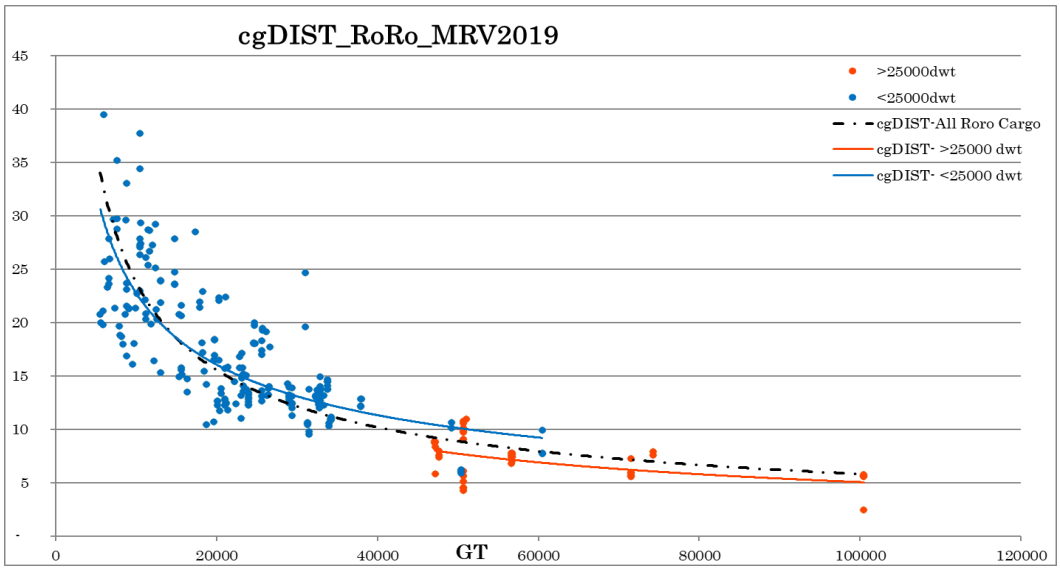

Figure 5 – Two distinct size bins in the ro-ro cargo population, note that the size bins are based on DWT while the capacity for RoRo (cargo) is GT. This highlights the fact that pure ro-ro cargo is volume carriers with high GT and relatively low DWT, while for con-ro, high GT is also associated with high DWT

9 If large, deep-sea oriented con-ro ships are kept in the same dataset as pure ro-ro cargo ships, the newest, largest and most CO_2-efficient pure ro-ro cargo ships would be unreasonably far from the 2030 CII level.

10 Ro-ro cargo and con-ro ships do not service the same markets and are thus not interchangeable and seeing how state-of-the-art ships are not ranked better than the average of the existing fleet, we conclude that something is conceptually wrong.

11 It is therefore recommended to split the ro-ro cargo sector into two size bins, below and above 25,000 DWT. In doing so, the deep-sea portion of the con-ro ships would effectively be separated. To those ships, the reference line would only change marginally as compared to the initial setup.

12 For the lower capacity ships, both con-ro and pure ro-ro cargo, the new break-out reference line shows significantly less penalty to the larger end of the spectrum (i.e. approaching 20,000 DWT), without significantly altering the regression curve at the lower end of the spectrum. This is consistent with the general notion that larger ships are more efficient.

13 There are no ro-ro cargo ships between 20,000 DWT and 25,000 DWT listed in IHS or the MRV dataset, so there will be no apparent threshold-effects for existing ships due to this suggested split.

Action requested of the Working Group

14 The Group is invited to consider this document and take action as appropriate, and in particular, to endorse INTERFERRY's recommendation that:

.1 cgDIST is used also for ro-ro cargo ships; and

.2 the ro-ro cargo ship type (not vehicle) is split into two size bins, below and above 25,000 DWT.