INTERNATIONAL MARITIME ORGANIZATION

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INTERSESSIONAL MEETING OF THE
WORKING GROUP ON AIR POLLUTION
AND ENERGY EFFICIENCY
1st session
Agenda item 2

ISWG-APEE 1/2/5
18 February 2025
ENGLISH ONLY
Pre-session public release: ☒

FURTHER CONSIDERATION OF POSSIBLE OPTIONS TO ADDRESS THE IDENTIFIED CHALLENGES/GAPS IN THE SHORT-TERM GHG REDUCTION MEASURE

Update on the study on the revised CII reference lines excluding ships' emissions at idle times

Submitted by Bahamas, Liberia, ICS, BIMCO and INTERCARGO

SUMMARY

Executive summary:	This document presents updated information on the study conducted by the American Bureau of Shipping (ABS), which was submitted at MEPC 82, on the proposal for a revised Carbon Intensity Indicator (CII) framework. The revised framework aims to address the increase in attained CII due to idle emissions (such as emissions from port operations, anchorage, and drydock). The study has been further enhanced using additional data from Det Norske Veritas (DNV) to strengthen its findings and the methodology presented.
Strategic direction, if applicable:	3
Output:	3.2
Action to be taken:	Paragraph 16
Related documents:	MEPC 82/6/31 and MEPC 82/INF.46

Introduction

1 MEPC 82 agreed to conduct the review of the short-term GHG reduction measures based on a gap analysis and a two-phase approach, addressing some issues prior to 1 January 2026 (phase 1), whereas others may be extended after 1 January 2026 (phase 2). To determine whether the identified challenge/gap may be addressed within phase 1 or phase 2 the Committee agreed on the following criteria:

.1 whether or not the challenge/gap necessitates thorough data analysis;

.2 whether or not the possible options to address the challenge/gap may conflict with the mid-term measures under development; and

.3 whether or not the challenge/gap needs to be urgently addressed.

2 Document MEPC 82/6/31 (Brazil et al.) proposed amendments to the existing CII framework suggesting the development of revised CII reference curves while excluding idle emissions (i.e., emissions generated in port, anchorage and drydock).

3 Document MEPC 82/INF.46 (Liberia et al.) contained the study that served as the basis for the proposal for the revision of the framework. This study was carried out using the ABS' verified 2019 IMO DCS data, for the ship types of tankers, bulk carriers, containerships, LNG carriers, general cargo ships and gas carriers.

4 Although the study's data set was a subset of the IMO DCS data set, it was validated by comparing the reference lines (derived under the existing framework) with the existing ones. This comparison showed a strong similarity between the two, confirming that the data set is a representative sample of the IMO DCS 2019 data set, thus enabling the derivation of revised reference lines.

Discussion

5 MEPC 81 adopted amendments to Appendix IX of MARPOL Annex VI on Information to be submitted to the IMO Ship Fuel Oil Consumption Database (Regulation 27) by resolution MEPC.385(81), introducing inter alia the reporting of fuel oil consumption per consumer type when the ship is not underway. These amendments will enable data-driven decision making in the future and drive more precise optimization of energy use onboard.

6 MEPC 82 approved circular MEPC.1/Circ.913 on *Guidance on the application of the amendments to Appendix IX of MARPOL Annex VI on inclusion of data on transport work and enhanced granularity in the IMO Ship Fuel Consumption Database (IMO DCS) as adopted by resolution MEPC.385(81)*, to clarify the entry into force of the amendments, making mandatory their application from 1 January 2026, while advising their voluntary application from 1 January 2025.

7 MEPC 82 had instructed the Correspondence Group to further consider possible options to address the identified challenges/gaps in the short-term GHG reduction measure. During discussion, a clear majority of members expressed their preference to further consider the metric change to exclude the fuel consumptions not underway (i.e., idle, at anchorage, in port and in drydock) in phase 2, highlighting that the analysis should be carried out using the data to be collected by the revised IMO DCS.

8 This data will be available to the Organization for the first time in 2026 (for those ships that voluntarily apply the amendments in 2025), and in 2027 for all ships as per regulation 27 of MARPOL Annex VI.

9 Document MEPC 82/6/31 proposed a methodology to address the issue of the unfair CII ratings for ships with increased idle emissions and of potentially counterproductive CII improvement methods aiming to ensure a fair and harmonized implementation of the CII regulatory framework while incentivizing overall GHG reduction. Document MEPC 82/INF.46 presented the methodology, and its results based on the ABS' 2019 IMO DCS data set.

10 It must be noted that the data set based on which the study was carried out did not have the necessary granularity, and the revised reference curves presented in document MEPC 82/INF.46 excluded only emissions generated in port while retaining emissions generated at anchorage and in drydock.

11 Nevertheless, the aim of both submissions was to propose a methodology. Should the Organization approve this methodology, recalculation of the reference curves will be

necessary using the verified IMO DCS data with the increased granularity, which will be available to the Organization for all vessels as per MARPOL Annex VI, Regulation 27 in 2027.

12 Although the ABS' data set was representative of the IMO DCS 2019 data set, it still carried a certain level of uncertainty. To enhance the data set and provide more robust results, the ABS' data set was supplemented with additional data from DNV's verified IMO DCS 2019 data set.

13 The annex to this document contains the revised results of the study using the 2019 ABS' and DNV's data set for deriving new reference lines and rating boundaries under the proposed framework. As the data set becomes more enriched, the reference lines derived from the 2019 ABS' and DNV's data set under the current framework increasingly align with the existing reference lines (figure 1 of the annex to this document), further demonstrating that the study's data set is representative of the 2019 IMO DCS data set.

14 The proposed framework will better align the CII ratings with actual under way operational efficiency since the emissions during idle time are not being considered and ships will not be incentivized to increase their distance travelled, in pursuit of improved CII ratings; and thus, increasing the total GHG emissions.

15 The proposed framework also recognizes the importance of addressing these idle emissions in the broader context of their environmental impact by promoting port infrastructure development (shore power connection, zero and low carbon fuel availability and just-in-time arrival) as per paragraph 4.9.7 of the 2023 IMO GHG Strategy. Although some ports are voluntarily working in line with resolution MEPC.366(79) on a mixture of facilitating measures and cooperation with partners in the transport chain on optimizing the port calls, a more robust regulatory framework and strategies are needed to encourage the development and implementation of information technology and infrastructure leading to the reduction of emissions in ports and at anchorage.

Action request of the Working Group

16 The Group is invited to consider the information in this document and its annex, and take action as appropriate.

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ANNEX

REVISED CII REFERENCE LINES EXCLUDING IDLE EMISSIONS

Analysis

1 Analysis was carried out using the ABS' and DNV's 2019 IMO DCS data, for the ship types of tankers, bulk carriers, containerships, LNG carriers, general cargo ships and gas carriers.

Table 1: Data sample information

Ship type		no. of ships (ABS & DNV)
Bulk carrier	279,000 DWT and above	35
	Less than 279,000 DWT	2,215
Tanker		1,855
Container ship		1,682
Gas carrier	65,000 DWT and above	6
	Less than 65,000 DWT	240
General cargo ship	20,000 DWT and above	89
	Less than 20,000 DWT	14
LNG carrier	100,000 DWT and above	12
	65,000 < DWT < 100,000 DWT	139
	Less than 65,000 DWT	0
Total no. of vessels		6,287

2 The data set used in the study represents the following percentages in relation to the total 2019 IMO DCS data set.

Table 2: 2019 IMO DCS ABS & DNV data set relative to the 2019 IMO DCS Data set

Ship type	% of 2019 IMO DCS Data set
Bulk carrier	21.15
Tanker	25.14
Containers ship	34.00
Gas carrier	27.30
General cargo ship	4.39
LNG carrier	29.94

3 In order to get a valuable insight of the impact of idle emissions per ship type, the percentages of idle versus the total emissions are being presented.

Table 3: Idle versus total emissions

Ship type	**% Idle emissions**
LNG Carrier	4.96
Container Ship	4.93
Tanker	11.84
Bulk Carrier	5.41
General Cargo Ship	5.51
Gas Carrier	8.68

4 Using the ABS & DNV data set, the 2019 reference lines were derived through quantile regression fits, median regression fits (q = 0.5), for both the existing and the proposed framework.

Table 4: ABS and DNV CII reference lines parameters for the existing and revised framework

			Existing framework				Revised framework	
			IMO		ABS and DNV		ABS and DNV	
Ship type		Capacity	*a*	*c*	*a*	*c*	*a*	*c*
Bulk carrier	279,000 DWT and above	279,000	4,745	0.622	-	-	-	-
	Less than 279,000 DWT	DWT	4,745	0.622	5,173	0.628	3,045	0.587
Tanker		DWT	5,247	0.610	5,054	0.606	3,764	0.592
Container ship		DWT	1,984	0.489	2,817	0.518	2,258	0.503
Gas carrier	65,000 DWT and above	DWT	14,405E7	2.071	586,340E7	2.383	98.8E7	1.620
	Less than 65,000 DWT	DWT	8,104	0.639	5,433	0.602	3,482	0.568
General cargo ship	20,000 DWT and above	DWT	31,948	0.792	14.8E7	1.649	126,841	0.929
	Less than 20,000 DWT	DWT	588	0.3885	1,632,810	1.162	4,191,419	1.254
LNG carrier	100,000 DWT and above	DWT	9.827	0.000	4,320	0.519	5,953	0.548
	65,000 < DWT < 100,000 DWT	DWT	14,479E10	2.673	83,776E10	2.829	155,295 E10	2.888
	Less than 65,000 DWT	65,000	14,479E10	2.673	-	-	-	-

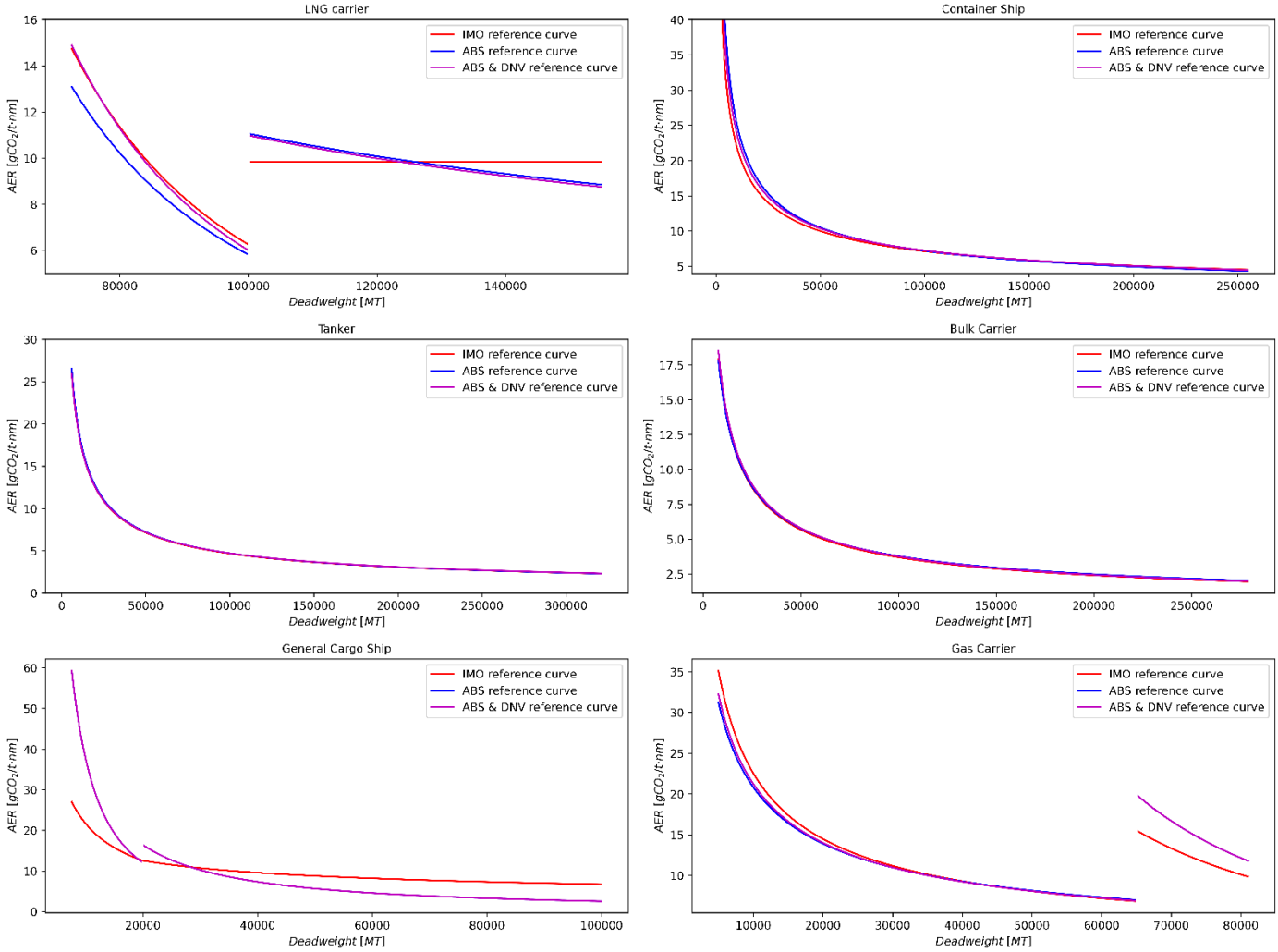

Figure 1: Comparison between IMO's, ABS' and ABS/DNV's 2019 reference lines for the ship types of bulk carriers below 279,000 DWT, container ships, tankers, LNG carriers, general cargo ships and gas carriers

5 The calculation of the rating boundaries was carried out in accordance with the methodology described in the *2022 Guidelines on the Operational Carbon Intensity of Ships (CII Rating Guidelines, G4)*(resolution MEPC.354(78))**.** Due to data set limitations, the dd vectors were calculated for bulk carriers below 279,000 DWT, tankers, containerships, LNG carriers above 65,000 but below 100,000 DWT and Gas carriers below 65,000 DWT.

Table 5: *dd* vectors for underway CII reference curves

dd vectors (after exponential transformation)				
	Underway emissions framework deducting port emissions			
Ship type	exp(d_1)	exp(d_2)	exp(d_3)	exp(d_4)
Bulk carrier	0.87	0.95	1.06	1.16
Tanker	0.83	0.94	1.06	1.21
Container ship	0.84	0.94	1.06	1.16
LNG Carrier	0.80	0.91	1.10	1.35
Gas Carrier	0.89	0.96	1.05	1.17