

MARINE ENVIRONMENT PROTECTION
COMMITTEE
82nd session
Agenda item 6

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ENERGY EFFICIENCY OF SHIPS

Impact of idle time on the Carbon Intensity Indicator - DNV analysis

Submitted by INTERCARGO

SUMMARY

Executive summary: This document provides information on a study carried out by DNV (Det Norske Veritas) on behalf of INTERCARGO, on the impact of idle time on the Carbon Intensity Indicator (CII). The document is supplementary to document MEPC 82/6/27 (INTERCARGO).

Strategic direction, if applicable: 3

Output: 3.2

Action to be taken: 3

Related documents: MEPC/6/27 and MEPC 82/INF.38

Introduction

1 Document MEPC 82/6/27 (INTERCARGO) provides information on a project carried out between INTERCARGO, ABS, BV and DNV. The project analysed the impact of idle time on attained the Carbon Intensity Indicator (CII).

2 This document contains in the annex the analysis and findings of the work carried out by DNV analysing 2022 IMO DCS data of 3,444 bulk carriers

Action requested of the Committee

3 The Committee is invited to note the information provided in this document and its annex.

ANNEX

IMPACT OF IDLE TIME ON THE CII RATING ANALYSIS BY DNV

Introduction

1 INTERCARGO with three classification societies carried out work to assess the increase of the attained CII due to idle emissions (such as emissions at the port, at anchorage or during drydock).

2 DNV has analysed the available verified IMO DCS database for the year 2022 and the findings are presented in this annex.

Methodology

3 DNV analysed the 2022 verified IMO DCS Data, for a total of 3,444 bulk carriers

4 The ships were assigned in six segments based on their size (Handysize, Supramax/Ultramax, Panamax/Kamsarmax, Minicapes/Capes, Newcastlemax and VLOC) as per table 1.

Table 1: number of ships per size segment

Segment	DWT range	No of ships
Handysize	0 – 50,000 DWT	671
Supramax	>50,000 – 65,000 DWT	681
Panamax	>65,000 – 90,000 DWT	792
Capesize	>90,000 – 190,000 DWT	891
Newcastlemax	>190,000 – 220,000 DWT	331
VLOC	> 220,000 DWT	78
Total		3,444

5 Days idle is scaled up in case the ship has not reported for the full period. This is calculated as the time idle (in days) and divided by total time in the reporting period divided by total time per year: $\text{Time Idle} / (\text{Time in period} / \text{Time in year})$

6 There is no merging of partial emissions report, i.e.: one ship can have multiple reports per year if the company or flag changes during the year.

7 Ships with zero hours underway have been removed and ships with reported total hours less than 10% of the year have also been removed.

8 No correction factors or voyage adjustments have been applied.

9 For each segment the ships were grouped as per their 2022 CII rating (A, B, C, D and E) and the average idle time (days), and emissions (MT) per rating group were calculated.

Analysis

10 The number of ships the average idle time and the average CO₂ emissions within each CII rating band were calculated and presented in figures 1 to 7 below.

CII ratings – All Sizes of ships

11 In figure 1 the CII rating for all of the 671 bulk carriers is shown with the number of ships the average idle time and the average CO₂ emissions within each CII rating band.

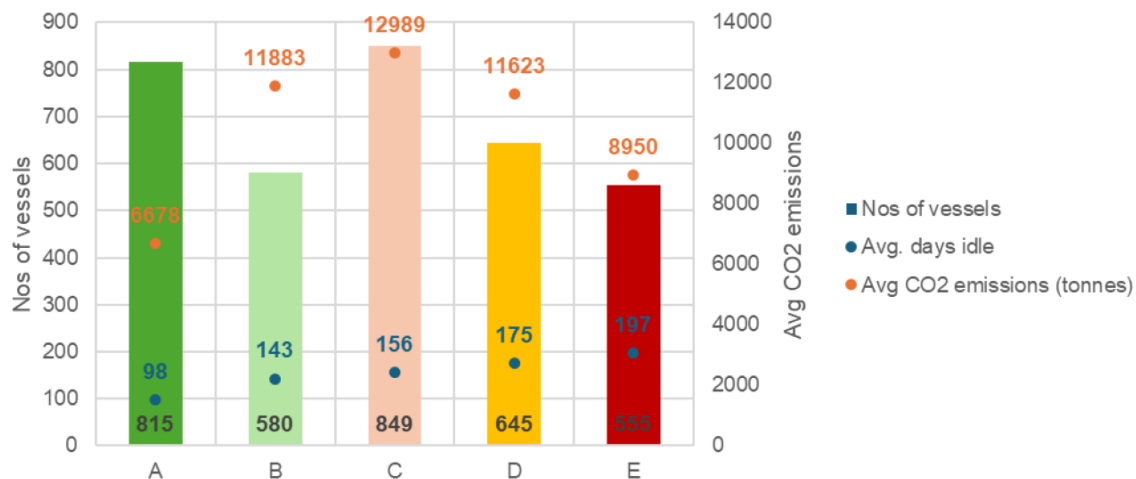


Figure 1: rating distribution, average idle time and emissions for all bulk carrier sizes

CII ratings – Handysize/Handymax Fleet

12 Figure 2 shows the CII rating for 671 bulk carriers with a DWT range: of ≤ 50,000, with the number of ships for each rating and the average idle time for each rating.

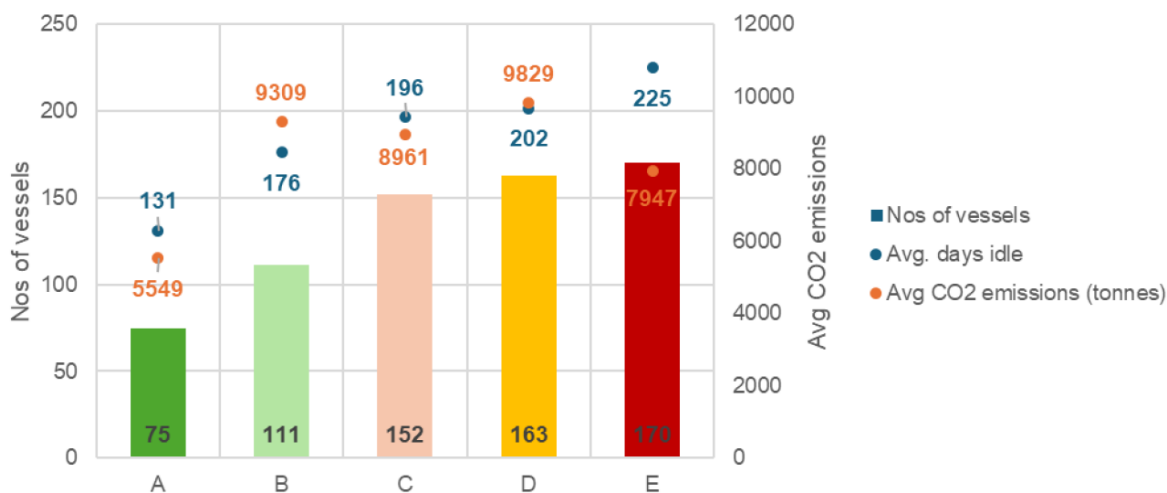


Figure 2: rating distribution, average idle time and emissions for bulk carrier sizes DWT range: ≤ 50,000

CII ratings – Supramax/Ultramax Fleet

13 Figure 3 below shows the CII rating for 681 bulk carriers with a DWT range from >50,000 up to ≤65,000, with the number of ships for each rating and the average idle time for each rating

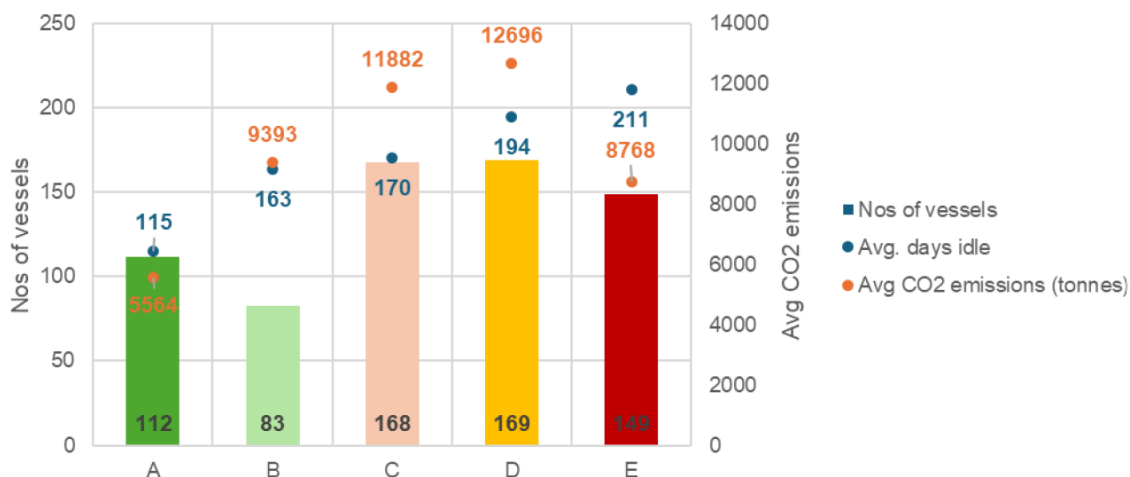


Figure 3: rating distribution, average idle time and emissions for bulk carrier sizes DWT range: >50,000 up to ≤65,000

CII ratings – Panamax/Kamsarmax Fleet

14 Figure 4 below shows the CII rating for 792 bulk carriers with a DWT from >65,000 up to ≤90,000, with the number of ships for each rating and the average idle time for each rating.

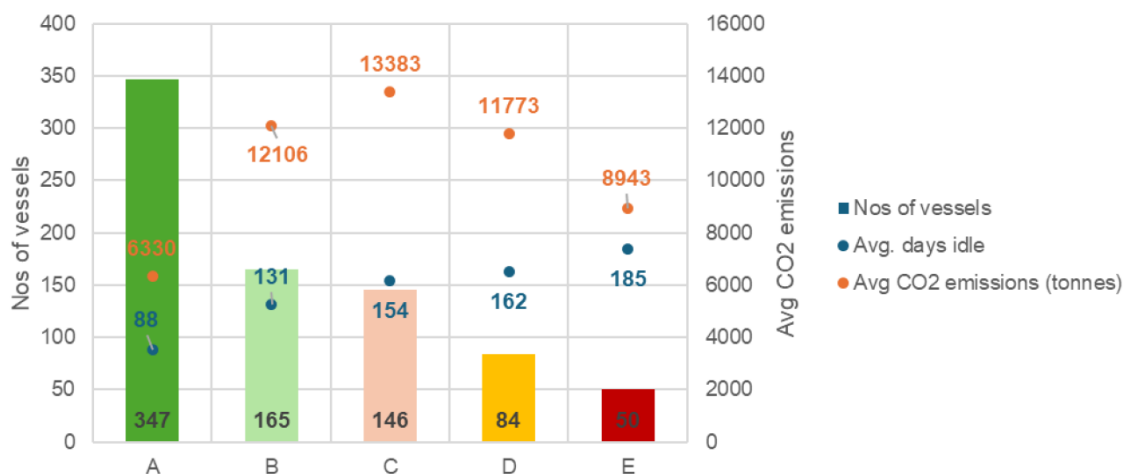


Figure 4: rating distribution, average idle time and emissions for bulk carrier sizes DWT range: >65,000 up to ≤90,000

CII ratings – Mini Capes/Capes Fleet

15 Figure 5 shows the CII rating for 891 bulk carriers with a DWT range from >90,000 up to ≤190,000, with the number of ships for each rating and the average idle time for each rating.

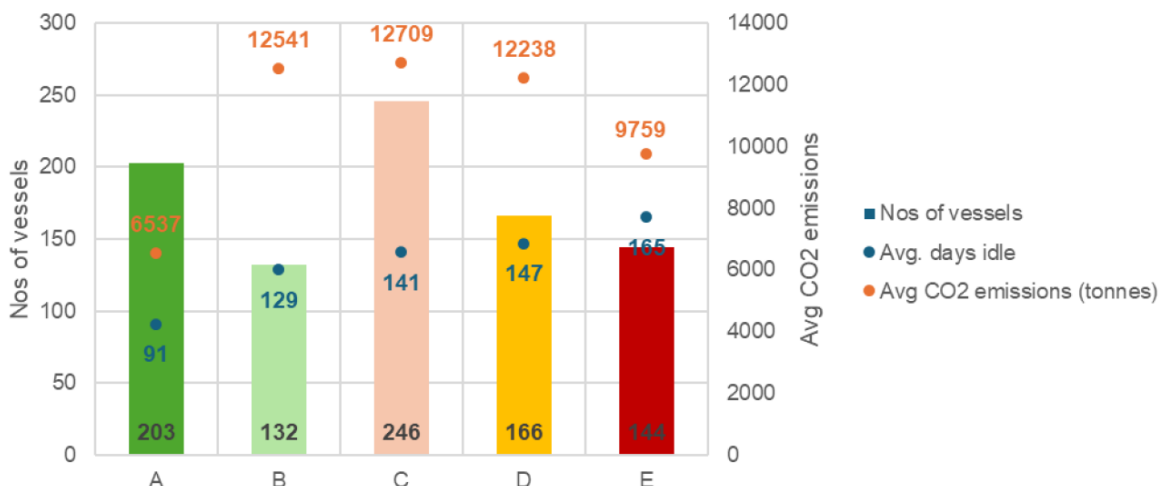


Figure 5: rating distribution, average idle time and emissions for bulk carrier sizes DWT range: >90,000 up to ≤190,000

CII ratings – Newcastlemax Fleet

16 Figure 6 below shows the CII rating for 331 bulk carriers with a DWT range of from >190,000 up to ≤220,000, with the number of ships for each rating and the average idle time for each rating

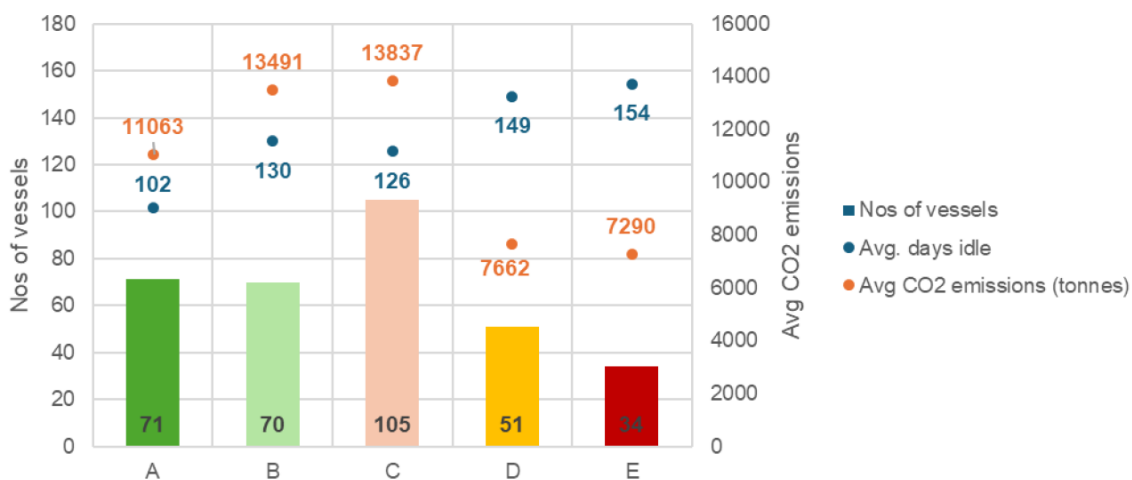


Figure 6: rating distribution, average idle time and emissions for bulk carrier sizes DWT range: of 191,000 - ≤220,000

CII ratings – VLOC Fleet

16 Figure 7 shows the CII rating for 78 bulk carriers with a DWT range > 220,000, with the number of ships for each rating and the average idle time for each rating.

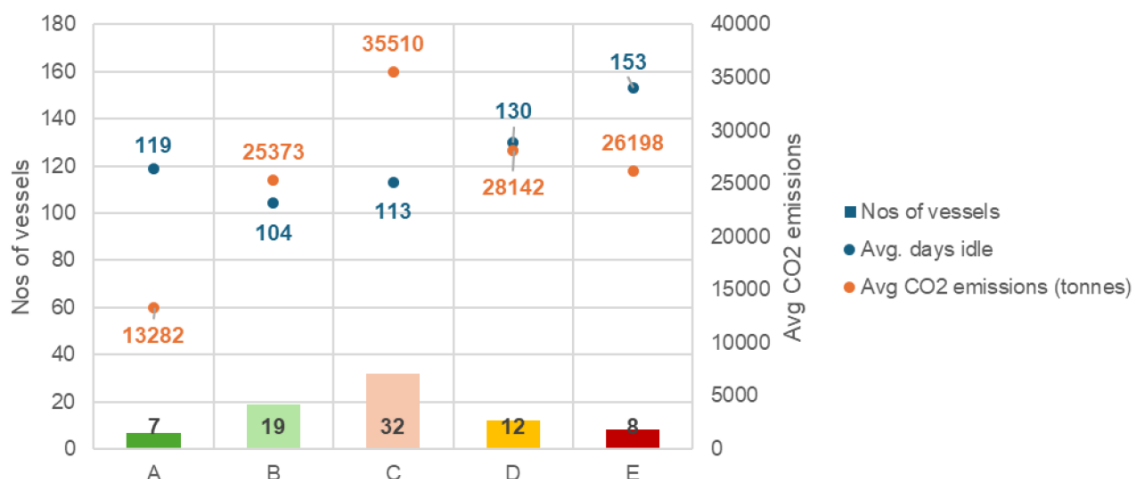


Figure 7: rating distribution, average idle time and emissions for bulk carrier sizes DWT range >220,000

High-level findings

- 17 Based on the findings illustrated in figures 1 to 7, the following insights can be derived:
- .1 for all segments there is a clear correlation between idle time and the CII rating. Increased idle time leads to a reduction in the rating.
 - .2 the larger segments generally have fewer average idle days.
 - .3 A- and E-rated ships have the lowest average CO₂ emissions in each segment except for VLOCs, while C- or D-rated ships have the highest average CO₂ emissions in each segment.
 - .4 Minicapes/capes have a relatively high share of ships with A-rating while Handysize/Handymax have a high share of D- and E-rated ships.