

MARINE ENVIRONMENT PROTECTION
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REDUCTION OF GHG EMISSIONS FROM SHIPS

Proposal for a fleet-level monitoring option

Submitted by CLIA and WSC

SUMMARY

Executive summary: This document provides a detailed discussion of the advantages of a "Fleet-Level Monitoring" (FLM) option, and proposes discussion and finalization of this option to provide incentives for improving fleet performance and the introduction of high performing ships

Strategic direction, if applicable: 3

Output: 3.2

Action to be taken: Paragraph 24

Related documents: Resolution MEPC.304(72); ISWG-GHG 7/2/27; MEPC 76/7/6 and MEPC 76/INF.9

Introduction

1 In November 2020, MEPC 75 approved draft amendments to MARPOL Annex VI on mandatory goal-based technical and operational measures to reduce carbon intensity of international shipping (MEPC 75/18, paragraph 7.28). The purpose was to establish a set of short-term measures to further reduce GHG emissions from shipping before 2030. Most recently the Correspondence Group considered guidelines on SEEMP as reported in document MEPC 76/7/6 (China et al.).

2 The draft MARPOL amendments aim to achieve a 40% reduction in 2030 compared with 2008 in accordance with resolution MEPC.304(72). In striving to accelerate reductions in the existing fleet, it is necessary to reward high performance (i.e. performance higher than C-rating). Recognizing this interest, CII mechanisms that incentivize and encourage high performance should be developed, along with investments and deployment of new fuels and the technologies needed to use them on board ships. To achieve this objective, the co-sponsors believe that there is a need to provide CII monitoring options that do not solely focus on those ships that may receive lower ratings in a given year, but to construct a system that also encourages investments in the newer and more efficient ships that will be on the water for many years and offer the greatest potential for improvement.

3 A CII monitoring system that focuses on the rating of individual ships will invariably focus the efforts of owners and operators on those ships that receive lower ratings in a given period. That effort is unlikely to result in the greatest aggregate improvement across the fleet and is unlikely to result in the retirement of those ships receiving lower ratings in a given year as ratings are likely to vary widely from year to year even among identical sister ships managed by the same company. To encourage higher performance, there is a need to create a monitoring structure that allows owners and operators to direct investments to new ships and those ships that will be in their fleet longer. In short, companies are logically driven to direct investments to those ships that are younger and will offer a return on investment for many years.

4 To create a CII structure that provides owners and operators with the flexibility to focus resources where they are most logically made, companies should be allowed to monitor the performance of a group of ships while also monitoring and rating individual ships. Providing a fleet-based monitoring option can encourage new and innovative (and risky) investments in shipboard technologies that allow to use alternative fuels such as ammonia, hydrogen, or methanol.

5 A fleet-based monitoring system is not a clever mechanism to cover poor performance. To the contrary, a fleet-based monitoring option provides the flexibility to make improvements in the overall fleet which is fully consistent with the ambitions set forth in the IMO GHG Strategy. Individual ships would be subject to at least the same level of monitoring and reporting as exists in a system limited to individual ships. More importantly, a fleet-based option provides the flexibility and incentive to introduce more efficient ships. This in turn encourages new building as well as retrofits and other improvements to those ships that will be on the water for the next decade or longer.

6 An operational measure such as the CII framework inherently involves significant uncertainties that may have unintended consequences for certain types of operations in certain States. For instance, some operations in ports located in less developed countries may be affected disproportionately by the CII requirements since significant energy is consumed for manoeuvring and for auxiliary engine consumption in those cases where ships must have their own cranes, or in circumstances where the ship must spend extended periods in port due to the slower loading and unloading of cargoes. Therefore, a fleet-based monitoring alternative to the individual ship monitoring approach can accelerate progress in the world fleet while mitigating the disadvantages encountered in specific operations and trade lanes subject to these circumstances.

7 Finally, fleet-based management and evaluations of ship efficiency are already widely employed in the business community. With an approach that is strictly limited to monitoring individual ships, there is less flexibility to manage environmental and commercial demands that are outside the ship's control. Moreover, a monitoring system that limits itself to individual ships increases the risk of penalizing a ship that is rated as 'D' or 'E'; not because of poor energy efficiency characteristics, but because the ship was operating in an unfavorable environment for the period in question.

8 In light of the above considerations, the co-sponsors propose consideration of a 'Fleet-Level¹ Monitoring' (FLM) option, where the company can choose to monitor performance across a group of ships in order to accelerate reductions in the overall fleet and move us closer to introducing innovative fuels and technologies. The co-sponsors encourage the Committee

¹ "Fleet" means the ships (all of the same ship type) organized under a single Document of Compliance (DOC) holder as defined in the ISM Code. Ships within the group must also be registered under the same Administration (flag).

to allow further discussion and consideration of this possibility in the Correspondence Group's further work on guidelines for the SEEMP and corrective action plans.

Compliance and enforcement

9 Compliance and enforcement of the CII regulations is critical to secure actual emission reductions and to avoid commercial distortion for those who must meet the CII requirements. To ensure a simple and straight-forward compliance model, this proposal for a Fleet-Level Monitoring (FLM) option is specifically linked to flag States and the Document of Compliance (DOC)² holder. In addition, the DOC holder may decide to monitor and evaluate the DOC holder's fleet (i.e. group of ships) provided they are under the same flag, and the fleet would be documented by following the steps identified in paragraphs 12 to 13 below. Alternatively, any owner or company may choose to monitor and evaluate ships on an individual ship basis.

10 Under the FLM option, total GHG emissions reductions from the fleet must be at least equal to the reductions achieved by individual ships 'on a weighted average' equal to or exceeding the overall 40% reduction target. Moreover, the FLM option would not be available on an ad-hoc basis in case a ship experiences an unanticipated failure to achieve the applicable annual reduction target. Once a DOC-holder elects the FLM option, the option must be followed for a period of [36] months.

11 Monitoring of ship performance would follow the same procedures as the individual ship monitoring mechanism, the only difference being that with FLM the ship needs to carry a balance sheet (recording the values and ratings of all ships included in the fleet as approved and defined consistent with the approved definition) together with the necessary SEEMP documentation. Figure 1 compares verification between the individual ship approach and FLM. Both approaches are similar and both options share common documentation and reporting elements.

12 The following steps would need to be included in the FLM:

- .1 the SEEMP must be updated to document whether the ships under this DOC are considered as a fleet in relation to the IMO CII reduction targets;
- .2 a supporting document (balance sheet) must be issued by the DOC holder and verified by the Administration or RO (example of balance sheet in table 1 below); and
- .3 the supporting document would also provide details of the fleet, the reduction status of each ship, rating for each ship, and the balance and rating of the total fleet under the DOC. A detailed step-wise description is provided in appendix 1 of annex 1 to document MEPC 76/INF.9.

13 In those circumstances where the DOC holder fails to obtain a fleet rating of 'C' (i.e. the DOC obtains a D or E rating overall) the consequence for the ships under the DOC should follow the guidelines or code on corrective actions to be undertaken, and a corrective action plan must be developed for all 'D' and 'E' rated vessels on the DOC. This way, the FLM provides more stringent follow up for poor performing ships than the individual ship approach. To illustrate, under the FLM option, if a DOC-holder has a rating lower than 'C' for its fleet, the DOC-holder is required to develop plans of corrective actions for all 'D' and 'E' ships on the

² DOC means a document issued to a Company which complies with the requirements of the ISM Code and Company is defined in paragraph 1.1.5 of the ISM Code.

DOC. Under the individual ship approach a ship can be rated 'D' for three consecutive years before any corrective is needed.

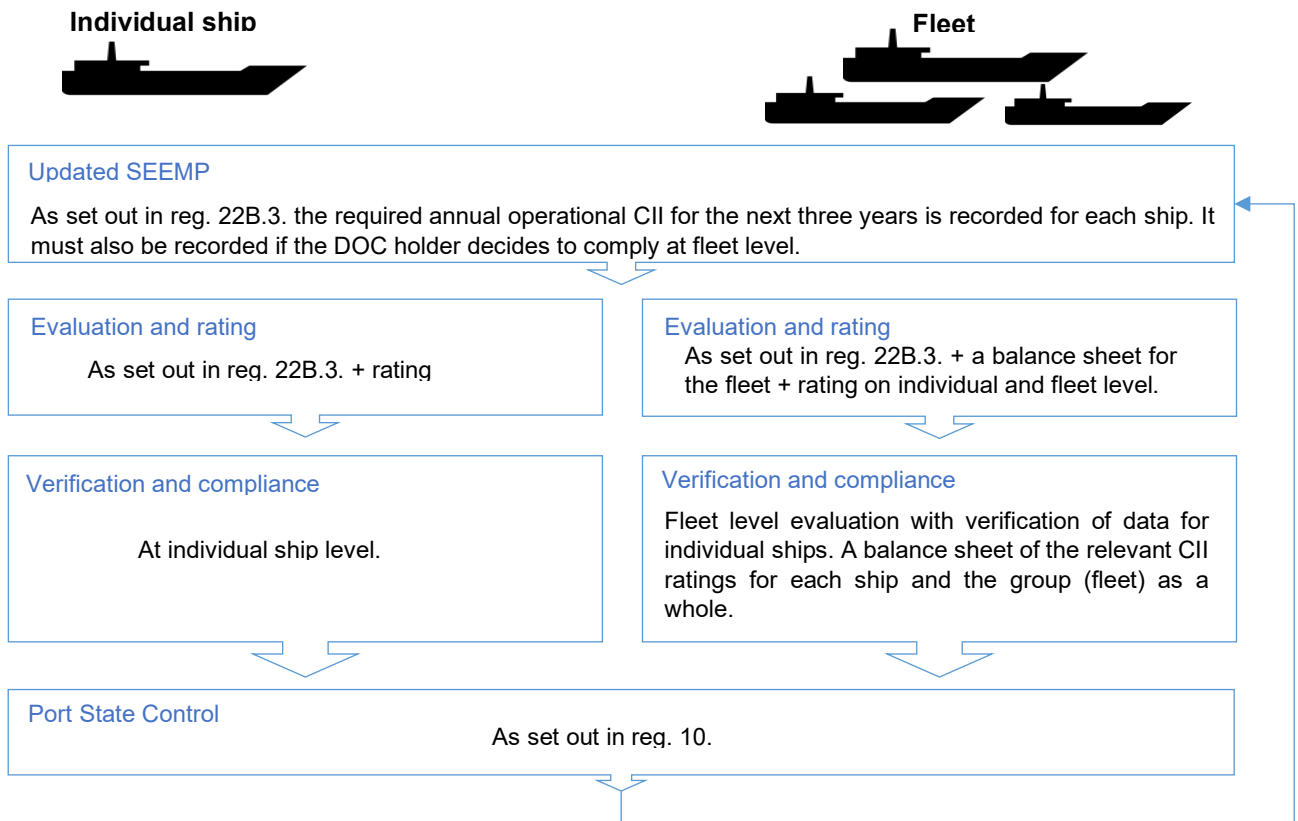


Figure 1: SEEMP and PSC with individual ship monitoring and FLM option

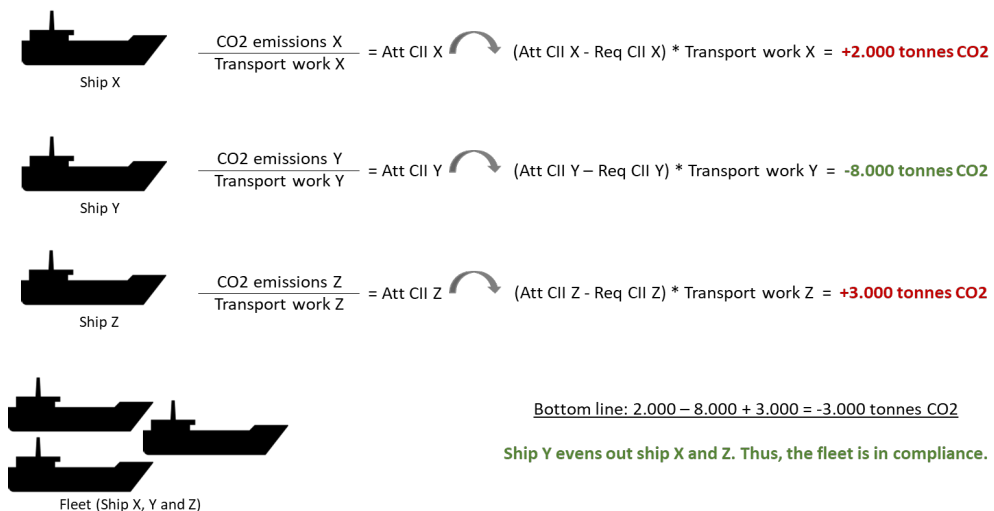


Figure 2: Illustration of the fleet-level monitoring (FLM) structure

14 The FLM provides that some ships under a given DOC holder may have lower CII rating values as long as other ships under the same DOC holder (i.e. with the same flag) are overperformers, balancing performance across the group of ships included in the 'fleet' to a level that is equal to or greater than the 40% target for individual ships. As such, a DOC holder can exercise greater flexibility in where the best improvements can be made among the ships in a 'fleet' managed by the same DOC holder. Figure 2 illustrates the FLM set-up.

15 It is proposed that GHG emissions are measured in tonne CO₂ converted from the ship's annual attained Carbon Intensity Indicator (see example in figure 3). If a ship for instance has an AER target of 10 g CO₂/tonne-mile but has reduced to 9 g CO₂/tonne-mile, it is 1 g CO₂/tonne-mile below the target. If the ship's transport work for the year is 500,000,000 tonne-miles, then 500 tonnes are available to be applied across the fleet.

16 The data on which the DOC holder's compliance is determined must be up to date and accurate. Therefore, the DOC holder must document the performance of each ship in an auditable way for all ships in the group ('fleet'). All requirements for monitoring the performance of individual ships applies under the FLM option. The main difference being that under the FLM option, a 'balance sheet' documenting fleet performance must be issued by the DOC holder and verified by the Administration or RO. The balance sheet would provide details of the fleet, the relevant reduction and rating of each ship, and the rating of the total fleet under the DOC (see table 1).

Table 1: Example of balance sheet to be attached to the SEEMP

Ship #	DWT	Days	CII target	CO ₂	CII actual	Diff (tons)	% CO ₂ of CII target	Rating
1	50,000	365	6	23,000	6.05	191.7	101%	C
2	100,000	365	4	30,000	3.80	-1,500.0	95%	B
3	100,000	365	4	33,000	3.95	-412.5	99%	C
4	75,000	365	3.5	28,000	3.45	-400.0	99%	C
5	75,000	365	3.5	25,000	3.30	-1,428.6	94%	B
6	150,000	365	3	40,000	3.20	2,666.7	107%	E
7	50,000	365	6	23,000	0.05	-22,808.3	1%	A
Total				2E+05		-23,691.1	0.9	A

Note: Numbers and ratings are merely for illustrative purpose.

17 As illustrated in table 1, the addition of Ship 7 (a carbon-neutral ship) results in an improved rating for the 'fleet', but it also incentivizes investments in the DOC group and the overall fleet. Looking at this example, it is clear that the FLM option provides incentives to introduce higher performing ships and to improve the overall efficiency of the fleet. It does not encourage minimal or mediocre performance by the group. It is also important to note that the FLM option provides full transparency on any poorer performing ships in the group. The DOC-holder will simply evaluate and be judged on the rating of the overall fleet.

18 The FLM option could be incorporated in the SEEMP as suggested in paragraph 1.3.1 of document ISWG-GHG 7/2/27 (Denmark et al.), which states that the SEEMP should include an option for monitoring compliance through the FLM option. This compliance scheme could be included as part of compliance or as an option under the corrective action plan. A detailed text proposed for inclusion in the SEEMP is included in appendix 2 of annex 1, page 21, of document MEPC 76/INF.9.

19 For chartered tonnage, the FLM option can be applied if this tonnage is placed on a DOC which has opted into the FLM option. The important point is not whether the tonnage is chartered or owned, but to which DOC the tonnage belongs. By basing the FLM option on the DOC holder and flag, the system is simplified and loopholes are avoided. When a ship changes

flag and/or DOC, the year-to-date performance must be recorded and verified so performance for the relevant period is documented by the Administration in accordance with the SEEMP.

Advantages of including the FLM option

- 20 There are multiple advantages with the FLM option, including:
- .1 providing a regulatory platform that encourages higher performance by incentivizing investments in innovative technologies and zero-emission ships;
 - .2 FLM is beneficial for both large and small fleets. The flexibility and advantages noted above also apply to players with a small fleet. In addition, the size of a given 'fleet' in a large company will be limited by the need to organize ships under multiple DOC holders and flags;
 - .3 the FLM option would also help mitigate the variance in annual ship ratings that can be expected as a given ship moves from one operating environment to another (e.g. rotated from one trade lane to another) where environmental conditions may differ significantly; and
 - .4 finally, the corrective actions for 'D' and 'E' ships would be triggered earlier if the DOC holder receives a fleet rating lower than 'C' (see paragraph 13).

Alignment with MARPOL

21 The proposed FLM option requires the DOC holder to survey, measure and track each ship that is part of a DOC-based fleet. Each ship would also be certified to be in compliance as documented by its IAPP Certificate, the International Energy Efficiency Certificate and relevant documentation requirements in the SEEMP. Consequently, the FLM option comports with the draft amendments to MARPOL Annex VI, chapter 4 on "Regulations on energy efficiency from Ships".

22 It is the legal assessment of the co-sponsors that incorporating and operationalizing the FLM option would not require amending the pending amendments to MARPOL Annex VI because DOC-holders choosing the FLM option would be required to populate and monitor data for each ship in the group ('fleet') and would continue to follow the regulations as stipulated in MARPOL and as stipulated in the current amendments approved at MEPC 75.

Proposal

23 The Committee is invited to consider the FLM option as a mechanism to incentivize high performing ships and instruct the Correspondence Group to consider the FLM option as part of finalizing the SEEMP Guidelines.

Action requested of the Committee

24 The Committee is invited to consider paragraph 23 and take action, as appropriate.
