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REDUCTION OF GHG EMISSIONS FROM SHIPS

Report of the Correspondence Group on the Development of Technical Guidelines on Carbon Intensity Reduction (TOR 3 and TOR 4)

Submitted by China, Japan and European Commission

SUMMARY

Executive summary:	This document provides the report of the Correspondence Group on the Development of Technical Guidelines on Carbon Intensity Reduction established at MEPC 75, on TOR 3 (the SEEMP guidelines and TOR 4 (the update of other existing guidelines)
Strategic direction, if applicable:	3
Output:	3.2
Action to be taken:	Paragraph 60
Related documents:	MEPC 75/18; MEPC 76/7/3, MEPC 76/7/4, MEPC 76/7/5, MEPC 76/INF.7, MEPC 76/INF.8 and MEPC 76/INF.9

Introduction

1 The seventy-fifth session of the Committee (MEPC 75) established a Correspondence Group on the Development of Technical Guidelines on Carbon Intensity Reduction, under the joint coordination of China, Japan and the European Commission. The overview of the Correspondence Group is provided in document MEPC 76/7/3 (China, Japan and the European Commission).

2 This document provides the report of the Correspondence Group on TOR 3 (the SEEMP guidelines) and TOR 4 (the update of other existing guidelines). The summary of comments provided by the members on TOR 3 and 4 is provided in document MEPC 76/INF.9 (China, Japan and the European Commission).

Framework for the work of the Correspondence Group for TOR 3

3 At the beginning of the first round of the discussion in the Group, the coordinators provided a draft text for the amended *Guidelines for the development of a ship energy efficiency management plan (SEEMP)* (hereinafter "SEEMP guidelines") (Resolution MEPC.282(70)). This text was developed based on documents ISWG-GHG 7/2/21 (Brazil and China), ISWG-GHG 7/2/27 (Denmark, France and Germany) (annex 1) and ISWG-GHG 7/2/30 (China), with some refinements to reflect the views and proposals made at ISWG-GHG 7 and MEPC 75 and to align it with the MARPOL amendments. Furthermore, the draft text contained some textual improvements. As noted in paragraph 13 below, the Group agreed to use an alternative new structure as a basis for the further development of the SEEMP guidelines. This should be kept in mind when reviewing the summary of discussion of issues reported below.

4 Further to this, the coordinators considered that the draft text could possibly be expanded in line with the MARPOL amendments, to include placeholders for further guidance on the following issues:

.1 self-evaluation and improvement;

.2 verification of the SEEMP;

.3 corrective Action Plans (CAPs); and

.4 review and update of the SEEMP.

5 Members of the Correspondence Group were invited to provide their views to the draft text and to provide their views and possible proposals for further guidance on the issues above.

6 The comments received in Round 1, in particular on the issues as mentioned in paragraph 4, were divergent and therefore the coordinators invited members in Round 2 to provide their further views on the first round of comments and to provide any further proposals in Round 2.

7 In Round 3, the coordinators provided a way forward with respect to the various topics that had been raised and members were invited to provide their (dis)agreement to the proposed way forward.

8 The following part of this document summarizes the discussion related to TOR 3 (the SEEMP guidelines) and TOR 4 (the update of other existing guidelines).

Summary of discussion

TOR 3: Consider and update the 2016 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP) (resolution MEPC.282(70)), including to incorporate the development of a plan of corrective actions and verification requirements of SEEMP

General

9 The following general comments were provided by the members of the Group during the three rounds:

.1 A large number of members of the Group considered that the development of the SEEMP guidelines would be much dependent on the CII guidelines. Therefore, the Group agreed that the CII guidelines should be finalized first, after which the Group could work on the further development and update of the SEEMP guidelines. Some members considered providing their further comments and proposals after finalization of the CII guidelines and suggested that the Group should not make any important definitive decisions at this stage. Some members proposed to concentrate first on the structure and general principles of the SEEMP guidelines.

.2 In light of the above, several members recommended the re-establishment of the Correspondence Group after the finalization of the CII and the EEXI guidelines.

.3 Several members noted that some proposals could risk introducing new requirements in the guidelines in addition to the MARPOL amendments and that such proposals should be carefully considered so as not to introduce new requirements in the guidelines.

.4 The Group agreed that the following could serve as general principles for further developing the guidelines:

- the guidelines should be kept simple and should not be too detailed or be too prescriptive;

- the guidelines should provide sufficient flexibility to the companies; and

- the administrative burden for ships, companies and Administrations should be kept to a minimum.

.5 Some members in general highlighted the heavy workload of the Group and indicated that the EEXI and CII guidelines had their highest priority. This meant less attention could be given to the development and update of the SEEMP guidelines and to the other existing guidelines that possibly needed to be updated.

Base document for the SEEMP guidelines

10 The Group considered draft amendments to resolution MEPC.282(70) on the *2016 Guidelines for the development of a ship energy efficiency management plan (SEEMP)*, using the base document circulated by the coordinators.

11 The base document including all proposals provided in Round 1 and in Round 2 is provided in the annex. However, the base document does not yet include the new structure as discussed in paragraphs 12 to 14.

Structure of the SEEMP guidelines

12 The Group considered that the guidelines could be better structured and better explain the different steps in a SEEMP cycle, especially with regard to self-evaluation and improvement, verification and audits and corrective actions. Furthermore, the requirements for ships under regulation 22B should be better clarified.

13 A proposal for a new structure was submitted to the Group in order to clarify the requirements for ships falling under the scope of regulation 22B. For such ships, the proposal (which can be found in appendix 1 of annex 1 of document MEPC 76/INF.9) contains a new Part III, which is added to the existing structure of the SEEMP guidelines. The Group recommended to use the new structure as a basis for the further development of the SEEMP guidelines.

14 Some members considered that clarity was required on whether the CII should be calculated for international voyages only or for all voyages for ships of 5,000 GT and above. They therefore proposed that the Group recommend that the Committee consider and agree on the application of the CII. However, this issue seemed to be sufficiently clarified in regulation 19.2 of MARPOL Annex VI, which reads:

> *The provisions of this chapter shall not apply to:*
>
> *.1 "ships solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly. However, each Party should ensure, by the adoption of appropriate measures, that such ships are constructed and act in a manner consistent with the requirements of chapter 4 of this Annex, so far as is reasonable and practicable."*

Therefore, no further action is required by the Committee on this issue.

Proposals for inclusion in the SEEMP guidelines

15 The Group considered several proposals for inclusion into the SEEMP guidelines, including:

.1 assigning the different responsibilities;

.2 specific details of the actions that need to be carried out, including how these actions need to be carried out;

.3 details on why these specific actions were chosen and how it is anticipated that these actions will allow the ship to go back into compliance at a rating above D or E;

.4 how actions will be monitored to ensure that the ship is moving back into compliance, including estimated quantification of the additional expected reduction in carbon intensity; and

.5 a timeline that indicates how long it will take such actions to take effect.

The Group agreed to use these proposals as a basis for the further development of the guidelines.

16 The Group considered a proposal on the inclusion into the SEEMP guidelines of exclusion from the calculation of the attained Carbon Intensity Indicator of voyages of ice-classed ships, when sailing in ice-infested waters. The issue was related to voyage exclusions in the CII guidelines where this was further dealt with. The basic question being if voyage exclusions beyond those of regulation 3.1 of MARPOL Annex VI, could be dealt with in the guidelines or whether these should be addressed in MARPOL and, if it was allowed to deal with such proposals in the guidelines, in which guidelines should this be addressed: the CII guidelines or the SEEMP guidelines. The proposal can be found in appendix 2 of annex 2 to document MEPC 76/INF.9.

17 The Group also considered a proposal for the SEEMP guidelines to include an option for compliance at company/fleet level. According to this proposal, less efficient ships and more efficient ships that belong to the same fleet could be balanced. The proposal was supported and opposed. The Group considered that it might be difficult to include compliance at company/fleet level basis into the guidelines, since this was not addressed in the MARPOL amendments. One member noted that such a fleet averaging program should not be addressed in the guidance as this would be a regulatory change that affects not just the fleets that can average, but their competitiveness with other fleets and/or smaller fleets that cannot average as easily. The Group agreed not to include the proposal at this stage but to seek clarification from the Committee on whether this issue could be dealt with in the guidelines or whether it should be addressed at the level of the Convention. The proposal can be found in appendix 2 of annex 1 to document MEPC 76/INF.9.

Purpose of the SEEMP

18 The Group considered further clarification of the purpose of the SEEMP guidelines and agreed not to expand on the purpose of the SEEMP guidelines and to only clarify further the inclusion of Part III of the SEEMP guidelines for ships falling under the scope of regulation 22B. In relation to the purpose of the SEEMP guidelines and also to other issues that were raised, the Group noted that the SEEMP may be a part of the Ship's Safety Management System (SMS).

Record keeping and submission of data

19 The Group considered the issue of record keeping and submission of data. It was suggested that records of maintenance carried out specifically aimed at improving energy efficiency and carbon intensity should be maintained. Another suggestion concerned records of any training and/or familiarization related to the SEEMP carried out, which could be maintained within the company SMS. Furthermore, data to be submitted each year for Part I could be better explained and illustrated within the guidelines.

20 The Group expressed divergent views on these matters and highlighted the need to minimize the impact on the onboard administrative burden and avoiding double reporting. The Group agreed to address these issues again at a later stage.

Self-evaluation and improvement

21 The Group considered several proposals on self-evaluation and improvement, including:

.1 criteria for evaluation, which could include quality of monitoring, record keeping, effectiveness of implemented measures and achievement of the goal;

.2 which measures contribute the most and how much;

.3 what measures do not contribute and therefore would not be efficient;

.4 which ship and/or company-specific elements are weighing on the CII and how these could be improved;

.5 timelines for starting the review process; and

.6 measures to address deficiencies and discrepancies and actions to bring ships back into compliance including estimated quantification of the additional expected reduction in carbon intensity.

22 It was furthermore considered that paragraph 4.4.5 of the base document for the SEEMP guidelines could also provide further guidance to the self-evaluation requirements of the ISM Code with regard to internal audits. Following this approach, the self-evaluation could include regular internal shipboard and company audits, reporting of any detected non-conformity and implementing preventive or modifying measures.

23 Further to this, the usage of the relevant elements in the company specific ISO 14001 (Environmental Management System – EMS) or relevant parts of the ISM Code and transferring that to the SEEMP guidelines could be considered. Some members suggested to at least mentioning in the SEEMP guidelines the possibility for SEEMP audits to be combined with ISM Code verification where feasible. Also ISO 9001 and 50001 were mentioned as containing relevant elements.

24 While there was support for the above proposals, they were also opposed by some members arguing this could be left to the company, the proposals should not be too detailed and too prescriptive and that the existing text provided for a sufficient basis. Some members stated that ISO standards and ISM should not be referred to in the SEEMP guidelines. One member argued that management systems like ISO 14001 and ISM Code already existed independently of these guidelines and such inclusions would risk creating the presumption that what was not included would be excluded and being too prescriptive/regulatory.

25 While noting the proposals and the comments thereto and that draft regulation 22.3 of MARPOL Annex VI requires a procedure for self-evaluation and improvement, the Group agreed at this stage to retain the existing text on self-evaluation and improvement as being sufficient. However, the possibility was kept to address the issue again once the CII guidelines are finalized.

Verification of the SEEMP

26 The Group considered that the guidance on verification would be aiming at Administrations and therefore should not form part of the SEEMP. Therefore, it was considered that a separate guideline should be developed on this issue. A concrete text proposal can be found in appendix 3 of annex 1 to document MEPC 76/INF.9. It was also suggested that the verification requirements could become part of the existing IMO DCS verification process. However, no agreement on this was reached by the Group.

27 The Group agreed to develop the guidance on verification in separate guidelines and to invite the Committee to provide for this option in the revised terms of reference of the Correspondence Group, provided the Committee agrees its re-establishment.

28 One member reminded the Group that the general purpose of verification was to verify the SEEMP, not to verify compliance with the CII, which would be done as part of ship surveys and inspection. Ships subject to SEEMP verification and audits would be those of 5,000 GT and above to which regulation 22B applies, to ensure the elements of regulation 22.2 and 3 would be incorporated in the ship's SEEMP.

29 The Group considered a proposal to not require verification audits for ships rated as A, B or C. There was some support for this proposal considering that there is no requirement for this and at least for ships rated A and B, this could be a way to incentivize high performance. However, while several members supported the proposal, the majority of the Group did not. It was considered that in case of D or E rating, the corrective action plan would need to be reviewed by the Administration, which would be an additional verification. Moreover, regulation 22.5 applies to all ships regardless of their score. Some members also questioned how it would then be established that ships are actually rated as A, B or C.

30 The Group rejected the proposal to not require verification audits for ships rated as A, B or C, forward.

31 The Group also considered the periodicity of the verification process and agreed that verification should take place at periodic intervals.

32 However, the Group also noted that the MARPOL amendments do not include requirements for periodic verification/audits. It was considered that the MARPOL amendments only require the SEEMP to be subject to verification and company audits. There are no detailed requirements on what, when and how to verify/audit.

33 The Group therefore agreed to include in the guidelines a recommendation on what, when and how to verify, avoiding introducing new requirements in the guidelines.

34 The Group considered various proposals for guidance on verification of the SEEMP, including a proposal for structuring the discussion. Some of the elements that were highlighted are listed as follows:

.1 verification that the different steps for each cycle, as referred in paragraph 3.6 of the base document for the SEEMP guidelines, are taken, verification of calculations and descriptions from paragraph 3.6*bis* of the base document;

.2 identification of measures including their implementation;

.3 effectiveness of measures;

.4 verification that personnel was trained and familiarized;

.5 verification of progress made in the corrective actions;

.6 verification of self-assessment and of improvement actions taken;

.7 review of the SEEMP for compliance with regulation 22.3 prior to 1 January 2023 and confirmation of compliance with the new IEEC;

.8 the rating and attained/required annual CII are determined annually (statement of compliance valid for one year) so annual verification is at hand;

.9 additional verification for review and implementation of the corrective action plan (within three months after rating was determined);

.10 verification of other implementation aspects of the SEEMP on board (monitoring, self-evaluation and improvements etc.) could be harmonized/ combined with the SMS audits;

.11 to minimize any additional burden to the Company, it could be appropriate to combine these with the annual DOC audit;

.12 the verifications include annual audits at the premises of the company (company audits) and regular verifications on board the ship (shipboard audits); and

.13 concrete text proposals were made and can be found in appendix 4 of annex 1 to document MEPC 76/INF.9.

35 The Group also considered proposals to use relevant requirements or principles from the ISM Code (part B), supported by additional requirements on CII verification. Furthermore, the usage of the relevant elements in the Company specific ISO 14001 (EMS) could be considered. However, no concrete text proposals were submitted to the Group. Some members proposed for the SEEMP audit and verification mechanism to be built into the International Energy Efficiency Certificate (IEEC) survey framework as opposed to the International Safety Management (ISM) Code.

36 The Group agreed to use the proposals in appendix 3 and 4 of annex 1 to document MEPC 76/INF.9 together with the proposals as indicated above as a starting point for developing the guidance on verification, with the understanding that such guidance should be in full alignment with the MARPOL amendments.

37 The Group also considered minimum requirements for audits, including minimum requirements for the audit team, like:

.1 maintenance of records by audit team;

.2 documentation of roles of audit team;

.3 identification of use of outsourcing;

.4 the use of a reasonable level of assurance;

.5 the acceptable materiality threshold;

.6 documentation of audit risks;

.7 sampling and audit plans;

.8 use of an independent reviewer; and

.9 requirements for the audit report.

38 The Group agreed it would be premature to decide on the inclusion of possible guidance on audits at this stage, but to revisit this issue at a later stage.

Corrective action plans

39 The Group considered if the guidance on the corrective action plan should be in a separate part of the guidelines. The Group agreed however, that the corrective action plan should be an integral part of the guidelines.

40 The Group considered the following elements on guidance on corrective action plans (CAP):

.1 analysis of the effectiveness of the measures taken and to learn from experience gained;

.2 expected contribution by each measure (including risk analysis) as well as by the package of measures;

.3 corrective actions to be selected based on their expected contribution to reduce CII;

.4 implementation of the CAP should be monitored and adjusted when necessary;

.5 evaluation of whether the corrective actions are starting to take effect;

.6 follow-up points in time of corrective actions to be included in CAP;

.7 corrective actions should be ship specific;

.8 factors having a negative impact on the outcome of the corrective action should be listed, as well as their chance of occurrence (risk analysis);

.9 mitigating measures to address these negative impacts, when occurring, should be considered in the CAP;

.10 mitigating measures to strengthen corrective actions in case of insufficient intermediate results;

.11 point in time where corrective action will be implemented to be included in CAP;

.12 timelines should be established for when the implementation plan will be put in place;

.13 how and when (timescale) corrective actions will be implemented;

.14 approval by the Administration (if not separated in a verification guideline);

.15 the scope of review and the process together with deliverables;

.16 monitoring intervals;

.17 the records to be submitted for evaluation;

.18 the type and level of evaluation proposed (qualitative or quantitative or both);

.19 a possible provision to accept or reject the corrective actions proposed and if yes, under what circumstances and when; and

.20 concrete text proposals can be found in appendix 5 of annex 1 to document MEPC 76/INF.9.

41 Views were also expressed that guidance on the CAPs should be left to the discretion of the ship owner/operator, that the present text would be sufficient and that guidance on CAPs should not be too prescriptive. Furthermore, it was also suggested that relevant parts of the ISM Code and ISO 14001 and section 5 of the present SEEMP guidelines could be used.

42 While noting the views expressed, the Group agreed to use the proposals on guidance for the CAPs, as a basis for further development of the guidelines.

Review and update of the SEEMP

43 The Group considered to include a recommendation to review and update the SEEMP at regular intervals. Proposals were made varying between one year and three years.

44 While noting the comments by those members who were not supportive (e.g. there is no need for review and update of the SEEMP for A, B, or C rated ships and it may not to be in line with the approved amendments to MARPOL), the Group agreed to include a recommendation for a regular review and update of the SEEMP.

45 The Group considered the use of relevant text from ISM and from ISO 14001. The Group agreed to use this as a basis for further development.

TOR 4: Consider the need to update existing guidelines, procedures or guidance, including:

.1 2017 Guidelines for Administration verification of ship fuel oil consumption data (resolution MEPC.292(71)), as appropriate;

.2 2017 Guidelines for the development and management of the IMO Ship Fuel Oil Consumption Database (resolution MEPC.293(71));

.3 Procedure on submission of data to the IMO data collection system of fuel oil consumption of ships from a State not party to MARPOL Annex VI (MEPC.1/Circ.871);

.4 Procedures for Port State Control, 2019 (resolution A.1138(31)); and

.5 2013 Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI (MEPC/1/Circ.815).

Framework for the work of the Correspondence Group for TOR 4

46 In Round 1 for each of the existing guidelines as mentioned in TOR 4 of the Correspondence Group, views were asked on amending the guidelines. Further views on amending the existing guidelines were asked in the second round.

47 Since a majority of the Group preferred to revisit the existing guidelines once other guidelines (EEXI/CII/SEEMP) are finalized, no conclusions on TOR 4 have been drawn at this stage and the coordinators decided not to issue a new questionnaire for the third round and to revisit the existing guidelines at a later stage.

2017 Guidelines for Administration verification of ship fuel oil consumption data (resolution MEPC.292(71))

48 Some members provided the following reasons for updating resolution MEPC.292(71):

.1 to correct references to the current 2016 SEEMP Guidelines;

.2 to include the calculation method for CII;

.3 to include procedures for verifying exclusions (e.g. for certain voyages and ship operations);

.4 to include the mechanism and particulars of verification of data related to possible exclusions;

.5 to include clarifications on fuel oil consumption during the cargo loading at offshore locations by shuttle tankers with dynamic positioning (DP) systems; and

.6 to update the forms in the appendices.

49 Some members did not consider it necessary to amend the guidelines if e.g. AER, as a metric for individual ships, would be chosen for all ship types and if there would be no voyage exclusions.

2017 Guidelines for the development and management of the IMO Ship Fuel Oil Consumption Database (resolution MEPC.293(71))

50 Some members considered that resolution MEPC.293(71) needed to be amended for the purpose of clarification of the actual "distance" and how to verify that. Some concrete text proposals were provided.

51 Some members did not consider it necessary to amend the guidelines in the case where AER was chosen as a metric for individual ships for all ship types and if there was be no voyage exclusions.

Procedure on submission of data to the IMO data collection system of fuel oil consumption of ships from a State not party to MARPOL Annex VI (MEPC.1/Circ.871)

52 Several members considered that the update of MEPC.1/Circ.871 would depend on the further development of the CII guidelines. Some members however anticipated an update would be necessary.

53 Some members did not consider it necessary to amend the procedure since it only covers how to report to the DCS database and not what needs to be reported. Furthermore, it was not considered necessary in the case where AER was chosen as a metric for individual ships for all ship types and if there was no voyage exclusions. There could however be consequential changes to relevant references.

Procedures for port State control, 2019 (resolution A.1138(31))

54 Several members indicated it would be necessary to amend resolution A.1138(31), but after the discussions on EEXI and CII. Further to this, the following reasons were provided:

.1 reference was made to paragraphs 21.17 to 21.22 and 21.41 of the report of PPR 7 (PPR 7/22), noting in particular the need to amend the 2019 Guidelines for Port State Control under MARPOL Annex VI (MEPC.321(74)), to include provisions relating to chapter 4 of MARPOL Annex VI, and the invitation to III 7 to develop appropriate amendments. The coordinators proposed to develop the amendments to these Guidelines within the scope of this Correspondence Group;

.2 to ensure the effective implementation of new regulation 10.6;

.3 in addition to the usual verification of documents, PSC inspections could also, regarding carbon intensity requirements, check whether actions envisaged in the different parts of the updated SEEMP are well implemented and if the crew is sufficiently trained/informed to know, understand and implement these actions;

.4 to consider if these Procedures should contain a list of possible non-compliance in the implementation of the SEEMP that could lead to a detention;

.5 to include a focus on evidence of crew and company commitment to self-evaluation and improvement; and

.6 some concrete text proposals were provided.

55 Some members considered an update would not be required as it was too premature. However, an update on training could be relevant.

56 It was also commented that careful consideration should be given to how the actions taken by a ship's crew in extreme situations at sea were assessed in a PSC setting.

2013 Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI (MEPC/1/Circ.815)

57 Some members considered that MEPC/1/Circ.815should not be amended, because it was not necessary and amending these guidelines would pertain to EEDI.

58 Several members indicated the guidelines needed to be amended, whereby the following reasons were given:

.1 wind assistant systems should be incentivized. It was pointed out that the global wind probability matrix may not represent many of the operational conditions vessels face in reality. Vessels that have a fixed route with favourable winds may perform better than average and the effective power of wind propulsion systems could be calculated using a local wind probability matrix as an option to the global wind probability matrix. The concrete proposals can be found in appendix 1 of annex 4 to MEPC 76/INF.9. The coordinators commented that according to the proposal, MARPOL Annex VI and the International Energy Efficiency Certificate (IEEC) also needed to be amended, which would go beyond the TOR of this Correspondence Group;

.2 to include the EEXI; and

.3 to include carbon capture systems if accepted in the EEXI calculation formula, which could be added to MEPC.1/Circ.815 as a new category (D) "Emission removal through the carbon capture system".

59 A comment was made that in a very short future it would be needed to consider what to do about the EEDI calculation. Due to the carbon factor and the future utilization of zero carbon fuels, the EEDI number would no longer reflect "energy efficiency" as intended. Two options were provided for IMO to consider: 1) that all EEDI calculations would be based on one Cf, so a constant regardless of what fuel is intended to be used or 2) the concept could be reformed altogether. The coordinators commented that this issue would go beyond the TOR of this Correspondence Group.

Action requested of the Committee

60 The Committee is invited to:

.1 note the progress made and the discussions on the development of the SEEMP guidelines (TOR 3) and the update of other existing guidelines (TOR 4);

.2 note the base document (with the new structure as agreed by the Group not yet included), as attached to this report;

.3 consider a new structure for the SEEMP guidelines in which a new Part III is added to the existing structure of the SEEMP guidelines with a view to clarifying the requirements for the ships falling under the scope of regulation 22B of the MARPOL amendments;

.4 consider the proposal on compliance on a company/fleet level basis, if supported, whether this should be addressed at the level of the guidelines or at the level of the Convention;

.5 consider the development of guidance on audit and verification of the SEEMP in a separate guideline; and

.6 consider the re-establishment of the Correspondence Group with a view to finalizing the update of the SEEMP guidelines and other existing guidelines at MEPC 77.

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ANNEX

DRAFT AMENDMENTS TO RESOLUTION MEPC 282(70) ON 2016 GUIDELINES FOR THE DEVELOPMENT OF A SHIP ENERGY EFFICIENCY MANAGEMENT PLAN (SEEMP)
(New text is shown as underlined and text to be deleted as ~~strikethrough~~; text in square brackets means views were divided on inclusion or not)

1 INTRODUCTION

1.1 The Guidelines for the development of a Ship Energy Efficiency Management Plan have been developed to assist with the preparation of the Ship Energy Efficiency Management Plan (SEEMP) required by regulation 22 of MARPOL Annex VI.

1.2 The aim of the SEEMP is to improve the energy efficiency and reduce carbon intensity of a ship's operation and to contribute to achieving the levels of ambition in the Initial IMO Strategy on Reduction of GHG Emissions from Ships in the most effective way.

1.3 There are two parts to a SEEMP.

1.3.1 Part I provides a possible approach for monitoring of ship and [the compliance of] fleet efficiency performance over time and some options to be considered when seeking to optimize the performance of the ship.

1.3.2 For ships subject to regulation 22.3 and regulation 22B of MARPOL Annex VI, Part I of the SEEMP should further include the required annual operational Carbon Intensity Indicator (CII) for the next three years, an implementation plan documenting how the required annual operational CII will be attained and a procedure for self-evaluation and improvement.

1.3.3 Part II provides the methodologies ships of 5,000 gross tonnage and above should use to collect the data required pursuant to regulation 22A of MARPOL Annex VI and the processes that the ship should use to report the data to the ship's Administration or any organization duly authorized by it.

1.4 A sample form of the SEEMP is presented in appendices 1 and 2 for illustrative purposes. A standardized data-reporting format for the data collection system is presented in appendix 3.

2 DEFINITIONS

2.1 For the purpose of these Guidelines, the definitions in MARPOL Annex VI apply.

2.2 "Ship fuel oil consumption data" means the data required to be collected on an annual basis and reported as specified in appendix IX to MARPOL Annex VI.

2.3 "Safety management system" means a structured and documented system enabling company personnel to implement effectively the company safety and environmental protection policy, as defined in paragraph 1.1 of International Safety Management Code.

2.4 "Carbon Intensity Indicator" means a performance indicator by which it is possible to measure the carbon intensity of the ship, as defined in the CII guidelines (insert reference here), taking into account data listed for reporting in appendix IX of regulation 22A.

PART I OF THE SEEMP: SHIP MANAGEMENT PLAN TO IMPROVE ENERGY EFFICIENCY AND REDUCE THE CARBON INTENSITY OF THE SHIP

3 GENERAL

3.1 In global terms it should be recognized that operational efficiencies and reductions [in carbon intensity] delivered by a large number of ship operators will make an invaluable contribution to reducing global carbon emissions.

3.2 The purpose of part I of SEEMP is to establish a mechanism for a company and/or a ship to improve the energy efficiency and reduce carbon intensity of a ship's operation. Preferably, this aspect of the ship-specific SEEMP is linked to a broader corporate energy management policy for the company that owns, operates or controls the ship, recognizing that no two shipping companies are the same, and that ships operate under a wide range of different conditions.

3.3 Many companies will already have an environmental management system (EMS) in place under ISO 14001 which contains procedures for selecting the best measures for particular vessels and then setting objectives for the measurement of relevant parameters, along with relevant control and feedback features. Monitoring of operational environmental efficiency should therefore be treated as an integral element of broader company management systems.

3.4 In addition, many companies already develop, implement and maintain a Safety Management System. In such case, part I of SEEMP may form part of the ship's Safety Management System.

3.5 This section provides guidance for the development of part I of SEEMP that should be adjusted to the characteristics and needs of individual companies and ships. Part I is intended to be a management tool to assist a company in managing the ongoing environmental performance of its vessels and as such, it is recommended that a company develops procedures for implementing the plan in a manner which limits any on-board administrative burden to the minimum necessary.

3.6 Part I of SEEMP should be developed as a ship-specific plan by the company, and should reflect efforts to improve a ship's energy efficiency and reduce carbon intensity through four steps: planning, implementation, monitoring, and self-evaluation and improvement. These components play a critical role in the continuous cycle to improve ship energy efficiency and reduce carbon intensity management. With each iteration of the cycle, some elements of part I will necessarily change while others may remain as before.

3.6*bis* For ships subject to regulation 22B part I of the SEEMP should further include calculations and descriptions of the ship's attained annual operational CII, the operational rating and consequential corrective actions and in accordance with regulation 22.3 of MARPOL Annex VI:

a) a description of the methodology that will be used to calculate the ship's annual operational CII required by regulation 22B of MARPOL Annex VI and the processes that will be used to report this value to the ships's Administration;

b) Required annual operational CII for the next three years, as specified in regulation 22B of MARPOL Annex VI;

c) An implementation plan documenting how the required annual operational CII will be achieved during the next three years; and

d) A procedure for self-evaluation and improvement.

3.7 At all times safety considerations should be paramount. The trade a ship is engaged in may determine the feasibility of the efficiency measures under consideration. For example, ships that perform services at sea (pipe laying, seismic survey, OSVs, dredgers, etc.) may choose different methods of improving energy efficiency when compared to conventional cargo carriers. The nature of operations and influence of prevailing weather conditions, tides and currents combined with the necessity of maintaining safe operations may require adjustment of general procedures to maintain the efficiency of the operation, for example the ships which are dynamically positioned. The length of voyage may also be an important parameter as may trade specific safety considerations.

4 FRAMEWORK AND STRUCTURE OF PART I OF SEEMP

4.1 Implementation Plan ~~Planning~~

4.1.1 The implementation Plan, subject to regulation 22.3.3 of MARPOL Annex VI, ~~Planning~~ is the most crucial stage of part I of SEEMP, in that it primarily determines both the current status of ship energy usage and carbon intensity and the expected improvement of ship energy efficiency and reduction of carbon intensity. Therefore, it is encouraged to devote sufficient time to planning so that the most appropriate, effective and implementable plan can be developed.

Ship-specific measures

4.1.2 Recognizing that there are a variety of options to improve efficiency – for example speed and/ or trim optimization, weather routing ~~and~~, hull maintenance, retrofitting of energy efficiency devices and use of alternative fuels – and that the best package of measures for a ship to improve efficiency differs to a great extent depending upon ship type, cargoes, routes and other factors, the specific measures for the ship to improve energy efficiency and reduce carbon intensity should be identified in the first place. These measures should be listed as a package of measures to be implemented, thus providing the overview of the actions to be taken for that ship.

4.1.3 During this process, therefore, it is important to determine and understand the ship's current status of energy usage. Part I of SEEMP should identify energy-saving, and carbon intensity reducing measures that have been undertaken, and should determine how effective these measures are in terms of improving energy efficiency and reduction of carbon intensity. Part I also should identify what measures can be adopted to further improve the energy efficiency and reduce carbon intensity of the ship. It should be noted, however, that not all measures can be applied to all ships, or even to the same ship under different operating conditions and that some of them are mutually exclusive. Ideally, initial measures could yield energy (and cost) saving results that then can be reinvested into more difficult or expensive efficiency upgrades identified by part I.

4.1.4*bis* For ships subject to regulation 22B and which are rated as D for three consecutive years or E the SEEMP part I must be updated with planned corrective actions in accordance with regulation 22B.7.

4.1.5 It should be demonstrated how the corrective actions will contribute to achieve the required CII~~/a higher rating~~, so as to ascertain the effectiveness of the corrective actions. Experience gained from previously taken corrective actions and their degree of effectiveness should be taken into account when selecting the proper corrective actions.

4.1.6 Guidance on best practices for fuel-efficient operation of ships, set out in chapter 5, can be used to facilitate this part of the planning phase. Also, in the planning process, particular consideration should be given to minimize any onboard administrative burden.

Company-specific measures

4.1.5 The improvement of energy efficiency and reduction of carbon intensity of ship operation does not necessarily depend on single ship management only. Rather, it may depend on many stakeholders including ship repair yards, shipowners, operators, charterers, cargo owners, ports and traffic management services. For example, "Just in time" – as explained in paragraph 2.4 – requires good early communication among operators, ports and traffic management service. The better coordination among such stakeholders is, the more improvement can be expected. In most cases, such coordination or total management is better made by a company rather than by a ship. In this sense, ~~it is recommended~~ a company should also establish an energy management and decarbonization plan, [including the necessary coordination among stakeholders], to improve the performance of ~~manage~~ its fleet ~~(should it not have one in place already).~~ [It is recommended to make the necessary coordination among stakeholders].

Human resource development

4.1.6 For effective and steady implementation of the adopted measures, raising awareness of and providing necessary training for personnel both on shore and on board are an important element. Such human resource development is encouraged and should be considered as an important component of planning as well as a critical element of implementation.

Goal setting

4.1.7 The last part of planning is goal setting. For ships subject to regulation 22B the goal setting should be in accordance with the requirements of regulation 22B and should include the following information and calculations:

.1 the ship's required annual operational CII for the next three years;

.2 the ship's attained annual operational CII; and

.3 the ship's operational CII rating (A-E) [from the moment this has been established for the first time].

4.1.10 For ships not subject to regulation 22B ~~it should be emphasized that the~~ goal setting is voluntary. There is no need to announce the goal or the result to the public, and neither a company nor a ship are subject to external inspection. The purpose of goal setting is to serve as a signal which involved people should be conscious of, to create a good incentive for proper implementation, and then to increase commitment to the improvement of energy efficiency. The goal can take any form, such as the AER, the annual fuel consumption or a specific target of Energy Efficiency Operational Indicator (EEOI). Whatever the goal is, the goal should be measurable and easy to understand.

4.2 Implementation

Establishment of implementation system

4.2.1 After a ship and a company identify the measures to be implemented, it is essential to establish a system for implementation of the identified and selected measures by developing the procedures for energy and carbon intensity management, by defining tasks and by assigning them to qualified personnel. [It should include instructions and procedures to ensure implementation of measures, defined levels of authority and lines of communication, procedures for reporting non-conformities, procedures for internal audits and management review. At least a qualified personnel should be designated to be responsible for the implementation of measures to achieve the carbon intensity goals and a responsible for the fleet's company energy efficiency management should be designated to review regularly (at least yearly) the efficiency of the implemented measures and to decide on corrective actions]. Thus, part I of SEEMP should describe how each measure should be implemented and who the responsible person(s) is. The implementation period (start and end dates) of each selected measure should be indicated. The development of such a system can be considered as a part of planning, and therefore may be completed at the planning stage.

Implementation and record-keeping

4.2.2 The planned measures should be carried out in accordance with the predetermined implementation system. Record-keeping for the implementation of each measure is beneficial for self-evaluation at a later stage and should be encouraged. If any identified measure cannot be implemented for any reason(s), the reason(s) should be recorded for internal use.

4.2.3 For ships subject to regulation 22B the implementation and record keeping should further include the required monitoring of the ships energy efficiency in accordance with section 4.3.

4.3 Monitoring

Monitoring tools

4.3.1 The energy efficiency of a ship should be monitored quantitatively. This should be done by an established method, preferably by an international standard. The [AER, the EEOI], or another performance indicator developed by the Organization are some ~~is one~~ of the internationally established tools to obtain a quantitative indicator of energy efficiency of a ship and/or fleet in operation, and can be used for this purpose. ~~Therefore, EEOI or AER could be considered as the primary monitoring tool, although other quantitative approved measures also may be appropriate.~~

Alternative: 4.3.1 The energy efficiency of a ship should be monitored quantitatively. The primary monitoring tool is the ships attained annual operational CII in accordance with the guidelines developed by the Organization (Reference to actual IMO document).

4.3.2 If used, it is recommended that the EEOI [proposal to relate this to CII] is calculated in accordance with the Guidelines for the development of a Ship Energy Efficiency Management Plan (MEPC.1/Circ.684) developed by the Organization, adjusted, as necessary, to a specific ship and trade.

Alternative 4.3.2 If used, it is recommended that the EEOI [proposal to relate this to CII] is calculated in accordance with the Guidelines for the development of a Ship Energy Efficiency Management Plan (MEPC.1/Circ.684) developed by the Organization, adjusted, as necessary, to a specific ship and trade.

4.3.3 In addition to the EEOI [proposal to relate this to CII], if convenient and/or beneficial for a ship or a company, other measurement tools can be utilized. In the case where other monitoring tools are used, the concept of the tool and the method of monitoring may be determined at the planning stage.

Alternative: 4.3.3 In addition to the CII, if convenient and/or beneficial for a ship or a company, other measurement tools can be utilized as supplemental data. In the case where other monitoring tools are used, the concept of the tool and the method of monitoring may be determined at the planning stage.

4.3.4 For ships subject to regulation 22B the monitoring tool should further monitor the information necessary for documenting the calculation of the ships attained annual operational CII and operational rating in accordance with the guidelines developed by the Organization *(Reference to actual IMO document)*.

Establishment of monitoring system

4.3.5 It should be noted that whatever measurement tools are used, continuous and consistent data collection is the foundation of monitoring. To allow for meaningful and consistent monitoring, the monitoring system, including the procedures for collecting data and the assignment of responsible personnel, should be developed. The development of such a system can be considered as a part of planning, and therefore should be completed at the planning stage.

4.3.6 It should be noted that, in order to avoid unnecessary administrative burdens on ships' staff, monitoring should be carried out as far as possible by shore staff, utilizing data obtained from existing required records such as the official and engineering log-books and oil record books, etc. Additional data could be obtained as appropriate.

Search and rescue

4.3.7 When a ship diverts from its scheduled passage to engage in search and rescue operations, it is recommended that data obtained during such operations is not used in ship energy efficiency monitoring, and that such data may be recorded separately.

4.4 Self-evaluation and improvement

4.4.1 Self-evaluation and improvement is the final phase of the management cycle. This phase should produce meaningful feedback for the coming first stage, i.e. planning stage of the next improvement cycle.

4.4.2 The purpose of self-evaluation is to evaluate the effectiveness of the planned measures and of their implementation, to deepen the understanding on the overall characteristics of the ship's operation such as what types of measures can/cannot function effectively, and how and/or why, to comprehend the trend of the efficiency improvement of that ship and to develop the improved management plan for the next cycle [through identification of further opportunities for improving energy efficiency and reducing carbon intensity].

4.4.3 For this process, procedures for self-evaluation of ship energy management should be developed. Furthermore, self-evaluation should be implemented periodically by using data collected through monitoring. In addition, it is recommended to invest time in identifying the cause-and-effect of the performance during the evaluated period for improving the next stage of the management plan

4.4.5 [building blocks self-evaluation and improvement]

4.5 Verification

4.5.1 The SEEMP shall be subject to verification and company audits, in accordance with regulation 22B.5 of MARPOL Annex VI.

4.5.2 [building block verification and audit requirements]

4.6 Corrective actions

4.6.1 A Ship rated as D for three consecutive years or rated as E, shall develop a plan of corrective actions to achieve the required annual operational CII, in accordance with regulation 22B.7 of MARPOL Annex VI.

4.6.2 [building block corrective action plan]

4.6.3 The SEEMP shall be reviewed and updated to include the plan of corrective actions accordingly, in accordance with regulation 22B.8 of MARPOL Annex VI.

4.6.4 [building blocks review and update of the SEEMP]

4.6.5 The updated SEEMP shall be submitted to the Administration or any organization duly authorized by it for verification within one month after reporting the attained operational CII in accordance with regulation 22B para.8 of MARPOL Annex VI.

4.6.6 A ship rated as D for three consecutive years or rated as E shall duly undertake the planned corrective actions in accordance with the updated SEEMP, in accordance with regulation 22B.9 of MARPOL Annex VI.

Section 5 of Resolution MEPC.282(70).

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APPENDIX 1

SAMPLE FORM OF SHIP MANAGEMENT PLAN TO IMPROVE ENERGY EFFICIENCY (PART I OF THE SEEMP)

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GOAL

Measurable goals

Required annual operational Carbon Intensity Indicator for the next three years for ships subject to regulation 22B of MARPOL Annex VI.

EVALUATION

Procedures for self-evaluation and improvement

CORRECTIVE ACTIONS

Review of measures
Revised implementation plan in accordance with the corrective actions
Improved attained EEXI

Appendix 3 to include the attained CII