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FURTHER CONSIDER CONCRETE PROPOSALS TO IMPROVE THE OPERATIONAL ENERGY EFFICIENCY OF EXISTING SHIPS, WITH A VIEW TO DEVELOPING DRAFT AMENDMENTS TO CHAPTER 4 OF MARPOL ANNEX VI AND ASSOCIATED GUIDELINES, AS APPROPRIATE

PROPOSAL FOR APPROVAL BY MEPC 75 OF MANDATORY AMENDMENTS TO STRENGTHEN THE SHIP ENERGY EFFICIENCY MANAGEMENT PLAN (SEEMP)

Submitted by Bahamas, Chile, Liberia, India, United Arab Emirates, Singapore, ICS, IPTA, RINA

SUMMARY

Executive summary: This document contains a concrete proposal for a short-term measure for immediate consideration by ISWG-GHG 6, for finalisation at ISWG-GHG 7 prior to approval at MEPC 75. Incorporating elements of other proposals, the core of this proposal is to strengthen the SEEMP, subjecting it to mandatory external audits, either under the ISM Code or by amending the IEEC survey regime. The co-sponsors have assessed of the impact on Member States, and identified there will be no disproportionate impacts, despite the significant contribution this measure should make towards achieving the 2030 target. This paper also suggests other actions to be taken by ISWG-GHG 6, in order to ensure that the measure proposed is implemented quickly.

Strategic direction: 3

High-level action:

Output: 3.2

Action to be taken: Paragraph 24

Related documents: MEPC.304(72), ISWG-GHG 4/2/10, ISWG GHG 4/2/9, MEPC 74/7/4, ISWG-GHG 5/4/1, ISWG-GHG 5/4/12

Introduction

1. It will be recalled that the *Initial IMO strategy on reduction of GHG emissions from ships* (MEPC.304(72)) (the initial strategy) was adopted at MEPC 72 and a draft programme of follow-up actions was agreed at MEPC 73. The co-sponsors assert that for the Organization to demonstrate progress, towards the level of ambition for 2030, MEPC 75 will need to approve amendments to MARPOL Annex VI, for adoption at MEPC 76, that will begin to deliver further GHG reductions by international shipping by 2023. The co-sponsors therefore provide a proposal for a mandatory short-term measure, for immediate consideration by ISWG-GHG 6, for finalisation at ISWG-GHG 7 prior to approval at MEPC 75.

3. Having carefully reviewed those documents which have proposed concrete short term measures (including ISWG-GHG 4/2/10, ISWG-GHG 5/4/1, ISWG-GHG 5/4/9, ISWG-GHG 54/12 and MEPC 74/7/4), and having considered the concerns raised in document ISWG-GHG 5/4/13, the concrete proposal for a mandatory short term GHG reduction measure presented below could be quickly agreed and implemented and is likely to achieve broad support from Member States..

4. While incorporating elements of previous proposals with regard to technical and operational measures, the core of this proposal is to strengthen the Ship Energy Efficiency Management Plan (SEEMP), by subjecting it to mandatory external audits. The co-sponsors consider that there are two alternative regulatory options to strengthen the SEEMP and provide controllable implementation, either:

- Mandate that the SEEMP will form part of the ships Safety Management System (SMS), making it subject to the existing verification requirements of *the International Management Code for the Safe Operation of Ships and Pollution Prevention* (the ISM Code); or

- Introduce mandatory periodic audits/surveys of the SEEMP as a requirement for maintaining the validity of the International Energy Efficiency Certificate (IEEC), issued under MARPOL Annex VI.

5. The co-sponsors consider that there are both advantages and disadvantages to each of these two options, but also assert that either option would deliver a robust, effective and implementable mechanism for strengthening the SEEMP and making it subject to regular mandatory external audits. The proposals provided here could be implemented either by a regulatory amendment making the SEEMP part of the ships SMS, or by amending the survey regime for the ships IEEC. The working group could then invite concrete proposals on the format of the regulatory amendments to be submitted to MEPC 75. This would potentially allow measures to be approved at MEPC 75 and adopted at MEPC 76.

6. However, approval of relatively simple amendments at MEPC 75 should not preclude further consideration of other candidate measures or other proposals submitted by Member States.

General Considerations

7. The co-sponsors believe that short term measures should:

- Be effective, and make progress towards delivering the levels of ambition of the initial strategy in partucular that established for 2030;
- Promote innovation and adoption of GHG reducing technologies;
- Be implementable;
- Address existing ships;

- Avoid penalising early movers and/or ships which are already operated as efficiently as is practicably achievable;
- Minimise negative impacts on Member States and global trade; and
- Not divert unnecessary time and resources from the development of longer term measures needed to achieve the level of ambition established for 2050 and beyond.

9. The co-sponsors firmly believe that goal based measures will promote innovation and will provide shipowners with the necessary flexibility to select the most appropriate GHG reduction strategies for their ships, bearing in mind that the high cost of fuel – which is expected to increase considerably as a result of the 2020 sulphur cap – means that shipowners have every incentive to further reduce their fuel consumption.

10. While the co-sponsors support a goal based approach, it is acknowledged that more prescriptive measures could be preferred by some Member States, which could also address concerns that some charterers may be unwilling to co-operate with implementing goal based measures. This is especially important for ships where it is the charterer, not the shipowner, which makes the key decisions that determine operational efficiency. In such cases, technical measures (e.g., limiting shaft power) might be more appropriate than operational measures. The co-sponsors therefore consider that shipowners should be able to decide whether to implement operational or technical measures, or a combination of both. What is of the utmost importance is that further fuel efficiencies are achieved by the proposed amendments (and supporting guidelines), rather than the means by which these efficiencies are achieved, which may need to vary considerably according to type and age of the ship, or the trades and ocean conditions.

11. It should be noted that Part I of the SEEMP already covers both operational and technical measures.

12. The ISM Code, introduced between 1998 and 2002, provides for external and periodic auditing by Administrations of goal based means for improving the safe operation and environmental performance of ships. It is expected that the extension of this approach to the SEEMP will deliver successful results with regard to CO_2 reduction. However, should member states have reservations with respect to making the SEEMP part of the SMS then the same objectives could be achieved by developing through life audit and survey requirements for the SEEMP as a condition for the validity of the IEEC.

Concrete Proposals

13. It is proposed to recommend to MEPC 75 that Part I of the SEEMP should either:

- Form part of the ship's Safety Management System (SMS) for those ships subject to SOLAS Chapter IX and *the International Management Code for the Safe Operation of Ships and Pollution Prevention* (the ISM Code); or

- Be made subject to periodic audits/surveys which would be a condition for the validity of the ships IEEC.

The SEEMP would then be subject to mandatory external audits by the Administration (or its Recognized Organization). In line with the ISM Code, this would include both interim and periodic audits (every two-three years and every five years) during which shipping companies would have to demonstrate that they are doing everything possible to improve efficiency and reduce CO2 emissions.

If the IEEC survey route was preferred, it is anticipated that survey periodicity would be similar, or potentially more frequent.

14 To demonstrate the effectiveness of the enhanced SEEMP, emissions reduction should be quantified. Recognising that some ships may prefer to demonstrate emissions through performance monitoring, and that others would prefer a pre-certification scheme, it is proposed to introduce two SEEMP schemes:

- SEEMP Scheme A – emissions reduction demonstration using performance monitoring (CII) ; and

- SEEMP Scheme B – pre-certification of the ships technical efficiency (EEXI)

15. GHG emissions reduction objectives, should be established by the Organization and be incorporated within Part I of the SEEMP. These would either be expressed as:

*Carbon Intensity Indicators (CII) for SEEMP Scheme A, or
* Energy Efficiency Existing Ship Index (EEXI) value for SEEMP Scheme B.

The shipowner would determine how best to achieve these objectives.

16. The Organization should either develop a range of Carbon Intensity Indicators which could be applied to different ship types and segments, or alternatively develop guidelines for establishing appropriate CIIs for SEEMP Scheme A.

17. In the case of SEEMP Scheme B, the proposals provided in document ISWG-GHG 5/4/1 (Japan) should be further developed. Ships would be assigned an Energy Efficiency Existing Ship Index value for SEEMP Scheme B.

18. With the SEEMP Scheme A, it will not be necessary to assign an EEXI value to the ship; ships would instead demonstrate the necessary emissions reduction using CIIs. However, the SEEMP would remain part of the SMS and the operational management of the ship would still be subject to a review and improvement process.

19. The Organization should develop guidelines for auditing Part I of the SEEMP, including both SEEMP Scheme A and SEEMP Scheme B. The guidelines would include provisions to address cases where an objective is not achieved because of circumstances outside the control of the shipowner, and for ships serving Member States subject to particularly challenging operational conditions, such as geographical remoteness or prevalence of adverse weather.

20. During audits of Part I of the SEEMP it should be demonstrated that the measures and self-evaluation process of the SEEMP have been fully implemented, including a review of CIIs and/or the EEXI, as applicable.

21. Objectives and guidelines for SEEMP Scheme A and SEEMP Scheme B would be developed so as to maintain full equivalence between each of the two schemes, and so maintain a level playing field for all ships.

22. Should these amendments be agreed at MEPC 75 and adopted at MEPC 76, they could enter into force by 2023 using the tacit acceptance procedure as an amendment to MARPOL Annex VI. This would allow the Committee a period of three years, or five sessions of the Committee (including MEPC 76) to develop the necessary supporting guidelines.

23. The above proposals are considered to be Group A candidate short-term measures, which can be considered and addressed under existing IMO instruments. An assessment of the impact on Member States is attached as **Annex 1**.

Action requested of ISWG-GHG 6

26. Taking account of the assessment of the impact on States at Annex 1, the working group is requested to agree to strengthening the SEEMP as a priority item, to agree in principle which of the two regulatory options is preferred and to invite concrete proposals for text for the necessary regulatory amendment(s) to be submitted to MEPC 75, with an aspiration to reach agreement at MEPC 75 and adoption at MEPC 76.

27. ISWG-GHG 6 is invited to consider and agree to the following actions:

1. Development of two options to demonstrate the effectiveness of the SEEMP and associated emission reductions:performance monitoring (SEEMP Scheme A) or ship pre-certification (SEEMP Scheme B).

2. the Organization should develop GHG emissions reduction objectives, consistent with the levels of ambition of the initial strategy, to be incorporated within Part I of the SEEMP. For SEEMP Scheme A these objectives would utilise appropriate carbon intensity indicators (CIIs), for SEEMP Scheme B they would be expressed as an existing ship energy efficiency index (EEXI) value. In each case, objectives should be fully equivalent and with neither option being either more or less onerous;

3. the Organization should consider either development of a range of CIIs which could be applied to different ship types and segments (SEEMP Scheme A), or alternatively, guidelines for establishing appropriate CIIs and to agree upon a timetable for completion of this work;

4. the proposals provided in ISWG-GHG 5/4/1 (Japan) should be adopted as the basis for SEEMP Scheme B;

5. where a ship applies SEEMP Scheme A it would not be necessary to assign an EEXI value to the ship, since ships would demonstrate that they have achieved required CO_2 emissions reduction using CIIs;

6. where a ship applies both technical and operational measures in order to achieve the necessary GHG emission reductions then the ship would be subject to SEEMP Scheme A;

7. the Organization should develop guidelines for auditing Part I of the SEEMP, for both SEEMP Scheme A and SEEMP Scheme B. The guidelines are to include provisions to address cases where an objective is not achieved because of circumstances outside the control of the shipowner, and for ships serving Member States subject to particularly challenging operational conditions such as geographical remoteness or prevalence of adverse weather; and to agree upon a timetable for the completion of this work; and

8. Developement of guidelines for ensuring that Member States with ports and areas which are subject to particularly challenging operational conditions, such as geographical remoteness or prevalence of adverse weather, are not penalised by operational efficiency indicators used in conjunction with the audited SEEMP.

Annex 2

INITIAL ASSESSMENT OF IMPACTS

1 Measure: Enhancing the SEEMP

1.1 Proposals

.1 Part I of the SEEMP should be made subject to mandatory audits/surveysby the Administration or its duly authorised Recognized Organizations. This could either take the form of making the SEEMP part of the ships SMS, or by developing appropriate audit/survey requirements linked to the validity of the ships IEEC.

.2 GHG emissions reduction objectives, consistent with the levels of ambition of the initial strategy, should be established by the Organization and be incorporated within Part I of the SEEMP. The shipowner would determine how to achieve these objectives.

.3 The Organization should consider either development of a range of carbon intensity indicators (CIIs) which could be applied to different ship types and segments, or alternatively, guidelines for establishing appropriate CIIs.

.4 The proposals provided in ISWG-GHG 5/4/1 (Japan) should be the basisi for a framework used to improve the efficiency of existing ships, should shipowners elect to apply technical measures, with ships being assigned an EEXI value.

.5 In cases where purely operational measures are implemented it would not be necessary to assign an EEXI value to the ship, ships would demonstrate the necessary emissions reduction using CIIs.

.6 The Organization should develop guidelines for auditing Part I of the SEEMP, including provisions to address cases where an objective is not achieved because of circumstances outside the control of the shipowner, and for ships serving Member States subject to particularly challenging operational conditions, such as geographical remoteness or prevalence of adverse weather.

.7 At audits of the SMS it should be demonstrated that the measures and self-evaluation process of the SEEMP have been implemented, including a review of CIIs and/or the EEXI.

1.2 Assessment of impacts on Member States

.1 Geographic remoteness of and connectivity to main markets

The proposal includes provisions to ensure that measures do not act to disincentivise provision of shipping services to destinations which are subject to greater prevalence of adverse weather or [where] trade is inherently imbalanced (e.g. remote communities dependent upon imports). These provisions consist in developing guidelines to ensure that Member States with ports and areas which are subject to particularly challenging operational conditions (geographical remoteness or prevalence of adverse weather), are not penalised by operational efficiency indicators used in conjunction with the audited SEEMP.

.2 Cargo value and type

Since the measures would apply to all ships subject to SOLAS Chapter IX or to MARPOL Annex VI according to whether they are linked to the SMS or IEEC, there is no discrimination between different cargoes or cargoes of different value. However, since the measures are goal based, and offer a choice between operational or technical measures, or a combination of both, it is anticipated that shipowners would select measures appropriate for their own operating conditions. This would allow measures to be optimised for particular cargo segments.

.3 Transport dependency

It is recognised that short term GHG measures might disproportionately impact Member States which are dependent on maritime transport and which are located in areas likely to result in poor indicated operational efficiency. To mitigate this risk, the proposals include provisions to develop guidelines for ensuring that Member States with ports and areas which are subject to particularly challenging operational conditions (geographical remoteness or prevalence of adverse weather) are not penalised by operational efficiency indicators.

.4 Transport costs

The proposals are not expected to increase transport costs. Improving ship efficiency will result in lower fuel use with a consequential cost saving. Although investing in technology improvements will require investment should a shipowner make this choice, it should be noted that the proposals allow for options such as speed optimisation or applying a power limitation which could be implemented with minimal cost.

.5 Food security

The proposals will have no adverse impact on food security.

.6 Disaster response

The proposals will have no adverse impact on disaster response.

.7 Cost-effectiveness

Since the measures are flexible and goal based, facilitating decision making by shipowners based on their own particular operating model, they are expected to be inherently cost effective. Shipowners could select from a wide range of options, from higher capital investment in technical improvements leading to greater operational savings over time, to low (potentially zero) capital cost measures such as speed optimisation and limiting shaft power.

.8 Socio-economic progress and development

The proposed provisions to develop guidelines for ensuring that Member States with ports and areas, which are subject to particularly challenging operational conditions (geographical remoteness or prevalence of adverse weather) are not penalised by operational efficiency indicators should ensure there will be no significant adverse socio-economic impacts affecting progress and development.

1.3 Justification

.1 Delivery of the *Initial IMO strategy on reduction of GHG emissions from ships* (MEPC.304(72)), in particular providing a pathway to deliver the 2030 level of ambition of the initial strategy.

.2 Avoiding market distortion 1: new ships are expected to be subject to stricter requirements towards 2030 and beyond. In order to retain a level playing field and avoid distortion of the market, older vessels should also be required to demonstrate progress towards stricter energy efficiency requirements.

.3 Promoting technical innovation by avoiding overly prescriptive measures and offering shipowners an entirely goal based mechanism which they will be expected to achieve by applying any suitable measures, operational and/or technical.

.4 Supporting those segments of the industry for which goal based operational measures may not be appropriate by providing a technical measures based option.

1.4 Number of ships affected and impact on GHG emissions

.1 All ships subject to SOLAS Chapter IX or MARPOL Annex VI, according to whether the ,measures are linked to the SMS as required by the ISM Code or to the ships IEEC.

.2 Mandatory reduction in transport work emissions to achieve the 2030 level of ambition of the initial strategy i.e. a 40% effiiency improvement as an average across the fleet compared to 2008 . In reality, it could be expected that the proposed measures would actually exceed the 2030 level of ambition by promoting both technical and operational improvements.

1.5 Impact on seafarers

.1 The measure targets ship design and operation. For exampple, if shaft power is a part of reducing a ship’s EEXI value, or speed is reduced as part of speed optimisation within the SEEMP, then this may increase sailing times for some ships.

.2 Depending upon the nature of measures developed by the Company within the SEEMP there may be a need to provide additional training to seafarers and some additional on board administrative burden in maintaining information for the purposes of demonstrating effectiveness of the SEEMP.

1.6 Positive Impacts

.1 Reduced fuel use and thus reduced GHG emissions.

.2 Reduced local emissions (e.g. NOx, SOx and PM) as a consequence of reduced fuel use and greater machinery efficiency.

.3 Improved transport work efficiency and delivery of the levels of ambition of the initial strategy.

.4 Potential to accelerate adoption of new technologies and fuels by providing a goal based structure; for example, shipowners may decide to invest in such technologies in order to avoid reducing speed to the same degree as competitors.

.5 Avoids forcing shipowners to make capital investment in older tonnage with a consequential increase in shipping costs.

.6 The goal based nature of the proposals would allow different segments of the industry to identify measures appropriate to their own operations, minimising the risk of short term GHG reduction measures increasing shipping transport costs or distorting markets.

.7 The proposals include provision to prevent adverse consequences for trade in the case of Member States which are subject to increased prevalence of adverse weather, unbalanced trade, geographical remoteness or other factors which could potentially penalise trade to such areas.

1.7 Negative Impacts

.1 Some ships could be expected to reduce speed, increasing voyage time. This could also necessitate an increased number of ships to maintain transport supply in those segments which reduce speed. However these impacts are expected to be in line with present trends associated with new build ships being provided with lower power in order to reduce EEDI values and are not therefore expected to result in any negative impacts in themselves.

.2 It should also be noted that these proposals are flexible in nature so as to promote innovation and more efficient ships and/or alternative lower carbon fuels. It is expected that some ships would apply technical measures to improve efficiency, adopt alternative fuels or other measures which would allow them to achieve the necessary objectives without slowing down.

1.8 Quantification of Impacts

.1 Energy efficiency improvement and GHG reductions at least in line with the 2030 level of ambition of the initial strategy.

.2 Shipping transport costs impacts are expected to be within normal levels of commercial variability.

.3 No significant impact for trade is expected.

1.9 Will the measure result in any disproportionately negative impacts?

.1 No.

1.10 Expected workload for IMO

.1 Develop guidelines for calculation, survey and verification of EEXI.

.2 Develop guidelines for defining SEEMP objectives, operational energy efficiency indicators and auditing of the SEEMP.

.3 Develop guidelines for ensuring that Member States with ports and areas which are subject to particularly challenging operational conditions, such as geographical remoteness or prevalence of adverse weather are not penalised by operational efficiency indicators.

.4 Develop amendments to MARPOL Annex VI, as applicable.