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REDUCTION OF GHG EMISSIONS FROM
SHIPS
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Agenda item x

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Short Terms Measures to Reduce GHG emissions from international shipping

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SUMMARY

Executive summary: Having reviewed the candidate short terms measures contained within the initial strategy, the co-sponsors propose strengthening the Ship Energy Efficiency Management Plan (SEEMP) in conjunction with early implementation of the Energy Efficiency Design Index (EEDI) phase 3 for some ship types. These measures would require only minimal amendments to existing instruments and could be agreed and implemented relatively quickly, delivering actual GHG reductions without undue delay and moving the industry towards meeting its 2030 target of improving efficiency as an average across the sector by at least 40%.

Strategic direction:

High-level action:

Output:

Action to be taken: Paragraph 15

Related documents: MEPC.304(72), MEPC.282(70), MEPC.1/Circ.850/Rev.2, MEPC.1/Circ.684, MEPC.67/5/4, MEPC.65/4/30, MEPC.72/Inf.5, ISWG-GHG 3/2/10, SSE.5/17

Introduction

1. The Committee, at MEPC 72, adopted the Initial IMO strategy on reduction of GHG emissions from ships (MEPC.304(72)) (the initial strategy). The co-sponsors fully supported the adoption of this initial strategy and consider it to be a major step forward for the international shipping sector, setting out a pathway for the phase-out of GHG emissions.

2. The initial strategy calls for consideration of short-term measures to be prioritized, with a view to achieve further reduction of GHG emissions from international shipping before 2023. This means that possible short-term measures should be finalized and agreed by the Committee between 2018 and 2023.

3. The co-sponsors support reaching agreement on short-term measures which could be implemented quickly and reduce GHG emissions. Having reviewed the list of candidate short term measures it is proposed that enhancing the Ship Energy Efficiency Management Plan (SEEMP) in conjunction with existing IMO work to agree early implementation of the Energy Efficiency Design Index (EEDI) phase 3 should be agreed as short-term measures to further reduce GHG emissions from international shipping.

4. Enhancing the SEEMP, in conjunction with early implementation of EEDI phase 3, could achieve the reductions which are claimed for some of the other candidate short-term measures without having to develop new requirements and with lower administrative burden.

5. In order to deliver rapid reductions in GHG emissions the co-sponsors consider that it is essential that short-term measures should firstly be effective and further that they can be agreed and implemented quickly. Enhancing the SEEMP along with early implementation of EEDI phase 3 would fully satisfy these requirements and that this is not the case for the other candidate short-term measures.

6. The co-sponsors consider that the following candidate short term emissions reduction measures should also be agreed:

1. measures to reduce methane slip and fugitive methane emissions during liquefied natural gas (LNG) bunkering in order to maximise the environmental benefits of adopting LNG as a marine fuel. LNG could make a useful contribution to shipping achieving the initial strategy's 2030 emission reduction target; and
2. measures to facilitate more efficient ports.

Discussion

7. The initial strategy includes the following five candidate short-term measures which could directly reduce GHG emissions from ships (paragraph 4.6, MEPC.304(72):

1. further improvement of the existing energy efficiency framework with a focus on EEDI and SEEMP, taking into account the outcome of the review of EEDI regulations;
2. develop technical and operational energy efficiency measures for both new and existing ships, e.g. Annual Efficiency Ratio (AER), Energy Efficiency per Service Hour (EESH), Individual Ship Performance Indicator (ISPI), Fuel Oil Reduction Strategy (FORS);
3. establishment of an Existing Fleet Improvement Programme;
4. consider and analyse the use of speed optimization and speed reduction as a measure, taking into account safety issues, distance travelled, distortion of the market or to trade and that such measure does not impact on shipping's capability to serve remote geographic areas; and
5. consider and analyse measures to address emissions of methane and further enhance measures to address emissions of Volatile Organic Compounds.

8. The co-sponsors consider that it is essential that short term measures should:

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- be effective;
 - be implementable;
 - minimise negative impacts on Member States and global trade; and
 - not divert time and resources from the development of longer term solutions such as zero carbon fuels.

Short term measures which are relatively simple to implement, verify and enforce are more likely to deliver early reductions to GHG emissions than more complex measures which will require prolonged work to develop and agree. With respect to negative impacts on Member States the co-sponsors draw attention to paragraphs 4.9 – 4.12 of the initial IMO strategy on reduction of GHG emissions from ships (MEPC.304(72)).

9. Whilst recognising the importance and valuable contribution which effective short term measures may make to reducing GHG emissions from international shipping, the co-sponsors consider that work to agree short term measures should not detract from efforts to develop long term solutions. Decarbonising the industry will require the development and commercialisation of new fuels and energy conversion technologies. This will entail a huge research and development effort as well as significant work at IMO to ensure that emerging new technologies can be safely used onboard ships.

10. The initial strategy also includes several candidate short term measures which will not directly reduce GHG emissions but which will support informed decision making. These include development of guidelines to assess the lifecycle GHG/carbon intensity of fuels, undertaking additional GHG emission studies and enhancing technical cooperation and capacity-building activities such as under the ITCP. These are measures which the co-sponsors consider should be an integral part of the Organization's work and which will be necessary regardless of which short term measures are adopted.

Proposals

11. The co-sponsors propose that the following candidate short term GHG emissions reduction measures should be agreed and implemented:

1. Early implementation of EEDI phase 3 for those ships for which early implementation is practicable and which does not impose unacceptable risks to safety, along with consideration of future EEDI phase 4;
 2. Strengthening the SEEMP by making Part I of the SEEMP part of the ship's Safety Management System (SMS) for those ships subject to SOLAS Chapter IX. This would make the SEEMP subject to a rigorous evaluation and improvement process, including mandatory external audits by the Administration or a duly authorised Recognised Organization on a regular basis. This would include interim (where applicable), initial, intermediate and renewal audits; the renewal audit being carried out after five years. This would enhance the effectiveness of the SEEMP and could be done in a way which requires minimal regulatory amendments. The existing SEEMP guidelines already include guidance on speed optimisation and the use of operational efficiency indicators as an internal mechanism to support the evaluation and improvement process. A ship owner could select an appropriate operational energy efficiency indicator, and/or other relevant key performance indicators (KPI's), as part of their SEEMP self-evaluation and improvement process. This would avoid the potential for market distortion and the misuse of operational energy efficiency indicators which would result from their publication;
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3. Development and implementation of measures to reduce methane slip and fugitive methane emissions when bunkering;
4. Development and implementation of measures to make ports more efficient. There should be further consideration of measures to make provision of shore side power more attractive, however this should recognise that use of shore power is not necessarily the most appropriate solution for all ports or for all ships and could build upon the work already started to develop cold ironing guidelines (SSE. 5/17, paragraph 13.4). The work should consider measures to ensure that ships do not pay more for the supply of electricity than other industrial consumers in the vicinity of ports, such as extending fuel duty exemptions which are applicable to fossil marine fuels to shore supplied electricity.

12. Although not a short term measure, the co-sponsors believe that work to accelerate the development of alternative fuels and forms of energy conversion should be accelerated as a matter of urgency before 2023.

13. In paragraph 8 the co-sponsors stated that it is essential that short term measures should:

- be effective;
- be implementable; and
- minimise negative impacts on Member States and global trade; and
- not divert time and resources from the development of longer term solutions such as zero carbon fuels.

The measures proposed in paragraph 12 satisfy these criteria and would need only minor amendments to existing instruments to be implemented. Potential amendments to MARPOL Chapter IV Regulation 22 and to the SEEMP guidelines are provided in the annexes to this document for the consideration of the Committee. In addition, the co-sponsors consider it would be necessary to review the *Revised guidelines on the implementation of the International Safety Management (ISM) Code by Administrations (A.1118(30))* in order to ensure that these recognise differences between safety and environmental aspects of the SMS. This is particularly pertinent to the nature of certain non-comformities. For example, failure to meet an environmental improvement objective may be the result of circumstances beyond the control of the shipowner such as prolonged periods of bad weather or a change in ship deployment.

14. Alternative candidate short term measures could not be agreed and implemented as quickly, and they would all entail a greater administrative burden for no additional benefit in terms of GHG emissions reduction.

Action requested by the Committee.

15. The Committee is invited to consider the comments and proposals contained in this submission and to take action as appropriate.

ANNEX 1

PROPOSED AMENDMENTS TO MARPOL CHAPTER IV REGULATION 22 - SHIP ENERGY EFFICIENCY MANAGEMENT PLAN (SEEMP)

Modifications to MARPOL Chapter IV Regulation 22 are proposed as follows, with additions and deletions shown through underlining and ~~striketrough~~.

1 Each ship shall keep on board a ship specific Ship Energy Efficiency Management Plan (SEEMP). This shall ~~may~~ form part of the ship's Safety Management System (SMS) for ships subject to SOLAS Chapter IX.

2 On or before 31 December 2018, in the case of a ship of 5,000 gross tonnage and above, the SEEMP shall include a description of the methodology that will be used to collect the data required by regulation 22A.1 of this Annex and the processes that will be used to report the data to the ship's Administration.

3 The SEEMP shall be developed taking into account guidelines adopted by the Organization.

4 At intermediate and renewal audits of the SMS the Company is to demonstrate, using appropriate performance monitoring tools and indicators, what measures have been taken to optimise operational performance and to improve the efficiency of the ship.

ANNEX 2

PROPOSED AMENDMENTS TO RESOLUTION MEPC.282(70) - 2016 GUIDELINES FOR THE DEVELOPMENT OF A SHIP ENERGY EFFICIENCY MANAGEMENT PLAN (SEEMP)

Modifications to SEEMP guidelines are proposed as follows, with additions and deletions shown through underlining and ~~striketrough~~.

Part only shown.

3.4 In addition, ships which are subject to the requirements of SOLAS Chapter IX ~~many companies~~ already develop, implement and maintain a Safety Management System. In such case, part I of the SEEMP ~~may form~~s part of the ship's Safety Management System.

4.4.4 For ships which are subject to SOLAS Chapter IX, the SEEMP forms part of the Safety Management System and as such is subject to the audit, verification and certification processes of the International Safety Management Code (ISM Code).