

MARINE ENVIRONMENT PROTECTION  
COMMITTEE  
72nd session  
Agenda item 7

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## REDUCTION OF GHG EMISSIONS FROM SHIPS

### Towards zero CO<sub>2</sub> emissions through innovative technology

Submitted by CESA

#### SUMMARY

*Executive summary:* CESA supports an ambitious IMO GHG Strategy implementing a zero emission approach utilizing all technologies. The document focusses on short term measures for both existing ships and future ships, including candidate measures, embracing incentives for rapid uptake of technology.

*Strategic Direction, if applicable:* 3

*Output:* 3.2

*Action to be taken:* Paragraph 9

*Related documents:* ISWG-GHG 2/2, ISWG-GHG 2/2/1; MEPC 72/7; ISWG-GHG 3/INF.2 and MEPC 71/7/4

#### Introduction

1 The meetings of the Intersessional working group on Reduction of GHG emissions from ships for its second meeting from 23 to 27 October 2017 and for its third meeting from 3 to 6 April 2018 worked to develop draft text for inclusion in the initial IMO GHG Strategy.

2 The Strategy should be finalised at ISWG-GHG 3 with a view to adoption at MEPC 72. CESA would like to contribute to the progress already made by IMO, to the challenge of reducing greenhouse gas emissions to the targets set by the Paris Agreement and to ensure that shipping makes a significant contribution to achieve the targets. CESA has participated in the meetings of the ISWG-GHG and submitted technical information and evaluations.

#### Draft text for inclusion in the initial IMO GHG Strategy

3 The vision should commit to a reduction towards zero as soon as possible regardless of the individual maritime contribution to the overall GHG emissions world-wide. The draft wording "The IMO is committed to reducing GHG emissions from international shipping

towards zero" should imply that reduction to zero is possible and should be continued even if international shipping in its totality has regained the leadership as the most efficient transport mode. Shipping has been GHG emissions free for most of its history and will be again in the near future. Many of the technological options are already available and industry is continuing to develop technological solutions. The challenge will be to manage the transition, but also to cope with any future technical developments that may arise from future regulatory developments that may require innovative solutions.

4 CESA suggests that the intermediate level of ambition should be formulated as a percentage improvement of emissions per tonne-mile, which will make the absolute levels dependent on the volume of transport. The initial reductions should be introduced as mandatory requirements of stepwise reductions from 2030 until 2050, at which time alternative non-fossil fuels and alternative energy sources will be available. In our view a reduction of GHG emission per tonne-mile by 80% in 2050 would be achievable, bearing in mind that a large fraction of the specific reductions can already be achieved by non-operational measures (see results of the R&D project JOULES submitted in document ISWG-GHG 3/INF.2).

5 Among the many guiding principles already discussed, CESA considers the following to be of utmost importance. The IMO GHG Strategy should:

- .1 be ambitious and effective in contributing to the reduction of total global greenhouse gas emissions;
- .2 accommodate all technologies in the field of energy efficiency not prescribing specific methods;
- .3 promote and facilitate research, development and innovation;
- .4 ensure protection of intellectual property rights;
- .5 provide incentives and motivate early implementation; and
- .6 be binding and equally applicable to all flag States in order to avoid evasion.

6 The decisive elements of a successful IMO GHG Strategy are state of the art energy efficiency standards for newbuilding complemented by mandatory operational requirements that are transferred to the existing fleet without undue delay. In order to arrive at significant total reduction of GHG the implementation of alternative fuels and energy sources has to be initiated as soon as possible and enforced by flexible, easy to implement market-based measures embracing all technologies.

### **Candidate measures**

7 CESA would like to highlight the following high priority measures, which are considered to be indispensable to achieve both the specific and total GHG reductions as soon as possible. IMO should:

- .1 initiate and fund research, development and innovation (RDI) activities. Ambitious and coordinated RDI will be decisive for the specific GHG reductions that can be reached by 2050. Although shipyards and maritime equipment manufacturers continuously improve their products, these advances are driven by the commercial demands of their customers. The technological progress that the GHG Strategy will require may take considerable time to develop, and it may not be commercially attractive to develop or to utilise them. It is therefore desirable that some advances are hastened in advance of a commercial demand. Such initiatives should not be limited to marine propulsion and power generation systems, fuels and ship

design, since the object is to generate technologies to limit GHG emissions of any type and by any means. It would be important to create a system that would allow participation of both public research institutions delivering publicly available results, as well as commercial entities with proprietary knowledge to contribute while retaining their intellectual property rights. The foremost added value of an IMO International Maritime Research Board would be that results of industrial research and pre-competitive development could be closer aligned and coordinated with and utilized for efficient rule development, ensuring that the enhancing state of the art can be more rapidly implemented in regulations and real ships.

- .2 develop mandatory requirements and provide incentives for first movers in order to facilitate rapid uptake of technology to reduce climate disturbing emissions in the existing fleet. An IMO Strategy mainly relying on energy efficiency measures for new ships regulating the specific GHG emissions will not deliver the necessary total reductions in time. Therefore, an Existing Fleet Improvement Programme is needed in order to require technical and operational improvements of all existing ships. Newbuilding standards that can be retrofitted have to be systematically applied on existing ships by mandatory instruments in a flexible manner. The burden for the industry has to be minimized by investment aid, which should increase if measures are implemented before the application date. Since not all technical newbuilding options can be retrofitted the programme should be complemented by legally binding operational efficiency standards.

8 CESA recommends to accelerate the following measures that have been proposed as mid- or long term topics:

- .1 from EEDI to innovative emission reduction mechanisms including Market-Based Measures (MBM). The Energy Efficiency Design Index (EEDI), which is currently the only mandatory instruments regulating the specific GHG emissions of newbuildings, is too simplistic to adequately address all potential technologies and the peculiarities of all ship types. Despite its obvious drawbacks and limitation the EEDI decides whether a ship is permitted to operate in a "pass or fail" manner. This "black and white" approach is one of the main reasons why it is almost impossible to implement accelerated reduction steps. This situation will worsen when more and more technologies have to be combined in order to meet the ambitious GHG reduction necessary. The EEDI can and should be further developed, but it is impossible to incorporate complex interaction between various technologies with necessary precision to prevent a newbuilding from sailing. It may be preferable to encourage innovation and uptake of new methods by pressure from the market. The EEDI should be replaced by market-based reduction measures.
- .2 pursue the development of fossil free fuels. The development of liquid GHG neutral fuels, or fossil free propulsion systems that can be introduced earlier than 2050 should be a high priority target for the initial IMO GHG Strategy.

#### **Action requested of the Committee**

9 The Committee is invited to consider the comments above and take action as appropriate.