



MARINE ENVIRONMENT PROTECTION
COMMITTEE
59th session
Agenda item 4

MEPC 59/4/38
20 May 2009
Original: ENGLISH

PREVENTION OF AIR POLLUTION FROM SHIPS

Phase-in implementation of the Energy Efficiency Design Index for standard and complex ship types

Submitted by the Community of European Shipyards' Associations (CESA)

SUMMARY

<i>Executive summary:</i>	This document comments on the outcome of the intersessional meeting of the GHG working group and summarizes the foremost drawbacks identified, which will prevent the proposed Energy Efficiency Design Index (EEDI) from delivering CO ₂ reduction with regard to complex ships. Therefore the European shipbuilders propose a phase-in EEDI implementation starting with standard ship types, such as bulk carriers, tankers and container vessels. The trial application on this biggest portion of the world merchant fleet is technically less demanding and could deliver valuable application experiences that might be utilized to develop the necessary improvement of the EEDI for the remaining ship types or alternative instruments without negative effects
<i>Strategic direction:</i>	7.3
<i>High-level action:</i>	7.3.1
<i>Planned output:</i>	7.3.1.1 and 7.3.1.3
<i>Action to be taken:</i>	Paragraph 14
<i>Related documents:</i>	GHG-WG 2/2/13, GHG-WG 2/2/22; MEPC 59/4/13 and MEPC 59/4/2

1 This document is submitted in accordance with the Committees' Guidelines (MSC-MEPC.1/Circ.2, paragraph 4.10.5) and provides comments on the report of the second intersessional meeting of the working group on greenhouse gas emissions contained in document MEPC 59/4/2.

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Background and introduction

2 European shipyards have developed the most energy-efficient ship designs in the world and support the implementation of ambitious rules to reduce greenhouse gas (GHG) emissions from ships. CESA believes that actions to address climate change need to be put in place without delay. Moreover, measures should be taken on both the existing fleet, as well as on future vessels so that immediate and sustained impact on CO₂ emissions can be generated.

3 The European shipbuilders continue to support the EEDI development as a useful instrument, which can serve the purpose of providing information and orientation regarding best practices in ship design and ship operation, identifying and honouring good performers among shipyards, equipment manufacturers and ship operators. CESA, however, reiterates that market-based instruments could be a more effective solution.

4 CESA members have conducted a series of trial applications, which resulted in clear evidence of substantial shortcomings of the current EEDI proposals. In view of these weaknesses of the EEDI as presently drafted, CESA warns that a mandatory EEDI as the only measure would: first, fail to deliver any short term results; second, lead to counterproductive results particularly for more complex and smaller ship types; third, cause – in the field of short sea shipping – a modal shift to less environmentally friendly transport modes.

No effect by 2020

5 The EEDI is not capable to deliver any short-term results as it would only be applicable to new ships. A period of substantial fleet renewal is currently under way. By 2012 more than half of the world fleet would be under five years of age. Therefore CESA expects comparatively weak requirement of fleet growth for the period until 2020. Taking the current business environment into account, CESA estimates that the percentage of new vessels in the world fleet between 2013 and 2020 will be between 3% and 5% per year. Assuming an entry into force of the EEDI by 2013, still 60-76% of the entire fleet in 2020 will be outside the EEDI scope.

Failure to address the large variety of ship types and safety requirements

6 The draft EEDI endeavours to assess various ship designs with one set of parameters. For some ship types such as tankers, bulkers and containerships with “traditional” machinery layout, EEDI requirements may be fulfilled by optimization resulting in a reduction of the power demand or speed reduction. However, for other ship types, this design option often contradicts the speed or other operational requirements of the vessel for viable short sea shipping connections.

7 The EEDI has also to take account of safety aspects. An unbalanced strategy of pure reduction of the installed propulsion and auxiliary power could induce negative effects on the manoeuvrability and stopping ability as well as the ability of a ship to safely return to port. A proposed CO₂ reduction schedule might lead to requirements that are incompatible with minimum power and redundancy demands by existing mandatory IMO safety regulations or by an enhanced safety policy of the owners.

Shift to less environmentally friendly transport modes

8 Based on a large number of EEDI simulations of existing ships, it has been established that very fuel-efficient designs, e.g., for ro-ro ships, could only comply with the EEDI by drastically reducing their speed. In fact, the current baseline definition will lead to a situation

where very inefficient designs do not experience incentives to become more energy efficient, whereas highly efficient designs are unable to pass the EEDI at the required design speed.

9 In this context it has to be considered that a certain minimum speed might be required in order to fulfil a requested transport task, especially in short sea shipping where ships are in direct competition with other transport modes. If shipping companies are not in the position to offer an attractive schedule they will lose their competitiveness to the benefit of other less environmentally friendly transport modes such as road transport.

A phase-in approach in the application of the EEDI

10 In order to balance the need to make progress in the development and implementation of maritime GHG reduction measures, CESA proposes to follow a structured phase-in approach in implementing the EEDI:

- .1 start a trial application of the index on large bulkers, tankers and container vessels of more than 20,000 mt dwt. Assessment of the EEDI with regard to these vessels has produced less concerning results. This group represents 85% of the total worldwide dwt capacity (ref. to MEPC 59/4/13);
- .2 continue with the development of indexes for vessels smaller than 20,000 mt dwt, which can be implemented at a later stage; and
- .3 continue with the development of indexes for the more complex ship types, which can be implemented at a later stage.

Implementation for complex ship types at a later stage

11 The European shipbuilders are committed to constructively contribute to the development of appropriate formulas for complex ship types. CESA shares the view that for the remaining minority portion of the world merchant fleet the draft EEDI needs conceptually different approaches. The following topics have to be addressed:

- .1 due to physically incorrect modelling of the speed power relation it is currently impossible to distinguish fast energy-efficient ships from slower badly designed vessels (refer to MEPC 59/4/2, paragraph 2.44.4). In order to encourage improvements of the fuel efficiency for all ship types and speed ranges, the EEDI must take into account that the propulsion power demand increases roughly at third power with the speed. Appropriate modifications to the EEDI or the baseline have already been proposed by INTERFERRY (GHG-WG 2/2/13) and CESA (GHG-WG 2/2/22); and
- .2 the discussion and decision of any EEDI or baseline modifications is hampered by significant inconsistencies of databases used for the verification. It is evidently not possible to ensure that the speed, power and capacity values used in the trial applications are matching. Therefore CESA supports the view that data recording might be necessary to achieve reliable and consistent as-build values for the EEDI parameters.

12 After successful modification of the EEDI and/or the related baseline definition and the generation of a robust and trustworthy data set for further calculations, CESA welcomes the successive application to passenger ships, ro-ro passenger ships, gas tankers, general cargo ships, and ro-ro cargo ships.

13 CESA also recommends separating ro-ro cargo ships from pure car/truck carriers, as well as passenger ships from high-speed craft due to their significantly different design concepts.

Action requested of the Committee

14 The Committee is invited to consider the views presented and take action as appropriate.
