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AIR POLLUTION AND ENERGY EFFICIENCY

More stringent and readily achievable EEDI requirements for 2020

Submitted by the Clean Shipping Coalition

SUMMARY

Executive summary: This document notes that the most effective approach with regard to the extended over-compliance of various ship types would be to strengthen 2020 EEDI requirements so that they reflect the level of efficiency improvements already achieved, incentivise the uptake of innovative technologies and drive efficiency beyond market forces. On the basis of the performance of the 10% most efficient recently built ships, the Clean Shipping Coalition believes that the starting point for the establishment of new 2020 EEDI requirements should be -32% below the reference line for bulk carriers, -33% below the reference line for tankers, -48% below the reference line for containerships and -44% below the reference line for general cargo ships. However, this target setting should be considered as a minimum and a starting point as it does not take into account the potential of new designs and innovative equipment

Strategic direction: 7.3

High-level action: 7.3.2

Output: 7.3.2.5

Action to be taken: Paragraph 13

Related documents: MEPC 69/5/5, MEPC 69/INF.9, MEPC 69/21, MEPC 70/5/15, MEPC 70/INF.32 and MEPC 70/INF.36

Introduction

1 This document is submitted in accordance with the provisions of paragraph 6.12.5 of the Committee's Guidelines and provides comments on documents MEPC 70/5/15 and MEPC 70/INF.36.

2 IMO's Marine Environment Protection Committee (MEPC) is conducting a review of the 2020 requirements of the Energy Efficiency Design Index (EEDI). MEPC 67 established a Correspondence Group on EEDI review and MEPC 69 instructed the group to continue its work. In the current regulation, a ship built after 1 January 2020 needs to have an EEDI that is 20% below the reference line value for that ship.

Over-compliance of phase 2 requirements

3 In document MEPC 70/5/15 (Report of the Correspondence Group on EEDI review required under regulation 21.6 of MARPOL Annex VI), Japan invites the Committee to concur with its recommendation that the phase 2 EEDI requirements set out in regulation 21 of MARPOL Annex VI should be retained except for ro-ro cargo, ro-ro passenger ships and containerships. In parallel, it invites the Committee to consider whether the time period should be retained including possible adjustments to them for relevant ship types except for ro-ro ships.

4 The Clean Shipping Coalition does not think that the evidence contained in the report supports that conclusion, i.e. that phase 2 requirements should be retained for bulk carriers, tankers and general cargo ships. Indeed, analysis included in documents MEPC 70/INF.36 and MEPC 70/INF.32 clearly indicates that EEDI requirements can be strengthened with regard to more ship types than containerships without placing an unreasonable burden on ship designers/builders and owners, and that it would be appropriate to do so.

5 Furthermore, over-compliance of phase 2 requirements in more ship types than containerships has been emphasised by many members of the correspondence group. In this regard, the Clean Shipping Coalition concurs with comments submitted by the United States, the Netherlands, Norway, Spain and the European Commission. Additionally, Germany supported the proposal that an adaptation of reference lines, which concerns more ship types than containerships alone, should be further examined. All these comments suggest that there is already widespread scepticism with regard to the effectiveness of the current level of phase 2 requirements in driving efficiency improvements.

6 Additionally, one of the main conclusions of the study contained in document MEPC 70/INF.36 is that phase 2 requirements as they currently stand are a step back from what was readily achievable for bulk carriers, tankers, containerships and general cargo ships that entered the fleet in 2014 and 2015. This analysis shows that of the 936 bulk carriers that entered the fleet in 2014 and 2015 and for which an estimated EEDI could be calculated, 30% had an estimated EEDI at least 25% below the reference line, 20% an estimated EEDI at least 28% below the reference line and 10% an estimated EEDI 32% or more below the reference line. With regard to 287 tankers that entered the fleet in 2014 and 2015 and for which an estimated EEDI could be calculated, 30% had an estimated EEDI at least 26% below the reference line, 20% an estimated EEDI at least 31% below the reference line, and 10% an estimated EEDI 33% or more below the reference line. Additionally, with regard to the 289 containerships that entered the fleet in 2014 and 2015 and for which an estimated EEDI could be calculated, 30% had an estimated EEDI at least 39% below the reference line, 20% an estimated EEDI at least 42% below the reference line, and 10% an estimated EEDI 48% or more below the reference line. Finally, with regard to the 127 general cargo ships that entered

the fleet in 2014 and 2015 and for which an estimated EEDI could be calculated, 30% had an estimated EEDI at least 37% below the reference line, 20% an estimated EEDI at least 40% below the reference line, and 10% an estimated EEDI 44% or more below the reference line.

7 Furthermore, as pointed out in the interim report of the correspondence group (MEPC 69/5/5) as well as in previous analysis (MEPC 69/INF.29), innovative technologies played no part in improving EEDI scores, while other previous analysis (MEPC 69/5/9) contradicted the general assumption that reduced design speed has been used for EEDI compliance. In fact, speed reduction has contributed in some cases, but there are many ship types and size categories for which the average design speed had not decreased or had even increased while the design efficiency improved (MEPC 69/INF.29).

8 In this regard, an adjustment of the current time period, i.e. an early introduction of phase 3 requirements in 2022, has been put forward as an alternative to strengthened EEDI requirements for 2020, and supported by many members of the correspondence group. Although such a proposal is interesting, the Clean Shipping Coalition believes that there is solid evidence to justify and enough time available to introduce strengthened phase 2 requirements in 2020. CSC also believes that the simplest and most effective approach with regard to the extended over-compliance of various ship types would be to set phase 2 requirements that reflect the level of efficiency improvements already achieved and a reasonable assessment of what is possible in the future. This would incentivise the uptake of innovative technologies and drive efficiency beyond market forces.

More stringent and readily achievable phase 2 requirements

9 The study contained in document MEPC 70/INF.36, which was carried out by CE Delft for CSC members "Seas at Risk and Transport & Environment", analysed which EEDI requirements for phase 2 (2020 to 2024) are readily achievable for bulk carriers, tankers, general cargo ships and containerships. Because the CE Delft report judges that the EEDI database that the IMO Secretariat maintains contains less than half of the ships that have an EEDI, the basis for the analysis is not the EEDI database but the *estimated* EEDI of all ships that have entered the fleet in 2014 and 2015. The EEDI was estimated on the basis of the Estimated Index Value (EIV), which was used by the IMO to calculate the reference lines, and the empirical relation between the EEDI and the EIV of ships for which both values are known. In order to analyse the relation between the EIV and the EEDI, EEDI values for different ships have been collected under the study and the EIV for each of these ships has been calculated. In total, 280 ships have been matched. The study found that the EIV overestimates the EEDI by approximately 10%. A strong correlation between EIV and EEDI values has also been confirmed by the findings of the analysis contained in documents MEPC 70/INF.32 and MEPC 70/5/14.

10 The study carried out by CE Delft points out that there are several ways to set an efficiency target. One of them is to set the target on the basis of the efficiency of the most efficient ships in the current fleet. This target setting is inspired by the Japanese Top Runner Program, which sets targets for appliances and transport equipment based on the energy efficiency of the best-in-class in the current market in a certain year. The main difference between the Top Runner Program and the readily achievable targets in the study is that the Top Runner Program also takes into account the potential technical improvement over the current state of the art. For the purpose of the study, the targets are based on the existing reference lines. A target is deemed to be readily achievable if it is achieved or exceeded by the 10%, 20% or 30% best performing ships that have entered the fleet in 2014 and 2015.

11 On the basis of the findings of the analysis, and in particular the performance of the 10% most efficient recently built ships, the Clean Shipping Coalition believes that the starting point for the establishment of new EEDI requirements for 2020 should be 32% below the reference line for bulk carriers, 33% below the reference line for tankers, 48% below the reference line for containerships and 44% below the reference line for general cargo ships. These target values should be considered as a minimum and a starting point as they do not take into account the potential of new designs and innovative equipment. In order to arrive at a final EEDI requirement for each ship type it will also be necessary to take a view on the efficiency improvements that are likely to be possible up to 2020 and that are not reflected in current designs.

| Ship type | Reduction rate | Time period |
|---------------------|----------------|-------------|
| Bulk carriers | ≥-32% | 2020 |
| Tankers | ≥-33% | 2020 |
| Containerships | ≥-48% | 2020 |
| General cargo ships | ≥-44% | 2020 |

12 Furthermore, analysis contained in document MEPC 70/INF.32 submitted by the Netherlands supports the idea that the current EEDI phase 2 and phase 3 requirements could be revisited. It offers a perspective on the further reduction of the EEDI by showing the list of power saving options and concludes that the application of power saving measures to three sets of representative vessels – containerships, bulk carriers and general cargo ships – can lead to power requirements well below current levels.

Action requested of the Committee

13 The Committee is invited to note the information contained in this document, to consider the use of these readily achievable target values as the starting point for the review of the 2020 EEDI requirements and to take action as appropriate.