

MARINE ENVIRONMENT PROTECTION
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AIR POLLUTION PREVENTION

Comments on documents MEPC 75/5/4 and MEPC 75/5/5

Submitted by ICS

SUMMARY

Executive summary: This document comments on documents MEPC 75/5/4 and MEPC 75/5/5 and recommends to the Committee that a proposed prohibition on the use of low sulphur fuel oils not be supported. Such a prohibition cannot be supported based on available data or analysis. It is recommended that the Committee should instead support the ongoing work of the PPR Sub-Committee and in addition request that ISO consider the aromatic content of marine fuel oils and Estimated Cetane Number (ECN) of marine fuel oils when reviewing the international standard for such fuels, ISO 8217.

*Strategic direction,
if applicable:* 3

Output: 3.3

Action to be taken: Paragraph 17

Related documents: MEPC 75/5/4, MEPC 75/5/5; PPR 7/8, PPR 7/8/1, PPR 7/8/2, PPR 7/8/3; PPR 5/7/2 and PPR 5/7/INF.13

Introduction

1 This document is submitted in accordance with the provisions of paragraph 6.12.5 of the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.1), and provides comments on documents MEPC 75/5/4 (FOEI et al.) and MEPC 75/5/5 (FOEI et al.).

2 ICS fully supports the work of the Organization to address the impact on the Arctic of Black Carbon emissions from international shipping, and to develop appropriate control measures.

3 ICS notes that document MEPC 75/5/4 largely duplicates document PPR 7/8/2, and document MEPC 75/5/5 largely duplicates document PPR 7/8/3. It is unclear why it is considered necessary to ask one of the Organization's specialist technical Sub-Committees to consider the matters raised, and also to ask for them to be considered by the Committee before they have been considered at PPR 7. Therefore, ICS trusts that the outcome of PPR on this issue will be given due regard by the Committee when considering this submission.

4 Document MEPC 75/5/4 calls for a switch to distillates for ships operating in the Arctic, and document MEPC 75/5/5 calls for a stop of the use of blended low sulphur fuels, based on information provided in document PPR 7/8. ICS welcomes the work of Finland and Germany presented in document PPR 7/8 and agrees with their suggestion that "the International Organization for Standardization review ISO 8217 to include specifications taking into account these results" with a view to addressing the aromatic content of marine fuels (PPR 7/8, paragraph 23). ICS further concurs with the recommendation of EUROMOT in document PPR 7/8/1 that ISO also consider Estimated Cetane Number (ECN) in this review. However, ICS would also note that fuel composition is only one of many factors and it cannot be assumed that emissions of Black Carbon are primarily a function of fuel aromatic content or ECN.

5 ICS would note that document PPR 7/8 appears to assume that 75% load of the 4 stroke medium speed common rail engine is universally applicable to all residual based 0.50% max sulphur fuels as used by any engine type including 2 stroke low speed engines in which the greater proportion of marine fuel oil is used. This is at best a highly contentious assumption which ICS cannot agree with.

6 ICS considers that the research provided in document PPR 7/8 does not support the actions suggested in documents MEPC 75/5/4 and MEPC 75/5/5 that there is an urgent need for a switch to distillate fuels by ships operating in the Arctic or a prohibition on the use of blended low sulphur fuel oils. ICS would recommend to the Committee that it supports the work of the PPR Sub-Committee to develop appropriate control measures for emissions of Black Carbon and that the conclusions of documents PPR 7/8 and PPR 7/8/1 should be supported as useful contributions to addressing such emissions.

Discussion

7 Paragraph 6 of document PPR 7/8 infers that the properties of pre 2020 HFO can be represented by a single fuel oil sample of 50% aromatic content with no indication of why this might be the case. ICS considers this assumption to be at best questionable.

8 ICS agrees with the premise that aromatic material can result in poorer ignition performance, this is widely understood and has been acknowledged for many years, hence the importance of Cetane Number/CCAI/ECN etc. when considering fuel quality. However, it must also be understood that emissions of Black Carbon are influenced by, inter alia, engine design and load and it cannot be inferred that Black Carbon emissions are determined simply by considering appropriate requirements for aromaticity and ECN in the ISO 8217 fuel standard.

9 It should be noted that some middle distillate fuels can have a high aromatic content. Therefore, if the Committee is concerned that high aromatic fuels will increase emissions of Black Carbon it cannot be assumed that a switch to distillates would be appropriate. This is consistent with the results of earlier measurement campaigns (for example, see documents PPR 5/7/2 and PPR 5/7/INF.13).

10 Document MEPC 75/5/4 claims that "as a result of the use of blended/hybrid low sulphur marine fuels, a dramatic increase can be expected in Black Carbon emissions from international shipping in 2020; a development that totally cuts across the urgent need, first recognized by IMO in 2011, to significantly cut Black Carbon emissions from shipping". The document does not however provide any analysis of the composition of low sulphur blended/hybrid fuel oils. Preliminary experience is that these low sulphur fuel oils are highly variable in terms of composition and characteristics. These low sulphur fuel oils have been an essential part of the industry's switch to low sulphur fuels as required by MARPOL Annex VI, regulation 14.1, which limits the sulphur content of marine fuels oils to 0.50% when not in an ECA. Suggesting a prohibition of such fuels, as in document MEPC 75/5/5, which is not supported by any analysis of their composition, risks unhinging the supply of compliant marine fuel oil with serious potential consequences for trade.

11 Notwithstanding that emissions of Black Carbon are sensitive to the aromatic content of marine fuel oil, they are also sensitive to a wide range of other influencing factors including, inter alia, engine design, engine operating cycle, engine load and wider properties of the fuel oil. In this context it is interesting to note that figure 1 of document PPR 7/8 shows that all of the tested fuels resulted in similar levels of Black Carbon being emitted at maximum engine load.

12 From the above it can be concluded that there has been no analysis of fuel oil composition to support mandating a switch to distillates, that the evidence does not support any assumption that Black Carbon emissions are lower for distillates than for other fuel grades, that Black Carbon emissions are influenced by a wide range of factors including engine load and that the composition of blended/hybrid low sulphur marine fuels is variable. Therefore, there is no basis to support a mandatory switch to distillates by ships in the Arctic in order to reduce emissions of Black Carbon.

13 Document PPR 7/8/1 concludes that Black Carbon emissions are sensitive to the ignition and combustion characteristics of marine fuels and recommends that aromatic content and the ECN of marine fuels be considered by ISO. ICS concurs that these factors influence emissions of Black Carbon and supports the recommendation that they should be considered by ISO in the next revision of ISO 8217. However, ICS would reiterate that Black Carbon emissions are influenced by a large number of factors and that aromatic content and ECN are two of many potential causal factors.

14 Currently, the only available marine fuel which can be said to reduce emissions of Black Carbon to a very low level regardless of other influencing factors is natural gas, generally carried on board as Liquefied Natural Gas (LNG).

Proposal

15 The PPR Sub-Committee is already progressing work on this important matter. The Committee should call on Member States and international organizations to support the work of the Sub-Committee.

16 The recommendations provided in documents PPR 7/8 and PPR 7/8/1 to request that ISO consider aromatic content and ECN in its next review of ISO 8217 should be supported, however, ICS notes that the matter will already have been considered at PPR 7 prior to this session of the Committee.

Action requested of the Committee

17 The Committee is invited to note the comments provided in paragraphs 7 to 14 and the proposals in paragraphs 15 and 16 of the document and take action as appropriate.