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ANY OTHER BUSINESS

Comments on documents MEPC 78/14/1 and PPR 10/10/1, and a possible definition of "polar oil fuels"

Submitted by Norway

SUMMARY

Executive summary: This document comments on documents MEPC 78/14/1 and PPR 10/10/1, and provides a possible definition of "polar oil fuels" that are acceptable for use and carriage for use as fuel in Arctic waters.

Strategic direction, if applicable: 7

Output: 7.11

Action to be taken: Paragraph 12

Related documents: PPR 6/WP.6; resolution MEPC.329(76); MEPC 78/14/1; PPR 10/10/1; MEPC 80/17; MEPC 82/5/2 and PPR 12/6

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* and comments on documents MEPC 78/14/1 (Iceland and Norway) and PPR 10/10/1 (Norway). It provides information to support the proposals in documents MEPC 78/14/1 and PPR 10/10/1, including information on the International Oil Pollution Compensation (IOPC) Fund's definition of persistent and non-persistent oils and a comparison of spills of distillate fuels and residual fuels. The document further provides a possible definition of "polar oil fuels" that could be used to amend regulation 43A of MARPOL Annex I.

Background

2 The prohibition on the use and carriage of heavy fuel oil (HFO) for use as fuel in Arctic waters in regulation 43A of MARPOL Annex I came into effect on 1 July 2024. The intention of this prohibition is to protect the sensitive Arctic marine environment from the environmental damage caused by potential spills of heavy fuel oil. During the development of the regulation, discussions concerning the characterization and definition of the prohibited oils were limited. The origin for the definition of prohibited oils in regulation 43A of MARPOL Annex I comes

from regulation 21.2 in MAPROL Annex I, where it was used for phasing out single-hull oil tankers. It was not developed based on consideration of the cold-water conditions and the remoteness of the polar regions. During discussions at PPR 6 in the Working Group HFO in Arctic waters and on Review of the IBTS many delegates expressed the view that the definition of HFO agreed upon at the session might need to be amended in light of the 2020 fuel oil sulphur limit. In this connection, the Working Group agreed that submissions could be made to the Sub-Committee at a future session on further refinement of the definition (PPR 6/WP.6, paragraph 8).

3 Today, more information on the new low-sulphur fuel oils (LSFO) that are on the market is available, including their persistence in the marine environment and the significant challenges for oil spill response and clean-up operations these new residual oils represent, particularly if discharged in Arctic waters.¹ As shown in the project *New low-sulphur fuels – fate and behaviours in cold water conditions*, described in documents MEPC 78/14/1 and PPR 10/10/1, many of the new low-sulphur fuel oils on the market are not prohibited for use and carriage as fuel according to the definition in regulation 43.1.2 of MARPOL Annex I. For this reason, document MEPC 78/14/1 proposed to expand the scope of the existing output 7.11 on *Development of measures to reduce the risk of use and carriage of heavy fuel oil (HFO) as fuel by ships in Arctic waters* in order to amend the definition of the oils that are prohibited by regulation 43A of MARPOL Annex I. The document proposed to amend the definition by including an upper pour point limit. Document PPR 10/10/1 proposed that an alternative to defining oils that are prohibited for use or carriage for use as fuel in Arctic waters could be to define "polar oil fuels" that are permitted.

4 At PPR 10, having noted that there was no general consensus to move forward with the proposals in documents MEPC 78/14/1 and PPR 10/10/1, the Sub-Committee agreed to revisit the matter at PPR 12. To facilitate discussions at PPR 12 and as a response to the invitation from MEPC 82 to submit proposals regarding the concept of "polar fuels" to PPR 12, this document provides further information and provides a possible definition for "polar oil fuels" to be considered in conjunction with the proposals in documents MEPC 78/14/1 and PPR 10/10/1, and the concept of "polar fuels".

The environmental damage from spills of persistent residual fuels vs non-persistent distillate fuels

5 When considering the fate of spilled oil at sea, a distinction is often made between persistent and non-persistent oils. Persistent oils break down and dissipate slowly in the marine environment, usually requiring a cleanup operation. In contrast, non-persistent oils dissipate rapidly through evaporation and dilution, rarely necessitating an active response. Compensation for pollution damage caused by spills from oil tankers, both from cargo and/or bunker oil, is governed by the CLC/Fund Convention and Supplementary Fund Protocol. This compensation regime makes a distinction between persistent and non-persistent oils as further explained in the IOPC Funds Guide to Persistent and Contributing Oils.² With respect to the status of LSFOs in terms of their persistency characteristics, a study of LSFO properties concluded that the products tested in the project showed a high degree of persistence on the sea surface.

6 The composition like density, viscosity, pour point and volatility affects the behaviour and fate of spilled oil at sea. New residual marine low-sulphur fuel oils, like VLSFO and ULSFO, have physico-chemical properties that contribute to their persistence in the marine environment when accidentally discharged. In general, evaporation will be low due to an

¹ [A film illustrating the challenges with the LSFOs can be found here.](#)

² [Guide to Persistent and Contributing Oils.](#)

initially low content of volatile compounds. They also have a tendency to form thick oil slicks and/or lumps which further impedes evaporation, preventing the oil from breaking down and dispersing in the marine environment. Thick oil slicks and solid lumps make the oil less accessible to microorganisms due to a reduced surface area, further slowing down the biodegradation process. Additionally, the complex hydrocarbons in residual fuel oils resist microbial breakdown and photodegradation. Residual fuel oils can also absorb large amounts of water, up to 70% to 80%, which significantly increases their volume. This water uptake stabilizes the oil, causing it to persist longer on the water surface. However, residual fuel oils can also submerge and sink due to increased density from weathering and the adsorption of inorganic material in the sea. The harsh Arctic environment, characterized by low temperatures, ice cover and reduced sunlight hinders the natural degradation processes of spilled fuel and intensifies the oil's persistence.

7 In contrast, distillate marine fuels are considered non-persistent, as they will more quickly evaporate, dilute and disperse in the marine environment and break down through microbial or photodegradation. As a result, spills of distillate fuels do not lead to the same long-term environmental damage as spills of persistent residual fuels.

8 As residual oils that persist in the environment for a long time will still be allowed for use and carriage as fuel in the Arctic, Norway does not believe that the current definition of prohibited fuel oils in regulation 43.1.2 of MARPOL Annex I, will achieve its intended objective to protect Arctic waters and marine environments from damage and is of the view that it should only be allowed to use non-persistent oils.

A possible definition of "polar oil fuels"

9 MARPOL Annex I regulation 43A refers to regulation 43.1.2 for the definitions of oils that are prohibited to be used and carried as fuel in Arctic Waters, which defines the oils that are prohibited as "*oils, other than crude oils, having a density at 15°C higher than 900 kg/m³ or a kinematic viscosity at 50°C higher than 180 mm²/s*". As many residual low-sulphur fuel oils have densities and kinematic viscosities that enable their continued use, Norway suggests amending regulation 43A, and to define "polar oil fuels" that are permitted in Arctic waters.

10 In order to facilitate discussions at PPR 12, this document provides a possible definition of "polar oil fuels". The proposed definition allows for the use of "gas fuels", as defined in regulation 2.1.33 of MARPOL Annex VI (resolution MEPC.385(81)), and oils that meet the viscosity, density and pour point requirements of the distillate and bio-distillate marine fuels defined as Category ISO-F-DMA and DMZ in ISO 8217-24. It also illustrates how regulation 43A of MARPOL Annex I can be amended to prohibit the use and carriage of oils as fuel that do not meet the requirements of polar oil fuels. As regulation 43A only prohibits the use of "oils", as defined in regulation 1.1 of MARPOL Annex I, that do not meet the requirement of polar oil fuels, fuels that are not derived from petroleum will still be permitted.

11 The approach described in this document will ensure a holistic approach to fuels that are acceptable for use in Arctic waters, taking also into account reduction in emissions of Black Carbon, and will lead to an improved protection of the fragile Arctic environment. The proposal for amendments to regulation 43A of MARPOL Annex I and the proposed definition of polar oil fuels can be found in the annex to this document.

Action requested of the Sub-Committee

12 The Sub-Committee is invited to consider the proposal in paragraphs 9 to 11 and take action as appropriate.

ANNEX

POSSIBLE AMENDMENTS TO MARPOL ANNEX I

Regulation 1 – Definitions

Polar oil fuels means:

- .1 gas fuels, as defined in regulation 2.1.33 of Annex VI of the present Convention; or
- .2 oils with a density at 15°C lower or equal to 890.0 kg/m³ and a kinematic viscosity at 40°C lower or equal to 6.000 mm²/s; and a pour point lower or equal to 0°C.

Regulation 43A – Special requirements for the use and carriage of oils as fuel in Arctic waters

1 With the exception of ships engaged in securing the safety of ships or in search and rescue operations, and ships dedicated to oil spill preparedness and response, the use and carriage of oils ~~listed in regulation 43.1.2 of this Annex~~ that do not meet the requirements of polar oil fuels as defined in regulation 1.x, as fuel by ships shall be prohibited in Arctic waters, as defined in regulation 46.2 of this Annex, on or after 1 July 2024.

[...]
