

SUB-COMMITTEE ON CARRIAGE OF  
CARGOES AND CONTAINERS  
7th session  
Agenda item 3

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**AMENDMENTS TO THE IGF CODE AND DEVELOPMENT OF  
GUIDELINES FOR LOW-FLASHPOINT FUELS**

**On the need to prioritize the development of safety provisions  
for alternative fuels and innovative energy converters**

**Submitted by CESA**

**SUMMARY**

*Executive summary:* This document comments on the Correspondence Group report with regard to the work plan and the prioritization of outputs for the development of safety provisions for alternative fuels and innovative energy converters in order to meet GHG and other emission targets of the Organization in time

*Strategic direction, if applicable:* 2

*Output:* 2.3

*Action to be taken:* Paragraph 16

*Related documents:* CCC 7/3/Rev.1, CCC 7/12, CCC 7/12/2; MSC 102/12; CCC 6/14; BLG 17/8/6 and BLG 16/6

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.2)* and comments on the revised report of the Correspondence Group (CG) on the Development of Technical Provisions for the Safety of Ships using Low-flashpoint Fuels (CCC 7/3/Rev.1).

**Background**

2 At its sixth session the Sub-Committee endorsed a new work plan for the next phase of the development of the IGF Code. The Sub-Committee also endorsed the change of status of the existing output on "Amendments to the IGF Code and development of guidelines for low-flashpoint fuels to be "continuous" to avoid constant extensions of target completion dates.

3 Due to COVID-19 induced time constraints MSC 102 was not in the position to consider the CCC work plan in substance. The Committee, however, noted the view that the work on low-flashpoint fuels should be accelerated and prioritized through the provision of additional resources, taking into account the existing regulatory framework established by the IGF Code and the urgent need to rapidly develop safety provisions for alternative fuels to further the decarbonization of shipping.

4 CESA supports the new work plan to be pursued as a continuous output and highlights the need to accelerate the development of safety provisions for alternative fuels in order to meet ambitious emission targets as soon as necessary. Regardless of the resources made available it is necessary to carefully consider the state of play of ongoing regulatory projects and the potential of new candidate fuels in order to decide on the appropriate prioritization.

### **Status of rule development for alternative fuels and innovative energy converters**

5 Alternative fuels and innovative energy converters (e.g. fuel cells) offer by far the largest potential for GHG emission reduction. Only with zero-carbon or climate-neutral fuels and suitable high efficiency energy converters will the reduction to net-zero GHG emissions be possible. Since many of the candidates are low-flashpoint fuels or fuels with other safety hazards than fire and explosion, adequate safety requirements are of utmost importance.

6 While technology for alternative fuels and relevant energy converters is maturing rapidly and the fuels becoming more widely available, the related rule development is too slow to ensure that the wide portfolio of new fuels and technologies can be utilized onboard early enough to successfully implement the ambitious goals of the IMO GHG Strategy.

7 Currently the CCC Sub-Committee appears to be a significant bottleneck for the rapid greening of shipping:

- .1 the development of mandatory regulations for gas-fuelled ships (IGF Code) took more than 10 years and still provides prescriptive requirements for LNG and CNG only;
- .2 the development of *Interim guidelines for the safety of ships using methyl/ethyl alcohol as fuel* lasted from CCC 1 to CCC 6;
- .3 the development of IGF Code provisions for the safety of ships using low-flashpoint oil fuels had already been proposed in 2012 (ref. BLG 17/8/6 by CESA) and had just started recently at CCC 6; and
- .4 the development of Guidelines for fuel cell installations progressed extremely slowly since 2011 (BLG 16/6); however, the additional effort of a two-phase Correspondence Group and an informal technical exchange by means of an intersessional videoconference has now yielded a mature draft Interim Guidelines.

8 Based on this experience, the proposed new work plan – promising to finalize mandatory fuel cell provisions as well as IGF Code amendments/interim guidelines for three fuels within just five years – seems to be highly ambitious and requires a significant increase in development efficiency and allocation of additional resources in order to be fulfilled. In addition, it should be noted that with hydrogen and ammonia more alternative fuels have already been earmarked for possible inclusion into the work plan.

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## Comments on the Correspondence Group report

9 CESA appreciates the good progress achieved within the extended CG and confirms that the Group has successfully resolved substantial open issues that have hampered consensus building for a long time. The revived spirit of cooperation should be utilized in the upcoming Sub-Committee meeting with a view to finalizing remaining editorial issues as a matter of urgency in the Working Group.

10 Finalization of the fuel cell Interim Guidelines at CCC 7 is both possible and necessary. This item should be incorporated in the terms of reference as matter of highest priority, not to be compromised by other ongoing items included for finalization or further development.

11 In this context it should be noted that currently more fuel cell trial applications in commercially used ships are under construction widening the power range and scope of application of fuel cells to larger and complex ship types, such as passenger cruise ships. Although research and development aiming at the implementation of novel features is theoretically facilitated by potential exemptions in accordance with SOLAS chapter I regulation 4(b), feedback from CESA members revealed that the absence of approved Interim Guidelines seriously hampers the certification of new buildings utilizing fuel cells for power generation.

12 Low-flashpoint oil fuels are widely available, have well known properties and have arrived at this Organization with a successful application history in inland waterway shipping. This favorable starting point simplifies rule development and could incentivize and accelerate fuel cell utilization with a high energy density and moderate hazard profile. CESA welcomes that finalization and implementation of safety regulations for these fuels are foreseen by means of Amendments to the IGF Code in a one-step process.

13 Although the draft fuel cell Interim Guidelines adequately cover the safety of the fuel cell installation itself the hydrogen bunkering, storage on-board and distribution within the ship are not yet regulated. This narrow scope limits application of fuel cell to installations using primary fuels supplied via a reformer. In order to utilize the full potential of fuel cells, safety provisions for fuel tanks and piping as well as their location and routing also need to be developed at the earliest opportunity. Recently published concept designs indicate that compressed or liquified hydrogen storage are feasible fuelling options for ships operating internationally on shorter sea routes.

14 Therefore, CESA considers action item .7 to update the work plan for the development of new low-flashpoint under the IGF Code (paragraph 41 of the CG report) to be a highly important task for the Working Group that has to be performed with due consideration of the technical potential, the draft provisions already developed and the CCC resources made available for alternative fuels and innovative energy converters.

15 Additional fuels should not be introduced into the work plan before adequate resources and working arrangement have been allocated and should not postpone the finalization of amendments to the IGF Code.

## Action requested of the Sub-Committee

16 The Sub-Committee is invited to consider the assessment and proposals provided in paragraphs 14 and 15 and take action as appropriate.