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REDUCTION OF GHG EMISSIONS FROM SHIPS

Establishment of an International Maritime Research and Development Board and an IMO Maritime Research Fund

Submitted by Japan, Liberia, Nigeria, Palau, Singapore, Switzerland, ICS, BIMCO,
INTERTANKO, CLIA, INTERCARGO, IPTA, IMCA, INTERFERRY and WSC

SUMMARY

Executive summary: MEPC 77 will continue consideration of the comprehensive proposal set out in document MEPC 76/7/7 to establish the IMRB and IMRF. In this document, the co-sponsors comment on issues raised at MEPC 76 and emphasize the vital importance of MEPC 77 approving the proposed amendments to MARPOL Annex VI, if the Organization is to successfully deliver the current level of ambition for 2050 and maintain its leadership for the decarbonization of international shipping.

*Strategic direction,
if applicable:* 3

Output: 3.2

Action to be taken: Paragraph 26

Related documents: Resolution.328(76); resolution MEPC.304(72); MEPC 77/7/1; MEPC 76/15, MEPC 76/7/7, MEPC 76/7/8, MEPC 76/7/11, MEPC 76/7/39, MEPC 76/17; MEPC 75/18, MEPC 75/7/4, MEPC 75/INF.5; ISWG-GHG 5/4/4 and MEPC 71/7/4

Introduction

1 Consideration of the revised and comprehensive proposal for establishing an International Maritime Research and Development Board (IMRB) and an IMO Maritime Research Fund (IMRF), as set out in document MEPC 76/7/7 (Denmark et al.), will resume at MEPC 77 (MEPC 76/15, paragraph 7.72).

2 The co-sponsors emphasize that the proposed amendments to MARPOL Annex VI to catalyze and accelerate applied R&D of zero-carbon technologies and fuels must be approved at MEPC 77. Given the typical 25-years life of new ships, it is vital to ensure that zero-carbon

ships can be delivered in large numbers from 2030 onwards so that the current level of ambition for 2050 in the Initial IMO Strategy can realistically be achieved, and that the Organization demonstrates continuing leadership for decarbonization of international shipping in the face of unilateral initiatives by other bodies.

3 The co-sponsors are of the view that the proposal set out in document MEPC 76/7/7 is mature, complete and ready for approval. Nevertheless, the proposal, including the draft MEPC guidelines and the draft Charter for the Establishment and Governance of the IMRB, may require further fine-tuning to address issues raised by Member States. Any such refinements can be finalized when the proposal is adopted at MEPC 78. The co-sponsors would encourage submissions that may suggest such fine-tuning.

4 However, given that MEPC 77 will immediately follow COP 26, and the attention of the world will be focused on progress being made by the Organization, it will be of the utmost importance, through approval of the MARPOL Annex VI amendments at this session, for the Committee to demonstrate that achievement of the 2050 level ambition and successful implementation of the Initial IMO Strategy is both politically and technologically plausible.

Issues raised during MEPC 76

5 During MEPC 76, many Member States spoke in support of the IMRB/IMRF proposal, but other Member States raised issues including (in their opinion):

- .1 given the amount of research and development (R&D) currently deployed for shipping's decarbonization, the IMRB may not be needed;
- .2 the proposed IMRB is designed only to support R&D but not deployment or uptake of alternative fuels, and corresponding investments required in fuel production, port and bunkering infrastructure;
- .3 the IMRB proposal does not include an appropriate mechanism to ensure equitable access to the required technology, fuels and ship designs;
- .4 the IMRB proposal is not ambitious enough and its development would distract from the development of other measures and so should be considered as part of mid- and long-term measures;
- .5 setting up the IMRB through amendments to the MARPOL Convention would present significant legal challenges;
- .6 voluntary contributions to an R&D trust fund should be further explored;
- .7 the proposed \$2 R&D contribution would have a severe negative impact on developing countries; and
- .8 the IMRB must have balanced geographic representation.

6 In response to the comments made at MEPC 76 challenging the IMRB proposal, the co-sponsors provide the following additional comments.

Given the amount of R&D currently deployed in shipping's decarbonization, the IMRB may not be needed

7 The R&D currently being conducted by governments, classification societies, energy companies, engine manufacturers and larger individual shipping companies is mostly on a piecemeal and uncoordinated basis. Much of this R&D activity is dedicated to making ships use fossil fuels more efficiently, rather than development of zero-carbon technologies. The funds currently being invested in R&D for zero-carbon technologies are still very limited when considering the magnitude and complexity of the challenges. Most importantly, these funds are presently inadequate to increase Technology Readiness Levels (TRLs) to the dramatic extent that will be required to allow thousands of zero-carbon ships to be delivered from 2030, as opposed to just a handful of prototypes.

8 The low level of current R&D investment in shipping has been identified by the International Energy Agency (IEA) which has noted* that corporate investment in R&D for shipping has declined and reached only \$1.6 billion in 2019 (only a small proportion of which is dedicated to R&D of zero-carbon technologies that can be applied on board ships). In document MEPC 75/INF.5 (ICS et al.), the industry co-sponsors have determined that approximately \$5 billion of guaranteed funding will be required to meaningfully accelerate R&D to catalyze the necessary increase in TRLs within the timeline set by the Initial IMO Strategy. The European Commission (EC) has signalled an intention to fund additional R&D in the European maritime sector, potentially using some of the income raised from the proposed extension of the EU emissions trading system to international shipping. But this is only a fraction of the amount that would be available via the IMRF for the benefit of all international shipping globally – including shipping in developing countries – and only a proportion of this EC funding will be directed to the specific challenges of making zero-carbon technologies practicable for use by ships, as opposed to supporting GHG reduction efforts in the rest of the maritime supply chain.

9 Arguments to the effect that current levels of R&D funding are somehow adequate may lack an appreciation of the magnitude and complexity of the challenges of increasing TRLs with respect to zero-carbon fuels and technologies which can safely be used on board ocean-going ships, as set out in detail by the industry co-sponsors in document MEPC 77/7/1 (ICS et al.). This comprehensive analysis identifies 120 distinct challenges for increasing TRLs and more than 260 separate R&D projects which will need to be conducted urgently. These facts obviously indicate that without the IMRF, TRLs would not be increased enough to achieve the levels of ambition agreed by the Organization within the short time frame available.

IMRB is designed only to support R&D but not the deployment or uptake of alternative fuels and corresponding investments required in fuel production, port and bunkering infrastructure

10 This is deliberate because the R&D projects which will be commissioned, coordinated and administered by the IMRB are only intended to catalyze and accelerate an increase in TRLs, leading to the development, inter alia, of functioning prototypes, including fuel storage and delivery systems, and the identification of the pathways for the decarbonization of international shipping. This is consistent with the IMRB being referred to in the Initial IMO Strategy as a short-term measure. Measures to expedite the deployment of alternative fuels and investments required in fuel production, port and bunkering infrastructure need to be considered by the Committee but in the context of mid- and long-term measures, while the

* IEA (2020) *Global corporate R&D spending of selected sectors, 2007-2019*. <https://www.iea.org/data-and-statistics/charts/global-corporate-r-and-d-spending-of-selected-sectors-2007-2019-2> (15 July 2021).

commercial development of relevant technologies, fuels, and related infrastructure are the responsibility of other stakeholders rather than shipowners.

11 Although the principal purpose of the IMRF is to accelerate R&D, the proposed draft regulatory text set out in annex 1 of document MEPC 76/7/7 contains provisions to enable the IMRF to provide supplementary support through technical cooperation activities and to provide funds to the GHG TC-Trust Fund to assist maritime GHG reduction efforts of developing countries, in particular LDCs and SIDS.

The IMRB proposal does not include an appropriate mechanism to ensure equitable access to the required technology, fuels and ship designs

12 The co-sponsors reiterate that the underlying purpose of the IMRB is to ensure that the world economy, including LDCs and SIDS, and nations remote from their markets, will continue to have access to efficient and economically sustainable maritime transport. The draft Charter for the Establishment and Governance of the IMRB clearly states as one of its objectives that "...the IMRB shall work to disseminate knowledge gained from funded [R&D] projects to assist global efforts to decarbonize shipping and help support the transition from fossil fuel use in shipping in both developed and developing countries, particularly SIDS and LDCs." The intent is to ensure, as far as legally practical, that there is equitable access to the technology, fuels and ship designs developed under the IMRB. Related to this, the issue of intellectual property rights is also addressed in the draft Charter. The co-sponsors encourage additional refinements to ensure equitable access to the knowledge, and that lessons learned from programmes supported by the IMRB be submitted for consideration by the Committee.

The proposal is not ambitious enough and its development would distract from development of other measures, so should be considered as part of mid- and long-term measures

13 The IMRF will provide some \$5 billion of guaranteed R&D funding, via an innovative collaborative mechanism, to increase TRLs throughout the global shipping industry, making its pathway to decarbonization possible – and without financial cost to Member States or the Organization. Moreover, the proposal is focused on the development and demonstration of technologies necessary to use zero-carbon fuels across the world fleet. This work is both fundamental and critical to achieving the ultimate ambition of putting a zero-carbon fleet on the water. Considering the critical importance of developing these technologies as quickly as possible, the co-sponsors refute any suggestion that the proposal lacks ambition.

14 The IMRF is not intended to act as a market-based measure (MBM) for international shipping to incentivize the uptake of low- and zero-carbon alternative fuels and technologies. The mandatory R&D contribution, equivalent to \$2 per tonne of fuel oil will provide sufficient funds to enable the necessary R&D to be undertaken and is not in any way linked to the market price of carbon either today or in the future. The R&D contribution is deliberately set at the level proposed to avoid possible disproportionately negative impacts on maritime transport costs or the economies of Member States.

15 When the Committee adopted the Initial IMO Strategy, it recognized the importance of initiating R&D activities as an immediate priority as being a key element in achieving the levels of ambition and so included the IMRB as a short-term measure in paragraph 4.7.9 of the Initial Strategy. But some Member States have suggested that the IMRB proposal should be incorporated into the deliberations on mid-and long-term measures, or that a future possible MBM for international shipping could provide funds for R&D. However, delaying, probably for at least five years, the funding of the accelerated R&D necessary to increase TRLs until any

mid- and long-term measures are adopted would be contrary to what has been correctly agreed under the Initial Strategy, and would seriously jeopardize achieving the 2050 level of ambition.

16 The proposal in document MEPC 76/7/7 is fully mature, subject to possible fine-tuning, and can therefore be approved at MEPC 77 with a view to adoption at MEPC 78. It will not therefore be a distraction from separate consideration of mid- and long-term measures, in accordance with the work plan agreed at MEPC 76 which the co-sponsors fully support.

Setting up the IMRB through amendments to the MARPOL Convention would present significant legal challenges

17 The co-sponsors remain unaware of any legal reason why MARPOL Annex VI cannot be amended to establish the IMRF and IMRB if the Parties to MARPOL Annex VI wish to do so. This view is supported by documents MEPC 76/7/40 (Belgium) and MEPC 76/INF.22 (Belgium et al.). The proposed work is also directly relevant to the protection of the marine environment, as development and introduction of zero-carbon technologies in the fleet are critical to protection of the marine environment, the atmosphere, and the environment as a whole. It is clear that IMRB and IMRF are to be established for the purpose of reducing GHGs from international shipping, which is in line with the objectives of MARPOL and relate to the substance of the Convention, and therefore consistent with the provisions of paragraph 7 of Article 16 of the Convention.

18 Some Member States, arguing against implementing the IMRB through amendments to MARPOL for "legal" reasons, have stated that the IMRB is not directly related to the protection of the marine environment or would create a precedent. These are not legal reasons for not implementing the IMRB through amendments to MARPOL, they are policy reasons. There have been no legal impediments identified that would limit the Committee's adoption of MARPOL amendments. Parties to Annex VI have the legal authority to amend the Convention, including for implementation of the IMRB. All that is needed is the political will to do so.

Voluntary contributions to an R&D trust fund should be further explored

19 The co-sponsors would welcome voluntary contributions to the IMRF or to a separate R&D trust fund to augment mandatory R&D contributions. But voluntary contributions alone will not provide the large amount of guaranteed funding necessary to adequately support the comprehensive R&D programme required to increase TRLs. Shipping companies have to contribute on an equal basis, in order to maintain the global level playing field. Voluntary R&D contributions would provide no certainty regarding the amount of funds or timing when funds would be collected, making it impossible to properly manage the IMRB's R&D programmes.

The proposed \$2 R&D contribution would have severe negative impact on developing countries

20 The co-sponsors of document MEPC 76/7/7 also submitted document MEPC 76/7/8 (Denmark et al.), which contains a comprehensive assessment of the impact on States of the proposed IMRB/F, that was conducted with the assistance of Clarkson Research. In summary, this concluded that a mandatory R&D contribution equivalent to \$2 per tonne of fuel oil will have no disproportionately negative impacts on States, including LDCs and SIDS or States geographically distant from their markets.

The IMRB must have balanced geographic representation

21 Geographic representation could be addressed using the approach adopted by the Committee for the *Third IMO GHG Study 2014* and the *Fourth IMO GHG Study 2020* that was also used for the 2016 Assessment of fuel oil availability under MARPOL Annex VI. In the draft charter, reference is already made that the IMRB board of directors should have representation from the five United Nations regions and that developing and developed countries should be equitably represented.

Conclusion

22 The Initial IMO Strategy sets out, in paragraph 4.7.9, a short-term measure to "initiate research and development activities addressing marine propulsion, alternative low-carbon and zero-carbon fuels [...] and establish an International Maritime Research Board to coordinate and oversee these R&D efforts." Establishment of the IMRB, funded by the IMRF as set out in document MEPC 76/7/7, at no cost to Member States or to the Organization, clearly meets the intent of the candidate short-term measure identified in the Initial IMO Strategy.

23 Achievement of the 2050 level of ambition requires large numbers of zero-carbon ships to be delivered from 2030, but current TRLs are insufficient to achieve this. There is also serious uncertainty about the pathways to decarbonization which presents huge barriers to the investment decisions needed for the transition. Existing funds dedicated to applied R&D of zero-technologies that can be utilized by ships are woefully inadequate. The establishment by the Organization of an extensive, coordinated R&D programme, with guaranteed funding of some \$5 billion – which will collaborate with and complement other R&D programmes – is therefore essential if the Initial IMO Strategy is to succeed. Without a massive and immediate acceleration of R&D, and regardless of any mid- and long-term measures the Organization might decide to adopt – there will be few, if any – proven zero-carbon technologies that are appropriate for use across the entire commercial fleet. The comprehensive analysis set out in document MEPC 77/7/1 identifies 120 distinct challenges for increasing TRLs and more than 260 separate R&D projects which will need to be conducted urgently.

24 The comprehensive regulatory proposal contained in document MEPC 76/7/7 takes into account the concerns expressed by Member States at MEPC 75 and this document addresses comments made during MEPC 76. The proposed amendments to MARPOL Annex VI set out in document MEPC 76/7/7 are mature, complete and ready for approval at MEPC 77. Nevertheless, the co-sponsors would encourage submissions from Member States that suggest any further fine-tuning, which can be finalized, if necessary, at MEPC 78.

25 Most importantly, if an extensive R&D programme is not established as soon as possible, by approval of the MARPOL Annex VI amendments at MEPC 77, the levels of ambition identified in the Initial IMO Strategy are unlikely to be achieved. Furthermore, this is a unique opportunity for the Organization to further demonstrate its commitment to the implementation of its Initial IMO Strategy and its leadership role as the global regulator in reducing GHG emissions from shipping.

Actions requested of the Committee

26 The Committee is invited to consider this document, and in particular:

- .1 note the responses and explanations to comments made by Member States during MEPC 76 set out in paragraphs 5 to 21, and the important conclusions set out in paragraphs 22 to 25; and
- .2 approve for circulation the draft amendments to MARPOL Annex VI to establish the IMRB and IMRF as set out in annex 1 of document MEPC 76/7/7, with a view to adoption by MEPC 78.