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15.10.2019

Konu: Sera Gazı Ar-Ge Fonu Kavramı Üzerine
Ortak Öneri Hk.

SİRKÜLER NO:710/ 2019

İlgi: ICS'nin 11.10.2019 tarihli ve MC(19)87 sayılı yazısı.

Sayın Üyemiz,

Uluslararası Deniz Ticaret Odası (International Chamber of Shipping-ICS) tarafından Odamıza gönderilen ilgi yazıda;

23-24 Ekim 2019 tarihleri arasında yapılacak Deniz Komitesi toplantısının gündem notlarında belirtildiği üzere, CLIA, BIMCO, INTERTANKO, IPTA ve WSC Sekreteryelerinin, MEPC 75'e önermek üzere ICS Sekreteryası ile birlikte Sera Gazı (Green House Gases-GHG) Ar-Ge Fonu üzerinde çalışma yaptığı,

Ortak sponsorluğu olası kurumların uzun görüşmelerinin ardından, bahse konu Fonun amaçları ve yönetimi ile ilgili Sözleşme Taslağı'nı, MARPOL'de yapılması gereken değişiklik önerilerini ve IMO GHG Süreci gereği etki değerlendirmesini içeren ilgi yazınının Ek'inde mevcut taslak önerinin hazırlandığı belirtilmiştir.

Deniz Komitesi toplantısındaki görüşmelere katkı sağlamak maksadıyla, Uluslararası Denizcilik Örgütü'ne (International Maritime Organization-IMO) sunulmak üzere hazırlanan taslak önerinin incelenmesini, bahse konu taslak öneriye ait varsa görüş ve önerilerinizin 21 Ekim 2019 tarihine kadar alper.mergen@denizticaretodasi.org.tr adresine gönderilmesini bilgilerinize arz/rica ederim.

Saygılarımla,

İsmet SALİHOĞLU

Genel Sekreter

Ek:

- 1- İlgi yazı Türkçe çevirisi (1 syf.)
- 2- İlgi yazı ve Ek'i (38 syf)

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IDR03.F01



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(Serbest Çeviridir)

EK-1

Deniz Komitesi Toplantısı - Sera Gazı (GHG) Ar-Ge Fonu Kavramı Üzerine Olası Ortak Endüstri Önerisi

Yapılması Gereken: Üyeler, 23-24 Ekim 2019 tarihleri arasında yapılacak Deniz Komitesi toplantısında görüşmelere katkı sağlamak için, Uluslararası Denizcilik Örgütü (International Maritime Organization-IMO)'ne sunulmak üzere hazırlanan Ek'te mevcut ön taslak öneriyi incelemeye davet edilmektedir.

23-24 Ekim 2019 tarihleri arasında yapılacak Deniz Komitesi toplantısının gündem notlarında da belirtildiği gibi, Uluslararası Cruise Lines Birliği (Cruise Lines International Association-CLIA), Baltık ve Uluslararası Denizcilik Konseyi (Baltic and International Maritime Council-BIMCO), Uluslararası Bağımsız Tanker Sahipleri Birliği (International Association of Independent Tanker Owners-INTERTANKO), Uluslararası Parsel Tankerleri Birliği (International Parcel Tankers Association-IPTA) ve Dünya Denizcilik Konseyi (World Shipping Council-WSC) Sekreteryalrı, Deniz Çevresini Koruma Komitesi (Marine Environment Protection Committee-MEPC) 75'e olası bir ortak öneri için ICS Sekreteryası ile birlikte GHG Ar-Ge Fonu kavramı üzerine çalışmaktadır. Ayrıntılı bir teklif geliştirilmesi için Eylül ayında ICS Kurulu ile "prensipte" anlaşılmasıyla bu durum devam etmiştir.

Ortak sponsorluğu olası kurumların uzun görüşmelerinin ardından Ek-A'da mevcut olan taslak öneri hazırlanmıştır. Bu belge aynı zamanda Fonun amaçları ve yönetimi ile ilgili Sözleşme Taslağı'nı, MARPOL'de yapılması gereken değişiklik önerilerini ve etki değerlendirmesini (IMO Sera Gazı Süreci gereği) içermektedir.

Taslak metinde henüz finansal değerler bulunmadığı belirtilmiştir. Sekreteryaya, önerilen Ar-Ge katkısı miktarının, gemilerde tüketilmek üzere temin edilen her 1 ton yakıt için 2 ABD doları olması gerektiğini, 10 yıllık periyod içerisinde (diğer paydaşlardan ek katkı gelebilir) 5 milyar ABD doları olacağını mütalaa etmektedir.

Temel metin, bazı ibraz ve çözülmesi gereken küçük detaylar içermesine rağmen uluslararası birlik sekreteryalrı bazında geniş ölçüde kabul görmüştür.

Herhangi bir yorum veya taslak öneriye girdi yapılırken, konu ilgili çok sayıda birlik göz önüne alınarak, potansiyel ortakların hepsinin mevcut metne ulaşmak için ayrıntılardan ödün vermek zorunda kaldıkları unutulmamalıdır.

Amaç, IMO'ya son teslim tarihi göz önünde bulundurularak tüm paydaşların çıkarına uygun bir kağıt üretmektir. IMO'ya Aralık ayında başvuru yapılması durumunda önerdiği kavram, kaçınılmaz olarak, MEPC'de hükümetlerle yapılan tartışmaların bir sonucu olarak gelişecektir.

Eğer yazılı olarak yorum yapmak istenirse, lütfen belirtilen paragraf numarası hakkında bilgi veriniz ve parça değişikliklerinde yorum yapmayınız.

Deniz Komitesi'nden gelen girdi ve toplantıdaki görüşmelerin çıktılarını Kurula raporlanmak üzere, 8 Kasım 2019 tarihinde yapılacak Uzun Vadeli GHG Çalışma Grubu'na iletilecektir.

Simon BENNETT
Genel Sekreter Yardımcısı

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11 October 2019

MC(19)87

PRIVATE AND CONFIDENTIAL

To: MARINE COMMITTEE
CC: BOARD

**MARINE COMMITTEE MEETING – POSSIBLE JOINT INDUSTRY SUBMISSION ON
GHG R&D FUND CONCEPT**

Action required: *Members are invited to review the attached preliminary draft submission to IMO in order to provide input to the discussion at the Marine Committee meeting on 23/24 October.*

As advised in the agenda notes for the Marine Committee meeting on 23/24 October, the Secretariats of CLIA, BIMCO, INTERTANKO, IPTA and WSC have been working with the ICS Secretariat on a possible joint submission to MEPC 75 on the concept of a GHG R&D Fund. This follows the agreement 'in principle' by the ICS Board in September to proceed with the development of a detailed proposal.

Following intensive discussions between the potential co-sponsors, a preliminary draft of this submission is attached at **Annex A**. This document also includes a suggested draft Charter concerning the objectives and governance of the Fund, proposals for the amendments to MARPOL that would be required, and an impact assessment (as required by the IMO GHG process).

Please note that although this draft text does yet not include monetary figures, the secretariats have agreed that the proposed quantum of the R&D contribution should be US\$2 per tonne of fuel purchased for consumption, which would generate about \$5 billion over a ten-year period (plus any additional contributions from other stakeholders).

The substantive text has broad agreement amongst the international association secretariats, although there are still some issues of presentation and minor details to be resolved.

When providing any comment or input on the draft submission, please bear in mind that, in view of the large number of associations involved, all of the potential co-sponsors have

already had to make compromises about details in order to arrive at the current text. The objective is to produce a paper that everyone can live with, recognising that if the submission is made to IMO in December (to meet the IMO submission deadline) the concept it proposes will inevitably evolve as result of discussion with governments within the MEPC.

If members wish to provide any comments in writing, please be specific about the paragraph number being referred to. Please do **not** provide comments in track changes.

Please send any written comments to simon.bennett@ics-shipping.org

Input from the Marine Committee, and the outcome of the discussion at the meeting, will be forwarded to the Long Term GHG Measures Working Group being held on 8 November, which will then report to the Board.

Members are kindly reminded to treat the attached document with care and discretion.

Simon Bennett
Deputy Secretary General

REDUCTION OF GHG EMISSIONS FROM SHIPS

Proposal to establish an International Maritime Research and Development Board (IMRB)

Submitted by xxx

SUMMARY

Executive Summary:

This document proposes the establishment of an IMO GHG reduction research and development programme with the objective of accelerating the research and development of low-carbon and zero-carbon fuels, energy sources, propulsion systems and other new GHG reduction technologies that will be necessary to achieve the levels of ambition for 2050 and beyond set by the IMO Initial Strategy on the Reduction of GHG Emissions from Ships. The co-sponsors have determined that core funding of approximately [X] billion USD over the life of the programme would fundamentally alter the current level of investment in maritime R&D focused on the development of low-carbon and zero-carbon technologies and fuels. An effort of this scale is expected to be successful in identifying one or more technical pathways that will lead to the introduction of zero-emission vessels across the maritime sector by 2030 and beyond.

Strategic Direction: 3

Output: 3.2

Action to be taken: Paragraph 57

Related documents: Resolution MEPC.304(72), ISWG-GHG 5/4/4, MEPC.1/Circ.885, MEPC 71/7/4

Introduction

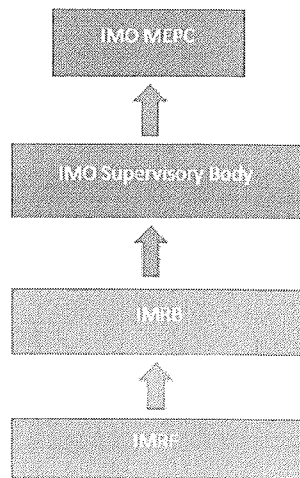
- 1 This proposal is intended to serve as one component of an integrated IMO strategy to phase-out greenhouse gas (GHG) emissions, consistent with the Initial Strategy on the Reduction of GHG Emissions from Ships (hereafter referred to as the IMO Strategy) that was adopted by IMO in 2018 (Resolution MEPC.304(72)). The IMO Strategy establishes ambitious targets, including the phase-out of GHG emissions '*as soon as possible this century*' and reducing annual GHG emissions from international shipping by at least 50% by 2050 compared to 2008.
- 2 To reach the 2050 ambition and to realize the full vision of the IMO Strategy it will be necessary to develop a suite of low-carbon and zero-carbon technologies and fuels that will be the basis of the next maritime technology transition. While the technologies necessary to achieve these ambitious goals do not yet exist in a form which is commercially viable for widespread use by international shipping, especially for transoceanic voyages, the co-sponsors are confident that these ambitions can be realized if the necessary research and development investments in developing low-carbon and zero-carbon fuels and technologies are incorporated as part of an integrated IMO GHG strategy.
- 3 The IMO Strategy calls *inter alia* for consideration of '*research and development activities addressing marine propulsion, alternative low-carbon and zero-carbon fuels, and innovative technologies [with] an International Maritime Research Board to coordinate and oversee these R&D efforts.*' (The above mentioned International Maritime Research Board in the IMO Strategy is the same as the International Maritime Research and Development Board (IMRB) discussed in this document.)
- 4 The development, scaling, and application of new technologies are probably the most important steps needed to deliver the levels of ambition set by the IMO GHG Strategy. The IMRB and its co-ordinated R&D programmes would help accelerate the development of low-carbon and zero-carbon emission technologies and fuel systems that are specifically tailored for maritime application, including larger transoceanic ships. The IMRB and the specific R&D programmes it could support would be expected to help deliver substantial GHG reductions in the mid to long term, but discussions to establish the IMRB will need to occur in the short term if the expected benefits are to be achieved in the time period consistent with the IMO Strategy.
- 5 This paper has been developed by the co-sponsors as a follow-up to ISWG-GHG 5/4/4. The ideas proposed in this paper are intended to facilitate discussion about the IMRB concept which could potentially allow

the industry to take collective responsibility for decarbonising international shipping. The concept outlined in this paper is intended to provide the necessary structure, direction, and funding for successful development of low-carbon and zero-carbon technologies and fuels that may be used across the world fleet to achieve the vision and objectives of the IMO Strategy. The amount of funding to be applied is specifically intended to help accelerate the necessary research and development work that will be critical to delivering this.

Proposed IMRB Concept

- 6 The IMRB would play a critical role in accelerating the development of low-carbon and zero-carbon emission CO₂ fuels and technologies for international shipping, with a negligible impact upon trade or the economic interests of IMO Member States.
- 7 With the support of the industry, the IMRB could be established by IMO relatively quickly, as a non-governmental research and development organisation which would report to IMO, together with a mechanism for providing the necessary funding from *shipowners* via a mandatory system of R&D contributions per tonne of marine fuel purchased for consumption by ships. It would also be expected that other stakeholders would contribute on a voluntary basis.
- 8 The IMRB would report to a body of representative IMO Member States established by the MEPC in order to provide oversight of its activities, including approval of the IMRB's budget. The supervisory body would report to the MEPC.
- 9 The IMRB concept would include three functional components:
 - International Maritime Research and Development Board (IMRB);
 - IMO 'supervisory body' (reporting to the MEPC) to provide oversight and approve the IMRB budget; and

- International Maritime Research Fund (IMRF) that would provide industry financing for the IMRB and the research and development programmes it would undertake.



- 10 The IMRB would consist of two main elements, both financed from the budget set for the IMRB:
- An IMRB Board of Directors that would oversee the work of the IMRB; and
 - A secretariat, led by an Executive Director, that would include both professional and administrative staff to manage the substantive work of the IMRB, implementing its strategy and R&D programmes, and providing financial oversight and administration of the IMRF and the R&D contribution system.
- 11 10 It is envisaged that the IMRB and the IMRF might have a life of between ten and fifteen years. Once the MEPC has concluded that the IMRB has fulfilled its objectives, the IMRB and IMRF would be formally dissolved.
- 12 The regulations required to establish and finance the IMRB would be adopted via amendments to Annex VI of MARPOL. To ensure that the necessary research and development commences as soon as possible, it is essential that these amendments are in place by 2023. To facilitate discussion within the Committee, Annex 1 contains proposed draft amendments to Annex VI of MARPOL to implement the IMRB concept.

- 13 The co-sponsors do not consider this proposed IMRB concept to be a market based measure (MBM). Most importantly the proposal is considered an essential step in developing the necessary fuels and technologies that are critical to achieving the introduction of zero-carbon vessels (ZEVs) across the commercial maritime fleet. Once these technical pathways are developed through the work of the IMRB, the Committee would need to consider what regulatory measures or economic instruments may be appropriate to facilitate the transition from the carbon-based fuels and ships in today's fleet to a fleet made up of low-carbon and zero-carbon ships.

International Maritime Research and Development Board

- 14 The objective of the IMRB would be to accelerate the research, development and deployment of low-carbon and zero-carbon fuels, energy sources, propulsion systems and other new GHG reduction technologies that will be necessary to achieve the levels of ambition for 2050 and beyond set by the IMO Strategy. The IMRB would perform the necessary management responsibilities involved with directing an international research and development programme of this scale.
- 15 The IMRB would operate under a Charter approved by the MEPC that would set out the primary research and development objectives to be pursued and achieved, as well as critical principles, operating parameters and expectations for the IMRB. The Charter would also include the procedures for selecting the members of the Board of Directors and the Secretariat. Annex 2 of this document sets forth a proposed draft Charter for consideration by the Committee.
- 16 Consistent with the agreed Charter, the IMRB would undertake a broad spectrum of activities and management functions. Specific responsibilities would include:
- Development, direction, management and administration of an international maritime research and development strategy designed to promote the development of low-carbon and zero-carbon technologies and fuels for use across the maritime sector, including propulsion systems and fuels suitable for application in transoceanic commercial shipping;
 - Identification, definition, and ongoing refinement of the specific research priorities consistent with the mandate and Charter of the IMRB;

- Development of specific R&D programmes, review of proposals received, and decisions concerning specific project approval and funding;
 - Consideration of changes and modifications to specific research and development objectives in light of project results, technology developments, and experience gained;
 - Preparing a detailed budget and report each year for review and approval by IMO;
 - Administering the collection of R&D contributions to the IMRF and the issuance of evidence of contributions having been made by shipowners [the company as defined in the ISM Code], both annually and immediately via an automated payments system; and
 - Management and administration of the IMRF including all relevant fiduciary responsibilities associated with the management, accounting, and investment of IMRF funds; and providing regular progress reports, assessments, and recommendations to the new IMO supervisory body (reporting to the MEPC) that might be established for this purpose.
- 17 The IMRB would direct and manage research and development projects consistent with its mandate. Actual research projects would be undertaken through qualified third party research institutions and other qualified entities. The research and development work would be subject to specific deliverables and constraints as per contract or specific binding grant conditions. In particular, these would require recipients of any funding to conform with appropriate intellectual property principles that would be developed as a guide for work undertaken as part of IMRB programmes or grants.
- a. 17 bis For the purpose of the proposal in this document, “development” is intended to mean 'applied research' only and would not include commercial development of relevant technologies and fuels, or taking new technologies to market. That would be the responsibility of other stakeholders.
- 18 The composition of the IMRB Board of Directors will have to be agreed by the MEPC, with procedures to prevent potential conflicts of interest. It is envisaged that the IMRB Board of Directors would include non-governmental professionals with experience *inter alia* in: research and development, shipping, shipbuilding, zero-carbon fuels, environmental energy policy and other expertise relevant to the mandate of the IMRB. [The Board of Directors would be composed of the IMRB Executive

Director, a defined number of nominated board members, and a permanent representative from the IMO Secretariat. The IMRB Board of Directors would be elected through a defined nomination process set out in the Charter and subject to a term of [x] years with 1/3 of the Board to be renewed or replaced every [x] years, thereby ensuring that the Board maintains continuity and experience, as new members join the Board over time. The draft charter provides more details on the Board of Directors.]

IMO Supervisory Body

- 19 IMO oversight of the IMRB and its work would be achieved through the establishment of a new IMO supervisory body composed of an appropriate number of IMO Member State representatives with support from the IMO secretariat.
- 20 The details concerning the composition of this IMO supervisory body and its relationship with the MEPC would be determined by IMO Member States. However, while it might be composed of a defined number of IMO Member State representatives it could be open to participation by any Party to Annex VI of MARPOL that wishes to contribute views and information relevant to the work of the IMRB.
- 21 The IMO supervisory body would meet on a periodic basis to perform its functions and provide oversight and direction to the IMRB.
- 22 Specific responsibilities of the IMO supervisory body would include:
 - General oversight and advice to the IMRB and its Board of Directors on the strategic direction and budget of the IMRB;
 - Ensuring that the IMRB performs its duties and responsibilities consistent with the objectives set forth in the IMRB Charter;
 - Approval of the overall annual operating budget for the IMRB after considering recommendations and other relevant information provided by the IMRB and its Board of Directors;
 - Reviewing, or if necessary undertaking, independent financial audits of the IMRB concerning the management and administration of the IMRF and related investments to ensure that the IMRB fully meets its fiduciary responsibilities in managing the IMRF, including the accounting of funds expended for specific research and development programmes, grants and other funding provided by the IMRB using IMRF funds; and

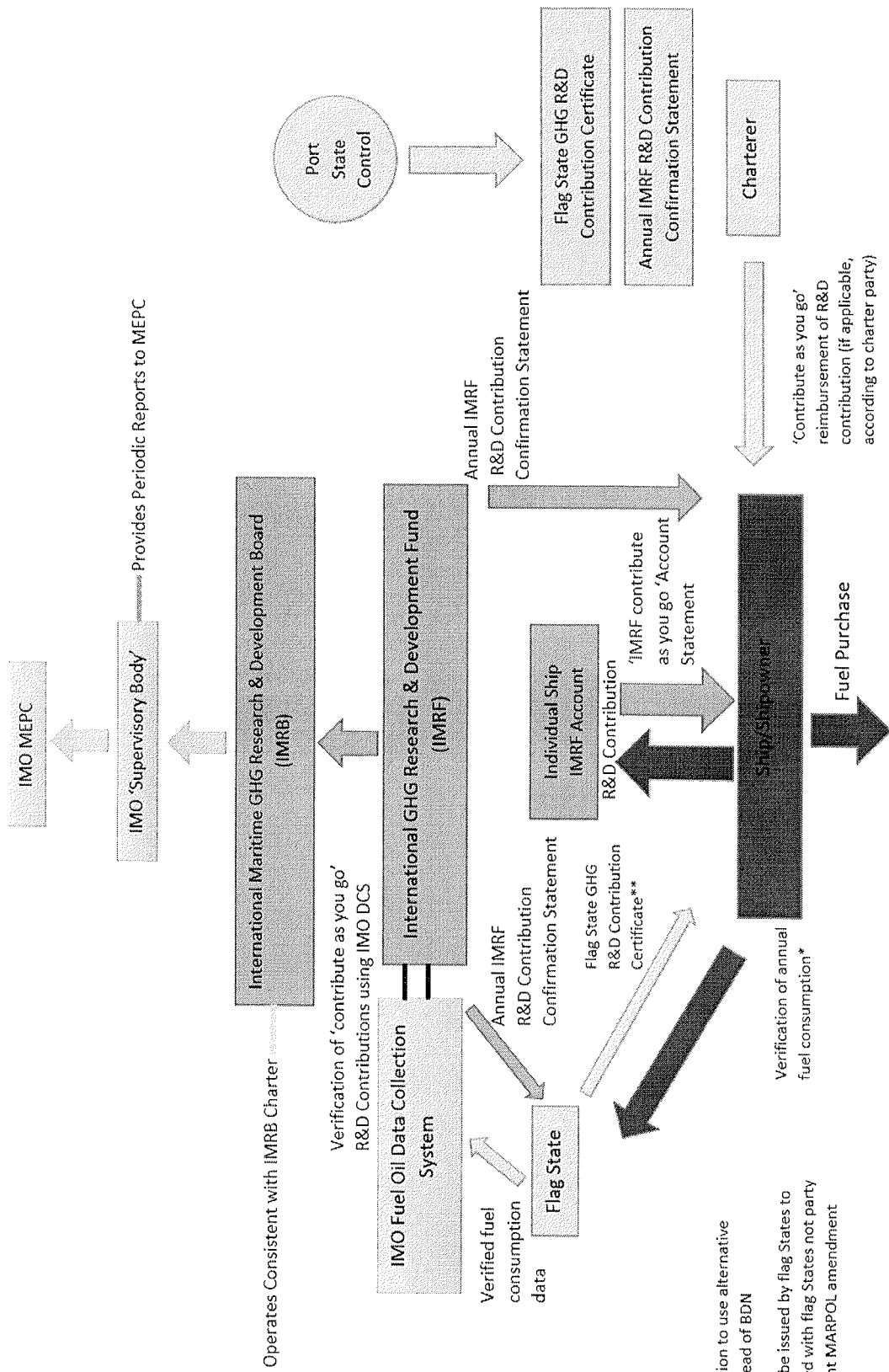
- Advise upon recommendations made by the IMRB to modify and adjust the IMRB research strategy and budget as appropriate in light of technological, scientific, and research developments.
- 23 While the IMO supervisory body would approve the overall operating budget of the IMRB, and provide advice on its overall strategy, decisions on the funding of individual R&D projects should be the sole responsibility of the IMRB and its Board of Directors. The proposed draft charter contained in Annex 2 further elaborates on the role of the IMO supervisory body.

Funding the IMRB

- 24 The funding of the IMRB would need to be sustainable with recurring income on an annual basis until the objectives of the IMRB have been met. This would be achieved through the establishment of an International Maritime Research Fund (IMRF) under the auspices of IMO.
- 25 The core funding of the IMRF would be provided via mandatory R&D contributions per tonne of fuel purchased for consumption. However, it is recommended that the MEPC encourage other stakeholders, such as fuel producers, engine manufacturers, governments, foundations, etc.), to make voluntary contributions to the IMRF. The monies collected would be held 'in trust' by the IMRF in order to conduct maritime R&D projects and would no longer belong to the individual companies or entities that had made the R&D contributions.
- 26 In order to expedite establishment of the IMRB and IMRF, the industry would be willing to help develop a fully automated system, allowing ships to make R&D contributions directly to IMRF Accounts established for each ship (matching their IMO number).
- 27 There would need to be a brief trial period following the official establishment of the IMRF and before evidence of shipping companies having made R&D contributions became mandatory, in which monies were not actually transmitted, in order to identify and address any potential problems with the functioning of the system.
- 28 It is also anticipated the IMRF would accrue interest which would be used to support the work of the IMRB, and might possibly also receive investment income from its funds.

- 29 To achieve the goals established by the IMO Strategy, the IMRB would require significant funding capable of supporting numerous research and development projects to be undertaken by multiple research institutions and other qualified entities around the world. While a substantial sum of money would be necessary to support the R&D projects of the IMRB, the quantum of the R&D contribution per tonne of fuel required could be relatively modest and would be decided by the MEPC. This should ensure that any impacts on trade and the economic interests of Member States are negligible, following an appropriate IMO impact assessment on States ((MEPC.1/Circ.885). Annex 3 of this document provides an draft initial impact assessment on States for this IMRB proposal.
- 30 The co-sponsors estimate that roughly [] billion USD [SDR] in core funding is needed over the life of the IMRB and IMRF to fund the necessary research and development work supported by the IMRB. The [] billion figure is based on a preliminary analysis of what research and development work activities could be undertaken at this level of funding. See MEPC 75 INF X [*Ricardo paper*] for a copy of the relevant study.
- a. 30 bis Considering current fuel consumed by the international fleet, the co-sponsors estimate that about \$[] million per year would be needed to fund the IMRB. This is based on the assumption that the total fuel consumption of international shipping, before the introduction of zero carbon fuels, is about 250 million tonnes per annum. Consequently, the co-sponsors propose that the quantum of the R&D contribution would be set by the MEPC at US\$ [] per tonne of marine fuel purchased for consumption.
 - b. 30 ter A lower R&D contribution per tonne would be set for alternative low-carbon fuels or energy sources, or those with lower GHG emissions than conventional fuel oil.
- 31 The following is a diagram, followed by details, of how the IMRF contribution system would work.

Note to Simon: A couple edits are needed in the diagram. For example, the box that currently Reads "Flag State R&D Contribution Certificate" needs to read "International Maritime Research Certificate" issued by Flag State. Also "Verification of 'contribute as you go' R&D Contributions using IMO DCS" can read simply Verification of R&D contributions using IMO DCS". Also change "Contribute as you go reimbursement of R&D contribution (if applicable according to charter party" to "Payment of R&D contribution (if applicable to charter party)."



Operates Consistent with IMRB Charter

Verification of 'contribute as you go' R&D Contributions using IMO DCS

Verified fuel consumption data

Annual IMRF R&D Contribution Confirmation Statement

Annual IMRF R&D Contribution Confirmation Statement

Flag State

Individual Ship IMRF Account R&D Contribution

'IMRF contribute as you go' Account Statement

Flag State GHG R&D Contribution Certificate

Annual IMRF R&D Contribution Confirmation Statement

*Possible option to use alternative methods instead of BDN

**This could be issued by flag States to ship registered with flag States not party to the relevant MARPOL amendment

Verification of annual fuel consumption*

Fuel Purchase

'Contribute as you go' reimbursement of R&D contribution (if applicable, according to charter party)

Charterer

Port State Control

How the Mandatory R&D Contribution System Would Work

- 32 Mandatory statutory certification would be used to demonstrate compliance. A ship would be required to demonstrate that the necessary R&D contributions had been made to the IMRF, commensurate with the ship's annual fuel purchased for consumption, as verified by the flag State. The existing IMO Fuel Oil Data Collection System (DCS) would be used to verify the amount of this contribution. The co-sponsors recognise that ships below 5,000 GT are currently not required to report data to the IMO DCS, therefore this proposal limits the applicability to ships of 5,000 GT and above. However, the Committee may wish to discuss whether ships below 5,000 GT should be included.
- 33 Each shipping company would be required to make the necessary contribution directly to the IMRF for each ship it has assumed responsibility for under the International Safety Management Code, regardless of the flag. In the case of ships registered with non-Parties to Annex VI, the principle of 'No More Favourable Treatment' would need to apply, with flag State certificates of all visiting ships checked by port State control authorities.
- 34 Each shipping company would be required to make the R&D contributions to the IMRF for its ships on a mandatory basis as required by an amendment to Annex VI of MARPOL. However, the co-sponsors are of the view that the charterer should be responsible for the contribution to the IMRF for ships that it charters, if the ship operates under a charter party clause that requires the charterer to pay for, or reimburse the ship operator for, the fuel purchased for consumption on that ship. This view has been reflected in the draft amendments in Annex 1.
- 35 The shipping company (as defined by the ISM Code) would have the responsibility for providing evidence to the flag state of transmitting the required R&D contributions to the IMRF for its ships.
- 36 The IMRF would use data submitted to the IMO Fuel Oil Data Collection System (DCS) to verify the R&D contributions to the IMRF made for individual ships were correct, while maintaining the confidentiality of individual ships' data.
- 37 The IMRF would issue documentary evidence to the flag State and the shipping company that the required contribution has been made for the ship. Upon receipt of an annual IMRF account statement, the flag Administration (or delegated Recognised Organization) would issue an

official International Maritime Research Certificate to the ship confirming that required R&D contributions had been made during the previous calendar year.

Transmission of R&D Contributions to the IMRF

- 38 Every ship (including ships registered with non-Parties to MARPOL Annex VI) would have an IMRF Account provided by the IMRF, identified by the vessel's IMO number. Safeguards would be developed to prevent accidental double payment.
- 39 On receipt of an R&D contribution, an automated IMRF system would immediately provide an IMRF Account Statement to the shipping company.
- 40 The IMRF Account Statement would show the R&D contributions against the amount of fuel purchased, corresponding to the Bunker Delivery Note (BDN) for the fuel purchased. This would also serve as evidence of transmission of the R&D contribution to the IMRF by the shipping company if it needs to be recovered from another commercial entity such as a charterer.
- 41 R&D contributions would need to be transmitted by the shipping company directly to the IMRF either:
- on a 'contribute as you go' basis, i.e. within three months of the bunker fuel purchased for consumption, as shown on the BDN, or
 - on an annual basis.

The main benefit of contributing on an "as you go" basis is that this will facilitate reimbursement to the shipping company from third parties, such as charterers, that might ultimately be contractually responsible for paying for the cost of the fuel and the required R&D contribution.

- 42 Direct R&D contributions by the shipping company to the IMRF are essential for the concept to work and to minimise inefficiencies within the system for transmitting all of the R&D contributions to the IMRF for use by the IMRB. R&D contributions cannot be made via bunker suppliers or with the involvement of non-maritime authorities, as this would lead to significant complications and difficulties in enforcement and administration of the system. It could also lead to market distortion in the case of bunker suppliers located within countries which were not Parties to the new MARPOL Annex VI regulation. Requiring R&D contributions to be made to the IMRF via flag States would also be too complex, and could potentially lead to taxation and hypothecation issues with national administrations. For these reasons, the proposed funding mechanism is premised on R&D contributions being transmitted directly by shipping companies to the IMRF.

Verification of R&D Contributions

- 43 Ships would be required by a new MARPOL Annex VI regulation to hold a flag State certificate confirming that the necessary R&D contributions had been made. However, the IMRF itself would verify that required contributions had been made, using data within the IMO DCS.¹ This should simplify the necessary amendments to Annex VI of MARPOL by building on the existing responsibilities of flag States with regard to the IMO DCS.
- 44 The IMRF would prepare an Annual IMRF R&D Contribution Statement which would be sent directly to the shipping company for each of its ships and the flag state. This would confirm that the R&D contributions made by the shipping company during the previous calendar year correspond with the verified fuel consumption data submitted to the IMO DCS by the flag Administration. The Annual Statement would only be issued after the IMRF has confirmed that the contributions are commensurate with the data recorded by the IMO DCS.
- 45 In the event of any discrepancy with the IMO DCS, the IMRF would either issue a rebate or invoice the shipping company for any shortfall and collect the outstanding amount before issuing the Annual IMRF R&D Contribution Statement.
- 46 Allowing time for the resolution of any discrepancies, the Annual IMRF R&D Contribution Statement could be issued to the shipping company for each of its ships [and the flag state] within an agreed period (e.g. before 1 June each year) [and presented by the shipping company to the flag State]. **Joe's Note: The diagram on page 9 shows the Contribution Statement being sent from the IMRF to the shipping company AND the flag state. This is reflected in paragraphs 36 and 43. However this paragraph states the Contribution Statement is sent to the shipping company who then presents it to the flag State. I have added text in square brackets to give you the option of how you want this paragraph to read.** However, most of these statements could be issued earlier in the year to facilitate issuance of flag State certificates and avoid logjams.
- 47 The flag Administration (or delegated Recognised Organization) would then issue an official International Maritime Research Certificate to the ship, confirming that required R&D contributions had been made during the previous calendar year. Allowing time for the verification process by

¹ The IMO Fuel Oil Data Collection System allows Bunker Delivery Notes, received at the time of purchase, to serve as a proxy for recording consumption, although other methods can also be used.

- the IMRF, this flag state certificate might normally be valid for the same 12 month period e.g. 1 September to 30 August.
- 48 The flag State International Maritime Research Certificate would form part of the ship's statutory certification.
- 49 To ensure uniform global implementation and compliance, the system would need to be overseen by flag State administrations, supported by port State control (PSC) authorities when carrying out inspections. PSC authorities would be entitled to check that the ship has an up-to-date International Maritime Research Certificate issued by the flag State confirming that required contributions have been made during the previous calendar year.
- 50 PSC authorities would be entitled to check that R&D contributions have been made regardless of whether the ship is registered with a flag State party to MARPOL Annex VI, consistent with the principle of 'No More Favourable Treatment'.
- 51 Applicable guidance for the new regulations would need to include appropriate provisions for instances where ships change flag State or company during the annual verification period.

Ships Registered with Non-Parties

- 52 Shipping companies with ships registered with a non-Party to MARPOL Annex VI would need to be able to transmit the necessary contributions to the IMRF. In the case of ships registered with flag States that are not Parties to MARPOL Annex VI, IMO has agreed that Recognised Organizations can verify and submit fuel data to IMO for inclusion in the DCS on behalf of such vessels.
- 53 Such ships could be allocated an IMRF Account and be issued by the IMRF with 'contribute as you go' statements of receipt, and an Annual IMRF R&D Contribution Statement in the same way as other ships. The status of the IMRF as a non-governmental research and development fund should help to facilitate the participation of all ships in the system regardless of the flag State.
- 54 It should be noted that IMO Member States which have ratified the IMO liability Conventions have been willing to issue certificates to ships registered with flag States that have not ratified these Conventions. The draft amendments in Annex 1 allow this to occur for the International Maritime Research Certificate.

Implementation of the IMRB

- 55 Implementation of this proposal would be done through amendments to Annex VI of MARPOL and accompanying resolutions and/or guidelines. These instruments would need to address the following:

- Establishment of the IMRB and the IMRF and their relationship with IMO (included in the draft amendments in Annex 1);
- the quantum of the *mandatory* R&D contribution by ships per tonne of fuel purchased for consumption;
- The expectation that voluntary contributions would be made by other stakeholders and ensuring a means for facilitating such contributions to the IMRB;
- Arrangements for approval by the IMO of the budget for the IMRB, based on data for total fuel consumption by the world fleet provided by the IMO DCS² and any additional voluntary contributions by other stakeholders;
- A mandatory requirement for ships to carry a valid International Maritime Research Certificate, issued by, or on behalf of, the flag State, confirming that required R&D contributions have been made to the IMRF during the previous calendar year (included in the draft amendments in Annex 1);
- Provisions for ships entering or leaving service part way through the year;
- A mechanism for IMO to transfer individual ships' annual fuel oil consumption data to the IMRF, as recorded in the IMO DCS, whilst preserving the confidentiality of such data;
- A stipulation that although the shipping company (as defined by the ISM Code) would be legally responsible for transmitting the R&D contribution to the IMRF, it is the commercial entity responsible for paying for the fuel which is responsible for the cost of the R&D contribution (included in the draft amendments in Annex 1);
- Port State control measures and provisions regarding application of the 'No More Favourable Treatment' principle to ships registered to non-Parties to the new regulation (included in the draft amendments in Annex 1);
- Treatment of ships of under 5,000 GT (depending on the nature of the provisions which may need to be developed for smaller ships); and

² This would need to take account of what might be decided regarding the treatment of ships below 5,000 GT which are currently not covered by the IMO DCS.

- Provisions that enable the IMRB and IMRF to be phased down and dissolved once the MEPC has concluded that the IMRB has fulfilled the objectives set forth in its charter.

56 Those elements listed above which are not included in the amendments to Annex VI of MARPOL should be addressed in an MEPC resolution or guidelines, as may be appropriate.

CONCLUSION

57 56 This proposals is intended to facilitate discussion among governments and other stakeholders about the development of a measure that could prove to be one of the most critical actions in the IMO GHG strategy, enabling the IMO and industry to meet the 2050 GHG reduction target established in the IMO Strategy. This proposal outlines a possible framework for how an *International Maritime Research and Development Board* (IMRB) could work to achieve that objective, recognising that further details would inevitably require further development should these ideas be taken forward by the Committee.

PROPOSED ACTION TO BE TAKEN BY THE MEPC

58 In order to ensure that essential research and development commences as soon as possible so the targets in the IMO Strategy can be met, the co-sponsors are of the view that this program would need to be in place by 2023. Therefore, to achieve this objective, the co-sponsors suggest that the GHG reduction research and development program proposed in this document be discussed at MEPC 75 with a view toward providing comments and views on the general acceptability of the concept of the IMRB/IMRF and, if multiple governments express interest in further exploring this proposal, it is recommended that the MEPC agree to allot sufficient time for this concept to be discussed in detail at MEPC 76.

Annex 1 – Proposed draft amendments to Annex VI of MARPOL

Annex 2 – Proposed draft charter for the IMRB and IMRF

Annex 3 – Initial impact assessment on States

ANNEX 1

Proposed Draft Amendments to Annex VI of MARPOL (Greenhouse Gas Reduction Research and Development)

A new chapter 5 is added at the end of the Annex as follows:

Chapter 5

Regulations for Greenhouse Gas Reduction Research and Development

Regulation 24 – Application

1. This chapter shall apply to all ships of 5000 gross tonnage and above.
2. The provisions of this chapter shall not apply to any warship, naval auxiliary or other ship owned or operated by a State and used, for the time being, only on government non-commercial service.

Regulation 25 – International Maritime Research and Development Board (IMRB) and International Maritime Research Fund (IMRF)

1. The Marine Environment Protection Committee (MEPC) shall establish an International Maritime Research and Development Board (IMRB) for the purpose of accelerating the research and development of low carbon and zero-carbon emission technologies and fuel systems that are specifically tailored for maritime application through the management of an International Maritime Research Fund (IMRF).
2. The IMRB shall be established and operate in accordance with a Charter approved by the MEPC. The IMRB's management of the IMRF shall be conducted in accordance with the IMRB Charter approved by the MEPC.
3. The MEPC shall establish a Supervisory Body composed of an appropriate number of IMO Member State representatives to conduct oversight of the IMRB and its work. The IMO Secretariat shall provide the necessary administrative support for the Supervisory Body.

Regulation 26 – Contribution to the International Maritime Research Fund

1. Each [company, as defined by regulation 1.1.2 of the International Safety Management Code], shall make an annual contribution to the IMRF for each ship it has assumed responsibility for under the International Safety Management Code. The contribution for each company to which this regulation applies shall be [X] [USD][SDR] per-tonne of fuel purchased for

consumption. Fuel consumed for each calendar year shall be verified via data collected in accordance with regulation 22A of this Annex and compared with confirmed payments made to the IMRF concerning fuel purchased for consumption for each ship for which the company has responsibility.

2. If a ship under paragraph 1 is operating under a charter party clause that requires the charterer to pay for the fuel purchased for consumption on that ship, the associated contribution to the International Maritime Research Fund for that ship shall be the responsibility of the charterer.
3. The requirements stipulated under paragraphs 1 and 2 shall apply for a twelve year period beginning on the date this Chapter enters into force.

Regulation 27 – Certification

1. An International Maritime Research Certificate shall be issued to each ship of 5000 gross tons and above confirming that the annual contribution required under regulation 26 has been made to the International Maritime Research Fund during the previous calendar year for that ship. This certificate shall be issued or endorsed either by the Administration or by any person or organization duly authorized by it. In every case, the Administration assumes full responsibility for the certificate.
2. The International Maritime Research Certificate shall be drawn up in a form corresponding to the model given in Appendix [x] to this Annex and shall be at least be written in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in case of a dispute or discrepancy.
3. The International Maritime Research Certificate shall be issued for a period specified by the Administration. The International Maritime Research Certificate may cover multiple years, but must include an endorsement for each successive year for the certificate to remain valid.
4. A Party may issue an International Maritime Research Certificate to a ship that is entitled to fly the flag of a State which is or is not Party, if satisfied that the contribution required under regulation 26 has been made to the International Maritime Research Fund during the previous calendar year for that ship. A copy of the certificate shall be transmitted as soon as possible to the [Organisation] [IMRB]. A certificate so issued shall have the same force and receive the same recognition as a certificate issued under paragraph 1 of this regulation.

Regulation 28 – Port State Control

1. Procedures relating to the port State control prescribed in regulation 10 of this Annex shall apply to this Chapter.

Regulation 29 – Termination of this Chapter

1. After an operational period of twelve years, beginning on the date that this Chapter enters into force, mandatory contributions to the IMRF shall cease. Once mandatory contributions cease, the IMRB shall continue to oversee all planned and approved projects through completion, and may plan and approve new projects, subject to availability of funds. All new and ongoing work projects shall be completed in a period of five years once mandatory contributions have ceased.

Upon completion of the IMRB's work programme and with the approval of the MEPC, the IMRB and IMRF shall cease operations. Upon such a determination, Chapter 5 and its requirements shall be dissolved, unless the parties determine otherwise.

Appendix XI – International Maritime Research Certificate

[To be developed.]”

Annex 2
Draft Charter
Of the International Maritime Research and Development Board
(IMRB) and
the International Maritime Research Fund (IMRF)

Draft dated 10 October 2019

Intro/Preamble

Whereas:

- The *Initial International Maritime Organization (IMO) Strategy on Reduction of Greenhouse Gas (GHG) Emissions from Ships* calls for GHG emissions from international shipping to peak as soon as possible and to reduce the total annual GHG emissions from shipping by at least 50% by 2050 when compared to 2008 levels, while phasing out GHG emissions as soon as possible in this century on a pathway consistent with the Paris Agreement temperature goals.
- The *Initial IMO Strategy on Reduction of GHG Emissions from Ships* explicitly recognizes the need for new research and development activities addressing marine propulsion, alternative low-carbon and zero-carbon fuels, and innovative technologies to further enhance the energy efficiency of ships, and recognizes the concurrent need to establish an *International Maritime Research and Development Board* to coordinate and oversee these R&D efforts.
- These ambitious goals will require the accelerated development and deployment of low carbon and zero carbon fuels, propulsion systems, and related technologies specifically to meet the unique power demands that make up the broad spectrum of shipping activity in the commercial maritime sector.
- Consequently, this document sets forth the mandate, responsibilities, and associated provisions necessary to establish an *International Maritime Research and Development Board* (IMRB) whose purpose is to establish an international maritime research and development programme specifically devoted to research and development of low and zero carbon technologies suitable for application in the commercial maritime sector as well as proper administration of all available funds.

Article 1

Establishment

1. The *International Maritime Research and Development Board* is established in [insert relevant geographic location] and is registered as ... consistent with the [insert relevant legal authorities governing the establishment of a non-profit organization in the relevant jurisdiction].
2. An International Maritime Research Fund (IMRF), specifically created for the collection of funds for the IMRB, and to be overseen by and subordinate to the IMRB, shall be established
3. The IMRB and the IMRF are authorized pursuant to regulations 24 – 29 of Chapter 5 of MARPOL Annex VI, as amended and adopted. [This particular provision will be dependent on what specific language amending MARPOL Annex VI is adopted.]

Article 2

Mandate

1. The mandate and purpose of the *International Maritime Research and Development Board* (IMRB) is to establish, oversee, and fund an international research and development programme designed to identify low carbon and zero carbon fuels, propulsion systems, and related technologies for use in commercial maritime service.
2. The IMRB and its programme shall support research and development projects that accelerate the development and deployment of low carbon and zero carbon fuels, marine propulsion systems, and related technology and design advancements. [Low carbon and zero carbon fuels and technologies are non-fossil based fuels and technologies that produce near-zero or zero carbon emissions when evaluating the full lifecycle production of a given fuel or technology.]
3. The IMRB and its programme shall develop a portfolio of research and development projects that pursue low carbon and zero carbon fuels and technologies that reflect the differing demands that are inherent to a broad spectrum of shipping activity including large transoceanic ships, smaller short-sea ships, passenger vessels, and the major ship types that constitute commercial maritime trades. This portfolio shall include research, development, and demonstration projects that seek to identify and develop low carbon and zero carbon fuels and technologies which are not yet available for commercial deployment on most ship types.

4. While the primary mandate of the IMRB is focused on identifying low and zero carbon fuels and technologies, the IMRB shall also consider co-benefits. Consequently, the IMRB will consider and encourage development of fuels and technologies that also minimize harmful emissions such as oxides of nitrogen, SOx, particulate matter, black carbon, and other emissions and discharges considered harmful to the environment.
5. The IMRB may exercise its discretion to also pursue mixed-fuel (E.G., hybrid fossil and non-fossil fuel) projects if such projects are considered to be important pathways in facilitating the transition to low and zero carbon fuels and technologies.
6. The IMRB's research and development efforts may include field demonstrations of promising technologies, fuels, and marine propulsion systems with the aim of catalyzing the conditions that will lead to low and zero carbon systems that are commercially available and economically and technically viable for use across a wide range of ship types used in the commercial maritime sector.
7. When the IMRB determines and the IMO agrees that low carbon and zero carbon fuels, propulsion systems, and technologies can be made available across the maritime sector, the mandate shall be considered to have been met.

Article 3

Objectives

1. The primary objective of the IMRB is to meet the above mandate through the funding and management of research and development projects that support development of low-carbon and zero-carbon fuels, marine propulsion systems, and related technologies for use in the commercial maritime sector.
2. pursue the most cost-effective low carbon and zero carbon fuels and technologies. []
3. The IMRB shall also seek to foster international cooperation and collaboration among the recipients of its grants and contracts and other interested parties, so as to maximize the productivity and progress of research and development projects. In this context, the IMRB shall work to disseminate knowledge gained from funded 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.
4. Among its research and development initiatives, the IMRB shall include funding to develop and construct fully functioning prototypes. The IMRB may also fund

projects to develop prototype ship-to-shore infrastructure designs to facilitate practical and economical fueling of ships. Such projects will be limited to prototype development and shall not be expanded to include commercial infrastructure construction and shipbuilding.

5. The IMRB shall achieve these objectives in a manner that is transparent, credible, and trusted, while remaining aligned with the Objectives of the IMO GHG Strategy.

Article 4

Management and Organization of the IMRB and IMRF

1. The IMRB shall be composed of the IMRB Board of Directors, an Executive Director, Chief Financial Officer, Technical Research Officer, General Counsel, and other professional and administrative staff to perform the managerial functions and responsibilities necessary to the successful operation of the IMRB and the IMRF. (See Figure 1 which is appended to this document.)
2. The IMRF will provide the financial resources necessary to support the programmatic work of the IMRB including grants and contracts to qualified research and development institutions and other qualified parties performing work as directed and authorized by the IMRB. The IMRF will also provide the necessary financial resources to support the IMRB Secretariat including salaries, office space, and all other related expenses. The management of the IMRF and related fiduciary responsibilities will be conducted by the Chief Financial Officer (CFO). The CFO and financial staff managing the IMRF, as well as the IMRF itself will be an integral component of the IMRB Secretariat.
3. The Board of Directors shall consist of [11] individuals, including a Chairperson, who are non-governmental professionals with extensive experience and recognized expertise in one or more of the following fields: research and development, shipping, shipbuilding, low and zero-carbon fuels and technologies, environmental policy, energy policy, and other expertise relevant to the mandate of the IMRB.
4. The term lengths for the Board of Directors shall be initially staggered, with 4 members serving 1 year terms, 4 members serving 2 year terms, and 3 members serving 3 year terms. The standard term length after each initial term shall be 3 years, and Board Members will be able to serve a maximum of 2 terms. A Board Member must again be nominated and selected, via the same process that a new nominee would face, in order to serve a second term. This way, each year, approximately one-third of the Board's seats shall rotate to new nominees, or in

some cases, will be retained for a Board Member's second term, and the Board of Directors will always have members with sufficient IMRB-specific experience.

5. The initial Chairperson of the Board will be selected by the IMO Secretary General from a list of candidates provided by the IMRB Nominating Committee.
6. The IMRB Nominating Committee shall be composed of 14 members. Of these 14 members, 6 shall be from the shipping industry, 4 shall be government representatives, and 4 shall be from academia and environmental NGOs. The remaining initial Board Members will then be selected by the Chairperson from a list of candidates named by the IMRB Nominating Committee. The IMRB Nominating Committee may utilize professional assistance for nominating prospective Board Members consistent with paragraph 6 below. Once the IMRB Board of Directors has been established, subsequent nominations to ensure continuity of the Board consistent with the term lengths outlined in paragraph 4 shall be made by the IMRB Nominating Committee with the approval of the IMRB Board of Directors. Interviews and other evaluations may be performed as the IMRB Nominating Committee, Executive Director, and IMRB Board of Directors deem appropriate.
7. The IMRB Nominating Committee shall ensure that nominees for the IMRB Board of Directors are non-governmental professionals with experience *inter alia* in: research and development, shipping, shipbuilding, low carbon and zero-carbon fuels and technologies, environmental policy, energy policy, and other expertise relevant to the mandate of the IMRB. Specific criteria and guidance outlining expertise and experience are set forth in Appendix [].
8. The Board of Directors shall be responsible for making high level decisions concerning strategy and management of the IMRB. These responsibilities shall include: development of specific R&D needs, providing guidance to the Executive Director, and identification, definition, and ongoing refinement of the specific research priorities consistent with the mandate of the IMRB.
9. The IMRB Board of Directors shall have the authority to set its own processes and procedures for reviewing and evaluating proposals on an individual and/or group basis, and shall have the final say on approval of grants and contracts that have been recommended to it by the IMRB staff.
10. [The Board of Directors may, if appropriate, recommend an increase or decrease in the funding of the IMRB should the Board of Directors conclude that the amount of funding currently authorized warrants adjustment.]
11. The Chairman of the Board shall rotate every [2-4] years. The initial term of the inaugural Chairman should be [...] years.

12. The Chairman of the Board's responsibilities shall include convening and leading meetings of the IMRB Board of Directors, and assisting the Executive Director in communications with the IMO Oversight Body and other parties.
13. With respect to the initial establishment of the IMRB, the Board of Directors shall select an IMRB Executive Director and Chief Financial Officer from a list of candidates provided by the IMRB Nominating Committee. Following a rigorous interview process, the Board of Directors shall select the most qualified person for the respective positions. Subsequent Executive Directors and Chief Financial Officers will be chosen by the IMRB Board of Directors.
14. The responsibilities of the IMRB Executive Director shall include overall management and direction of the IMRB and the IMRF. The Executive Director and Chairman of the Board of Directors shall be responsible for presenting the annual operating budget to the IMO Oversight Body and reporting on the IMRB's work and progress to the IMO Oversight Body, EPC, and other bodies, as appropriate.
15. The Chief Financial Officer (CFO) shall oversee the management of the IMRF, the operating budget of the IMRB, and financial management of the programmatic contracts and grants, consistent with the budget approved by the IMRB Board of Directors and the IMO Oversight Body, and all related fiduciary obligations. The CFO reports to the IMRB Executive Director and shall regularly advise on the management of the IMRF, issues with contributions or with other aspects of the IMRF, and other areas involving the IMRF and IMRB, as the Board of Directors sees fit.
16. The IMRB Executive Director shall hire a Technical Research Director to administer and oversee the strategic research initiatives of the IMRB and provide technical advice to the Executive Director. The Technical Research Director shall report to the Executive Director.
17. The IMRB Executive Director, with the approval of the Board of Directors, shall consider qualified candidates and make a selection for the position of General Counsel. The General Counsel will provide legal counsel to the Executive Director, Technical Research Director, and the IMRB Board of Directors. In addition, the General Counsel will be responsible and have authority to oversee all matters where a conflict of interest may arise. In this context, the General Counsel shall review and have access to all administrative and managerial reports regarding the IMRF, funding awards, hiring procedures, hiring decisions, nominations and appointments to the IMRB Board of Directors, and other areas of the IMRB as necessary to ensure that there are no conflicts of interest. Any

conflicts of interest identified shall be reported to the Board of Directors by the General Counsel in a timely manner.

18. The IMRB Chairman of the Board of Directors, Executive Director, Technical Research Director, and Chief Financial Officer, as appropriate, shall present regular reports on the management and status of the research and development programme, the IMRF, and related matters to the IMO Oversight Body.
19. The IMRB Executive Director [with the approval of the Board of Directors] shall have the authority to hire professional and administrative staff as is necessary to ensure the smooth and efficient operation of the IMRB and IMRF. The Executive Director shall also have the authority to delegate specific managerial authorities as he or she deems necessary.

Article 5

Conflict of Interest Provisions

1. The selection of the IMRB Board of Directors, Executive Director, Chief Financial Officer, the Technical Research Director, and the General Counsel (hereafter referred to as the IMRB Officers) shall be subject to strict conflict of interest provisions to ensure that the management, direction, and decision-making within the IMRB and IMRF are undertaken in a manner that is free of political and commercial conflicts of interest or the appearance of such conflicts. It is critical that nominees for IMRB Officers are free from notable conflicts of interest, both commercial and political. Therefore, any nominee should be vetted in light of specific criteria identified in Appendix [], and subject to review and approval of the IMRB General Counsel.
2. The IMRB Officers and the performance of their responsibilities shall be subject to a defined set of conflict of interest provisions as set out in Appendix [] of this document.

Article 6

Acquisition and Management of Resources

1. The International Maritime Research Fund (IMRF) shall be financed by the industry via mandatory contributions, on the basis of fuel purchased for consumption by each ship subject to the regulation[s] as approved by the IMO. The fee per tonne of fuel oil purchased for consumption shall be established in consideration of the needs of the IMRB, while taking into

account the total fuel consumption of the world fleet as determined by the IMO Data Collection System (DCS). The specific fee shall be subject to IMO approval.

2. IMO Member States and other interested stakeholders may contribute to the IMRF on a voluntary basis. A process for such voluntary contributions shall be created and maintained by the staff of the IMRB.
3. IMRF accounts shall be created for individual ships subject to the regulation, identified by the ship's IMO number. Contributions shall be paid to their respective accounts directly via an automated system for increased efficiency.
4. The IMRB staff shall use the existing IMO Fuel Oil Data Collection System to verify that the contributions have been made as required.
5. The IMRB shall issue documentary evidence in the form of quarterly and annual IMRF contribution statements to Flag states, with a copy sent to each respective ship-owner, as evidence that the required contributions have been made for every ship. Upon receipt of this statement, Flag states can then issue the required *International Maritime Research Certificate*, valid for the next year.
6. Issuance of the certificate for each year shall be subject to a ship fully meeting its required contributions for the previous year.
7. The contributions to the IMRF should be treated as a component of the cost of marine fuel, and thus the commercial entity ultimately paying for the fuel should also pay for the cost of the contribution, though the responsibility of transmitting payment to the Fund itself and maintaining compliance so as to receive an annual certificate rests with the ship-owner.
8. Ships registered with non-parties to MARPOL Annex VI will also have an IMRF Account linked to their IMO number, and will be required to contribute along with all others, per the principle of "No More Favorable Treatment." Non-party ships shall carry a statement of compliance by their Administration/RO that they have contributed full and final for the previous year.
9. Payment may be made on a "contribute as you go" basis (submitted within three months of purchasing fuel) or through a single annual payment for the preceding year.
10. Interest gained from the IMRF being held in trust shall be used to support the work of the IMRB.

11. The IMRF shall be managed by the Chief Financial Officer.
12. Consistent with the budget approved by the IMRB Board of Directors and the IMO Oversight Body, the IMRB Executive Director shall possess the authority to approve contracts, purchases, and other actions necessary for the effective operation of the IMRB and IMRF. Contracts and grants relating to specific research and development projects require approval of the IMRB Board of Directors and are subject to the provisions specified under Article 7.

Article 7

Administration of Grants and Contracts

1. A system shall be established and put in place by the IMRB, in which qualified applicants may submit proposals for research and development projects as requested by the IMRB through a "*Request for Proposal (RFP)*," solicitation of contract proposals, or through other mechanisms as deemed appropriate by the IMRB Executive Director. The IMRB will also develop a process and criteria for reviewing unsolicited proposals consistent with *Article 3* of this document.
2. The IMRB professional staff shall review proposals based on their merit, feasibility, proposed cost, and scientific and technical potential.
3. In reviewing proposals, as well as research and development work performed or currently in progress, the IMRB staff may utilize appropriate peer review measures and engage external consultants with appropriate technical expertise to determine the scientific merit and feasibility of proposals, and to assess progress made in the case of existing work projects.
4. Those proposals considered to have the most merit shall be recommended to the IMRB Board of Directors for final review and determination of whether to approve the work, the duration of the work project, and the specific level of funding to be approved.
5. All research and development grants and contracts shall be subject to the grantee's acceptance of specific terms to be established by the IMRB, including, but not limited to:

The intellectual property policy for all grants and contracts shall be as follows:

[To be added per advice from legal counsel]

- a. Grantees or contractors shall provide regular updates on substantive progress made and use of funds provided to date.
 - b. Grantees or contractors shall return unused funds (if any remain) at the completion of the proposed project to the IMRB, which shall then deposit such remaining funds back into the IMRF.
 - c. The IMRB shall be authorized to terminate a given work project and its funding if in the judgement of the IMRB [Board of Directors] the recipient has failed to satisfactorily perform the stipulated work in a timely manner or has failed to properly account for or manage IMRB funds. The IMRB will hold the sole authority to terminate funding of a given work project.
6. Contracts and other payments (e.g. salaries, office space, and other expenses) that are primarily related to internal management and administrative responsibilities of the IMRB may be approved by the Executive Director. The Executive Director may also delegate such approvals to the Chief Financial Officer.

Article 8

Supervision and Oversight by the IMO

1. The IMO shall have oversight authority, via a specific entity to be created for such a purpose, over the IMRB.
2. The oversight body shall meet on a periodic basis to perform its functions and provide supervision and direction to the IMRB. It's responsibilities shall include:
 - a. Providing general oversight and advice to the IMRB and its Board of Directors on the strategic direction and budget of the IMRB.
 - b. Ensuring that the IMRB performs its duties and responsibilities consistent with the objectives and mandate set forth in this Charter;
 - c. Advise upon recommendations made by the IMRB to modify and adjust the IMRB research strategy and budget as appropriate in light of technological, scientific, and research developments.
 - d. Reviewing and approving the IMRB's annual operating budget after considering recommendations and other relevant reports and

information provided by the IMRB and its Board of Directors. In the event that the IMO Oversight Body does not approve the proposed annual operating budget, the IMRB shall prepare a modified budget within 45 days of the initial decision.

- e. Reviewing, and, if necessary, undertaking independent financial audits of the IMRB concerning the management and administration of the IMRF and related investments to ensure that the IMRB fully meets its fiduciary duties in managing the IMRF, including the accounting of funds expended for specific research and development programs, grants, contracts, and other funding provided by the IMRB using IMRF funds.
3. The IMO Oversight Body shall receive regular reports on project progress and updates, as well as reports on the IMRF and its stability, performance, and any other related issues.
4. The IMO Oversight Body shall not have the authority to make decisions on the funding of individual R&D projects; rather, these decisions will be the sole responsibility of the IMRB and its Board of Directors.

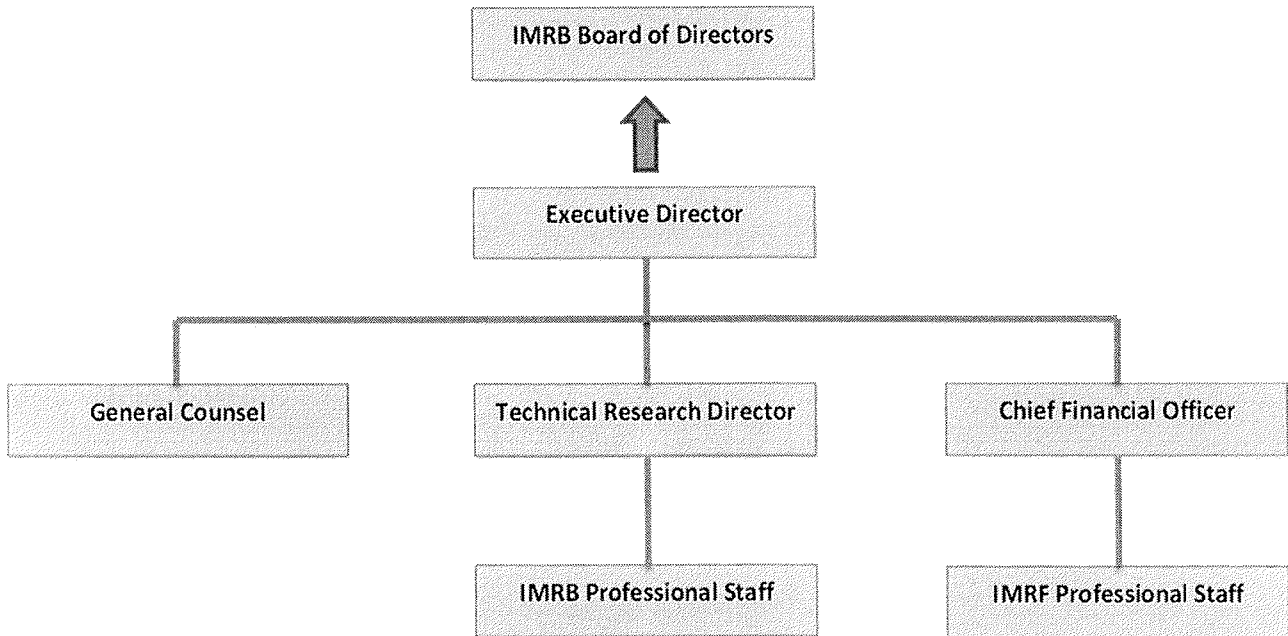
Article 9

Dissolution

2. As stipulated in regulation 29 of Chapter 5 of MARPOL Annex VI, and after an operational period of twelve years, beginning on the date that this Chapter enters into force, mandatory contributions to the IMRF shall cease. Once mandatory contributions cease, the IMRB shall continue to oversee all planned and approved projects through completion, and may plan and approve new projects, subject to availability of funds. All new and ongoing work projects shall be completed in a period of five years once mandatory contributions have ceased.
3. Upon completion of the IMRB's work programme and with the approval of the MEPC, the IMRB and IMRF shall cease operations. Upon such a determination, Chapter 5 and its requirements shall be dissolved, unless the parties determine otherwise.

Appendix

Figure 1:



ANNEX 3

DRAFT INITIAL IMPACT ASSESSMENT ON STATES

1 Measure: Establishment of an International Maritime Research and Development Board to accelerate the development of low-carbon and zero-carbon emission ships

1.1 Proposals

.1 To establish an International Maritime Research and Development Board (IMRB) to accelerate the development of low-carbon and zero-carbon emission ships in order to achieve the 2050 levels of ambition of the Initial IMO strategy on reduction of GHG emissions from ships (MEPC.304(72)) (the initial strategy). The objectives and activities of the IMRB would be governed by a Charter that would be approved by the Organization and overseen by a 'supervisory body' reporting to the MEPC.

2. The research and development programmes of the IMRB would be funded by an International Maritime Research Fund (IMRF), which would itself be funded by the shipping industry in the form of direct mandatory contributions, via an automated payment system into the IMRF, for each tonne of fuel purchased for consumption on board ship. This mandatory contribution would be fixed at US\$[X] per tonne of fuel, sufficient to raise around US\$[X] billion over a ten year period. Other stakeholders would also be encouraged to contribute into the IMRF.

3. Ships would be required to carry an International Maritime Research Certificate demonstrating compliance with required contributions to the IMRF, verified using the existing Fuel Oil Data Collection System. This would be a statutory certificate issued by the ship's flag Administration and subject to examination by port State control. This would provide an effective means of enforcing mandatory contributions that will minimise the administrative burden on Administrations which would not have any direct role in the collection of contributions from shipping companies.

4. The IMRB and its co-ordinated R&D programmes would accelerate the development of low-carbon and zero-carbon emission technologies and fuel systems that are specifically tailored for maritime application, especially for larger transoceanic ships. The IMRB and the specific R&D programmes it would support are expected to help deliver substantial GHG reductions from international shipping in the mid to long term.

1.2 Assessment of impacts on Member States

.1 Geographic remoteness of and connectivity to main markets

The proposed contribution level of US\$[X] per tonne of fuel is within the daily variability of fuel oil bunker prices and would be a marginal component of marine fuel oil cost (less than 1%). It would not therefore impact maritime transport costs.

.2 Cargo value and type

As the proposals would apply to all ships (at least 5000GT and above) it would not discriminate between different cargoes. As the additional cost of fuel would be so marginal, and within the daily variability of marine fuel costs, it would not impact the shipping costs of low value cargoes.

.3 Transport dependency

The proposals will not disproportionately impact member states which are dependent on maritime transport.

.4 Transport costs

The proposals will not affect transport costs beyond any impacts which might already result from daily volatility of fuel oil prices.

.5 Food security

The proposals will have no adverse impact on food security.

.6 Disaster response

The proposals will have no adverse impact on disaster response.

.7 Cost-effectiveness

The proposals would impose a marginal cost on individual ships whilst creating a multi-billion dollar fund to accelerate research and development of low and zero emission fuels and technologies. Therefore, it is considered to be an extremely cost effective measure which will facilitate successful delivery of the 2050 levels of ambition of the initial strategy.

.8 Socio-economic progress and development

The proposals would have no adverse impact on socio-economic progress and development.

1.3 Justification

.1 Delivery of the initial strategy, in particular providing a pathway to deliver the 2050 level of ambition of the initial strategy.

.2 Accelerating the development of low and zero emission fuels and technologies suitable for maritime application to mitigate climate change.

.3 Low and zero emission fuels and technologies are expected to offer significant co-benefits in terms of reducing or eliminating emissions of local pollutants such as particulate matter, with positive impacts for local ecosystems and public health.

.4 The proposals will ensure that the shipping industry collectively provides the funding which will be required to undertake the necessary research and development effort.

1.4 Number of ships affected and impact on GHG emissions

.1 All ships subject to MARPOL Annex VI (at least 5000GT and above).

.2 Successful delivery of the 2050 levels of ambition of the initial strategy.

1.5 Impact on seafarers

.1 The proposals will have no impacts for seafarers.

1.6 Positive Impacts

.1 Accelerated development of low and zero emission fuels and technologies, facilitating reduced GHG emissions from ships and successful delivery of the 2050 levels of ambition of the initial strategy.

.2 Timely identification of low emission pathways which will mitigate the risk that resources are wasted developing measures which are later found to be ineffective whilst giving industry confidence to invest in measures which are identified as having a high emissions reduction potential.

.3 Provision of a multi-billion dollar fund which would be available to support a wide range of research and development projects, many of which are expected to provide significant co-benefits such as improved public health and reduced local pollution.

.4 The proposals will be cost effective and minimise the financial burden on individual shipowners, with no anticipated adverse consequences for trade or the economic interests of member states. No other potential proposals are considered able to match the effectiveness of this proposal for decarbonising shipping or this proposal's negligible negative impacts.

.5 Accelerated development of commercially viable low-carbon and zero-carbon emission ships, including ships engaged in transoceanic voyages.

1.7 Negative Impacts

.1 There would be a marginal increase in the cost of purchasing fuel oil for ships. The proposed mandatory contribution of US\$[X] per tonne of fuel purchased for consumption is within the daily variability of marine fuel prices and would not significantly affect fuel cost. Therefore the proposal will not impact the cost of maritime transport beyond existing exposure to daily fuel price variability.

.2 The IMRB has been designed to minimise administrative burden for both industry and member states, therefore the costs of establishing and maintaining the IMRB and IMRF, and costs of enforcement for member states will have no negative impacts for member states.

1.8 Quantification of Impacts

.1 GHG reductions at least in line with the 2050 level of ambition of the initial strategy.

.2 Shipping transport cost impacts are expected to be within normal levels of commercial variability.

.3 There is expected to be no significant impact for trade.

1.9 Will the measure result in any disproportionately negative impacts?

.1 No.

1.10 Expected workload for IMO

.1 Development of an amendment to the MARPOL Convention.

.2 Establishment of the necessary IMO oversight function to oversee the IMRB.