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FURTHER CONSIDERATION AND FINALIZATION OF THE ASSESSMENT AND SELECTION OF MEASURE(S) TO FURTHER DEVELOP IN THE CONTEXT OF PHASE II OF THE WORK PLAN FOR THE DEVELOPMENT OF MID- AND LONG-TERM MEASURES

Further information about a basket of measures combining an IMSF&R (Fund and Reward) mechanism (economic measure) and a Global (GHG) Fuel Standard (technical measure)

Submitted by ICS

SUMMARY

Executive summary:	To inform a decision about which mid-term measures to prioritize for further development and finalization under Part III of the Work plan, this document provides further information about the suggested basket of measures set out by ICS in documents ISWG-GHG 14/3 and ISWG-GHG 15/3/6, as new and separate chapters of MARPOL Annex VI, combining both an IMSF&R (Fund and Reward) mechanism (economic measure) and a Global (GHG) Fuel Standard (technical measure). This document reiterates the vital and urgent need for the adoption of both sets of measures and, to assist a comprehensive impact assessment, examines the potential economic impacts on States of both measures being adopted at the same time and implemented in parallel.
Strategic direction, if applicable:	3
Output:	3.2
Action to be taken:	Paragraph 24
Related documents:	Resolution MEPC.304(72); MEPC 80/WP.6; MEPC 79/15, MEPC 79/WP.5; ISWG-GHG 15/3/6; ISWG-GHG 13/4/7; ISWG-GHG 12/3/10, ISWG-GHG 12/3/8, ISWG 12/3/3; ISWG-GHG 10/5/3 and ISWG-GHG 10/5/6

Background

1 Document ISWG-GHG 14/3 (ICS) contained further information about a revised IMSF&R proposal to implement an IMSF&R (Fund and Reward) mechanism and establish an IMO Maritime Sustainability Fund (IMSF) as an economic measure to incentivize the production of uptake of low- and zero-GHG fuels. This revised IMSF&R proposal combines elements of the proposal originally set out in document ISWG-GHG 12/3/9 (Argentina et al.) whilst also taking account of similar proposals contained in documents MEPC 78/7/5 and ISWG-GHG 12/3/17 (both by Japan) for a "feebate" system, and document MEPC 76/7/12 (Marshall Islands and Solomon Islands) which also proposed a flat rate (levy-based) contribution system using a contribution mechanism similar to that proposed for what was then called the IMRF as set out in document MEPC 76/7/7 (Denmark et al.).

2 In addition, as a complement to this economic measure, document ISWG-GHG 15/3/6 (ICS) sets out a simplified proposal for a Global (GHG) Fuel Standard (GFS) as a technical measure, in response to the proposal for a GFS set out in document ISWG-GHG 13/4/7 (Austria et al.) and document ISWG-GHG 13/4/8 (Austria et al.) which suggests that the co-sponsors could accept a flat rate (levy-based) contribution system to an IMO fund provided that this is complemented by a GFS.

3 In the opinion of ICS, at ISWG-GHG 14, there was increased convergence towards a basket of measures which includes a flat rate (levy-based) contribution mechanism in combination with a form of a GHG intensity standard for marine fuel. ICS recalls that many delegations highlighted:

.1 the urgency to develop candidate mid-term measures in line with the timelines in the Work plan to ensure that the Group could deliver on the emission reduction commitments to be identified in the 2023 Strategy, which would give the shipping industry and the energy sector a clear signal which can provide the certainty required;

.2 the further development of the measures would need to give due account to possible impacts on States, including those resulting from possible increased transport costs;

.3 how a technical element, notably a gradually reducing GHG intensity, could be complemented by an economic measure to further incentivize the uptake of low- and zero-GHG fuels to reduce the cost-gap and support developing States in the transition; and

.4 the need to further increase understanding of how the proposed economic and technical measures can function together.

4 To help inform a decision by Member States about measures to prioritize for further development and finalization under Phase III of the Work plan, the annexes to documents ISWG-GHG 14/3 and ISWG-GHG 15/3/6 suggest possible draft regulatory text to implement a basket of measures, in parallel and at the same time, for adoption in 2025, via two new separate chapters to MARPOL Annex VI.

5 To assist the comprehensive impact assessment on States of this basket of measures, which will be required before adoption by the Committee, this document also explores the potential combined impacts of both the IMSF&R (Fund and Reward) and GFS measures within a basket of measures, recognizing that this will depend upon the details of the final design of both of these measures as may be decided by the Committee in Phase III.

Discussion

Why both an IMSF&R (Fund and Reward) mechanism using a flat rate (levy-based) contribution system and a GFS are required

6 As explained in document ISWG-GHG 15/3/6, while the objective of a GFS should be to help increase the production and uptake of all types of low- and zero-GHG fuels, including methanol, ammonia, hydrogen and synthetic fuels (plus the use of technologies such as carbon capture) which some ships may start to use before 2030, it is emphasized that significant production and availability of such fuels is only likely to occur after 2030 and will only be possible if the GFS is complemented by an economic measure, such as the Fund and Reward (feebate) mechanism as set out in documents ISWG-GHG 14/3 (ICS) and ISWG-GHG 14/3/1 (Japan).

7 ICS emphasizes that while a fuel standard could help to deliver a significant reduction of the GHG intensity of marine fuels by the increased use, amongst other alternative fuels, of sustainable biofuels or blends by 2030, such a measure on its own will not achieve full decarbonization of shipping by the middle of the century, as may be required by the forthcoming 2023 IMO GHG Strategy. Full decarbonization will require the widespread global availability and uptake of those alternative fuels as referred to in paragraph 6 of this document, in addition to sustainable biofuels and blends.

8 As mentioned above, full decarbonization necessitates the accelerated uptake of low- and zero-GHG fuels in the 2030s, which will only be achieved if a technical fuel standard is also supported by the adoption of a separate economic measure to provide the necessary incentives for the production and uptake of low- and zero-GHG fuels, such as the Fund and Reward (feebate) mechanism.

9 If a fuel standard is implemented without an economic measure, and the required GHG fuel intensity is to be further reduced after 2030, unless a "take-off" point has been achieved by 2030 for the production of low- and zero-GHG fuels such as methanol, hydrogen ammonia and synthetic fuels (as well more concentrated sustainable biofuel blends) by a reward (feebate) mechanism, there are unlikely to be sufficient quantities of such fuels available to make such a reduction of the required GHG fuel intensity plausible, especially given the competition that shipping will face for the use of these new fuels and energy sources from other industrial sectors.

10 Without a separate economic measure being adopted at the same time as a fuel standard, which rewards first users of other new low- and zero-GHG fuels in addition to sustainable biofuels, such a "take-off" point is very unlikely to be achieved by 2030, which in turn would mean that any mid-century net zero goals would be unlikely to be achievable.

Impact on States of a basket of measures comprising a Fund and Reward mechanism and a GFS

11 When conducting a comprehensive impact assessment of the basket of measures, it is suggested that this should only focus on the economic impacts on States during the initial period of implementation i.e. up until 2030. This is because it will be difficult to meaningfully estimate the costs of low- and zero-GHG fuels compared to conventional fuels after 2030, which will be subject to factors such as the availability of these new fuels, improvements in Technology Readiness Levels, and political/economic developments which may be impossible to anticipate. Moreover, the draft regulations set out in documents ISWG-GHG 14/3 and ISWG-GHG 15/3/6 both provide Member States with the comfort of review clauses which will require further detailed analysis to be undertaken before 2030 of issues such as the cost and availability of low- and zero-GHG fuels which will be relevant to assessing the impact of both of these measures after 2030.

12 An initial impact assessment on States of a flat rate (levy-based) contribution system, which would finance the Fund and Reward (feebate) mechanism as suggested in document ISWG-GHG 14/3, was set out in the annex to document ISWG-GHG 12/3/8 (ICS). This contained a detailed initial assessment, prepared with the assistance of Clarksons Research, of the impacts on States of a range of different quanta of contributions, by ships per tonne of CO_2 emitted, to an IMO fund. This initial impact assessment, which analysed the volatility of marine fuel oil prices over the past ten years on freight rates and the price of delivered cargo for a variety of trade routes and cargo types, with a focus on developing countries geographically remote from their markets, suggests that an initial contribution by ships set at $50 or more per tonne of CO_2 (or CO_2e) emitted (i.e. in excess of $150 per tonne of fuel oil) would have no disproportionately negative impacts on the economies of States.

13 A comprehensive assessment of the economic impact of a basket of measures, such as that set out in the annexes to documents ISWG-GHG 14/3 and ISWG-GHG 15/3/6, would also need to take account of the adoption of a Global Fuel Standard (GFS). In the meantime, however, as explained below, ICS suggests that the combined impact of implementing both a Fund and Reward (feebate) mechanism and a GFS within a basket of mid-term measures could, depending on the design of the basket of measures, potentially be significantly less than $60 per tonne of fuel oil, which according to the Clarksons Research analysis would have no disproportionately negative trade impacts.

14 ICS takes no view as to what the quantum of the contribution by ships to an IMO fund should be. However, as explained in document ISWG-GHG 14/3, depending on how the Fund and Reward mechanism is designed, it is possible that a contribution quantum of about $12.5 per tonne of CO_2 (or CO_2e) emitted, i.e. about $40 per tonne of fuel consumed, or lower, could actually be sufficient to achieve the objectives of the economic measure, i.e. providing incentives to first movers that will increase the production and uptake of low- and zero-GHG fuels to achieve a "take-off" point by 2030 so that the availability of these alternative fuels by the 2030s will be sufficient to achieve a net zero emissions goal, mid-century, while also providing funds to help the maritime GHG reduction efforts of developing countries.

15 If the GFS requires applicable ships, by 2030, to use fuels with a GHG intensity about 5% lower than that in, say, 2019, this might potentially be achieved by many (though not all) ships through the use of 20% sustainable biofuel blends which are currently between 10% and 20%[*] more expensive than conventional fuel oil used by most ships today. Based on the previous 5-year average cost of conventional fuel oil (about $400 per tonne) this would potentially increase the cost of fuel oil for most ships in 2030 by between $40 and $80 per tonne of fuel. However, it should be noted that, under the ICS proposal set out in document ISWG-GHG 15/3/6, the full impact would not occur until 2030, when compliance with the GHG intensity standard is first required. Moreover, the growth of the production of sustainable marine biofuels (and other alternative fuels) would be encouraged by the adoption of a GFS regulation in combination with a Fund and Reward (feebate) mechanism that provides rewards for the emissions prevented by the use of sustainable biofuel blends (among other alternative fuels) which could further reduce the cost of these sustainable biofuel blends by 2030.

16 When combined with the impact of an economic measure such as the Fund and Reward (feebate) mechanism, if the contribution to the IMO fund was set at about $40 or less per tonne of fuel then the combined impact of both the technical and economic measures might, at first sight, seem to entail a total additional cost of between $80 to $120 per tonne of fuel. Notwithstanding the analysis by Clarksons Research, which suggested that additional fuel costs far in excess of $150 per tonne of marine fuel would not have any disproportionately negative impacts on States, such additional fuel costs might still be regarded by some Member

[*] https://shipandbunker.com/news/emea/372215-b30-biofuel-blend-at-23-premium-to-rotterdam-vlsfo-report

States as being politically unacceptable. However, this ignores the potential impacts of the reward mechanism on the cost of eligible alternative fuels whose use would be mandated by the GFS, and that the contribution by ships to an IMO fund for the consumption of biofuels, for example, could, based on the LCA Guidelines, be lower than for the consumption of conventional fuel oil.

17 Provided that sustainable biofuel blends (with other alternative fuels) are eligible for rewards under the IMSF&R (Fund and Reward) measure, if the reward rate was set at, say, $100 per tonne of CO_2 (or CO_2e) prevented (as presented in the illustrative example given in paragraph 25 of document ISWG-GHG 14/3) which a contribution quantum to an IMO fund of about $40 (or less) per tonne of fuel should be sufficient to fund, then a ship using, for example, a sustainable biofuel blend to comply with the fuel standard could receive a reward that could significantly reduce the additional fuel cost and thus the economic impact on States.

18 If, for example, and subject to the CO_2/GHG conversion factors that are agreed for sustainable biofuels as part of the LCA Guidelines, a sustainable 20% biofuel blend was determined to prevent 10% of the emissions that would be caused using conventional fuels, a reward rate of $100 per tonne of CO_2 (or CO_2e) prevented might be equivalent to a reward of some $30 per tonne of 20% biofuel blend used.

19 Depending on the cost of sustainable biofuel blends in 2030, the actual additional cost of fuel for those ships that used these fuels to comply with the fuel standard – after account is taken of the potential $30 reward per tonne of sustainable 20% biofuel blend from the IMO fund – might therefore be between only $20 and $50 per tonne of fuel oil. The total additional cost of the basket of measures might therefore only amount to between $60 ($40 + $20) and $90 ($50 + $40) per tonne of fuel oil, or less if the quantum of the flat rate (levy-based) contribution to the IMO fund was set below $40 per tonne of fuel oil (i.e. less than about $12.5 per tonne of CO_2 (or CO_2e) emitted).

20 It should be noted that a contribution quantum to the IMO fund equivalent to somewhat less than $40 per tonne of fuel could still be sufficient to achieve the objectives of the economic measure if the proportion of total funds collected annually that was allocated for use by developing countries in the initial years of implementation was lower than that tentatively suggested by ICS in document ISWG-GHG 14/3. This is because until a "take-off" point for the production and uptake of low- and zero-GHG fuels has been achieved, substantial funding to support the production of new fuels and the rollout of bunkering infrastructure in developing countries" ports may not be required until after 2030.

Conclusion

21 Subject to a comprehensive impact assessment, and depending on how the basket of measures is designed, the combined economic impact on States in 2030 of implementing both the IMSF&R (Fund and Reward) mechanism (economic measure) and a simpler Global GHG Fuel Standard (technical measure) – which together, but not on their own, could achieve the objective of accelerating the production and uptake of low- and zero-GHG fuels to achieve a "take-off point" by 2030 on a pathway to net zero, mid-century – could potentially be significantly less than $60 per tonne of fuel, which according to the Clarksons Research analysis would have no disproportionately negative impacts on States.

Proposals

22 In view of the above, ICS suggests that the Group recommend to MEPC 80 that the basket of measures to reduce GHG emissions from international shipping to be developed and finalized in Phase III of the Work plan with a view to approval at MEPC 81 and adoption at MEPC 82 should include:

.1 an economic measure (such as that set out in document ISWG-GHG 14/3) which should be as simple as possible to implement and based on a flat rate (levy-based) contribution system that will provide, via an IMO fund, rewards (feebates) to ships that use eligible alternative fuels, as well as providing support to GHG reduction efforts in developing countries, especially SIDS and LDCs; and

.2 a technical measure (such as that set out document ISWG-GHG 15/3/6) which should be as simple as possible to implement and include a GHG Fuel Standard in terms of maximum GHG intensity of fuel to be used on board ships.

23 ICS further suggests that the Group recommend to MEPC 80:

.1 that the contribution by ships to an IMO fund should be set at a quantum which will avoid disproportionately negative impacts on States, and that the cost gap between low-and zero-GHG fuels and conventional fuels should be narrowed by providing rewards to the relatively small number of ships that would be using eligible alternative fuels during the initial years of implementation of the measure (up to 2030) so that the initial quantum of the contribution would thus be far smaller than the price gap whilst still achieving the goal of narrowing the price gap, sending a clear signal to energy producers, fuel suppliers and shipowners that will accelerate the production of low- and zero-GHG fuels;

.2 to further consider the refined IMSF&R (Fund and Reward) measure as set out in document ISWG-GHG 14/3 and the identified core elements as set out in paragraph 35 of that document, with a view to agreeing to recommend that these core elements should be further developed and finalized under Phase III of the Work plan together with the necessary regulatory framework, so that the measure might be approved at MEPC 81;

.3 that a decision on which alternative fuels might be eligible for rewards for CO_2 (CO_2e) emissions prevented should be deferred until Phase III of the Work plan, and that a final decision about the treatment of upstream emissions and whether or not the calculation of contributions/rewards should initially be based on Tank-to-Wake emissions only should be deferred until Phase III when the LCA guidelines will have been further developed;

.4 to note the variables which, under the refined IMSF&R measure, might be used to determine the quantum of the flat rate contribution by ships to an IMO fund as summarized in paragraph 38 of document ISWG-GHG 14/3; and

.5 that, with a view to being in a position to commence, as soon as possible, a comprehensive assessment of the proposals" combined feasibility, effectiveness and impact on States, to note for further consideration in Phase III the package of possible draft amendments to MARPOL Annex VI (plus the associated draft guidelines) to implement both the IMSF&R mechanism and the GFS as set out in the annexes of documents ISWG-GHG 14/3 and ISWG-GHG 15/3/6, plus the initial impact assessment contained in document ISWG-GHG 12/3/8 and the additional information about the combined impacts of the basket of measures included in this document.

Action requested of the Working Group

24 The Group is invited to consider the information set out in this document, in particular the proposals set out in paragraphs 22 and 23, and to take action as appropriate.