An overview of the discussions from IMO ISWG-GHG 16

Read out from UMAS

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Preface

This report has been written by a team of experts from UMAS. The views expressed are those of the authors and not the organisations that enable their attendance at the IMO debates (IMarEST, EDF and CSC).

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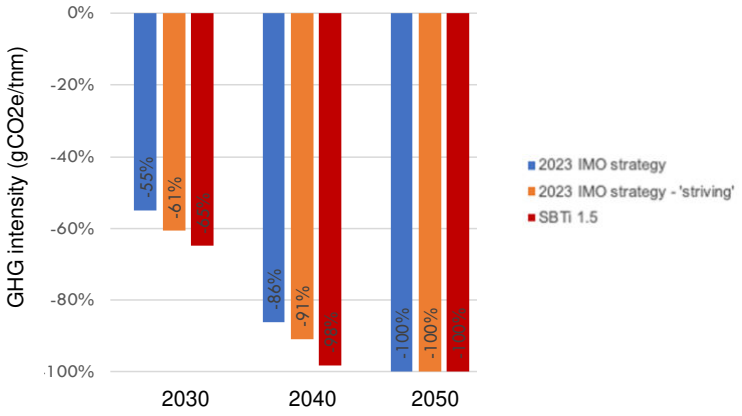
Executive Summary

The Sixteenth Meeting of the Intersessional Working Group on Reduction of GHG Emissions from Ships was the first convening of the IMO following the adoption of the Revised GHG Strategy in July 2023 (refer to the UMAS FAQs on the Revised GHG Strategy and its implications on national, regional and corporate action for detailed analysis of the Revised GHG strategy)

Although it was already agreed in that Revised GHG Strategy to work to adopt both a GHG Fuel Standard (a mandate on GHG intensity of fuel/energy), as well as a GHG pricing regulation, the IMO secretariat and member states now have the unenviable task of reaching agreement on how to convert the ambitions and objectives of the Revised GHG Strategy into specific and detailed regulation. This is a process that IMO has committed to finalise within the next ~12 months (agreement on MARPOL amendment language is scheduled for MEPC 83 which is in Spring 2025). It is hard to overstate the significance of what might be agreed in Spring 2025. The specifics of these policy measures will determine the 'shape' of international shipping, capital flows in the maritime value chains and have major implications for the economies of many countries and global trade. Given this significance, ISWG-GHG 16 provides some important clues on where preferences are developing. However, this is still an early stage in the debate, with key evidence of the impacts and costs of different policy specifics expected this summer, and with so many interconnected moving parts, a 'scenario' view e.g. considering a range of scenarios of potential outcome is still needed.

However, whilst the specifics of the MARPOL language might remain hard to second-guess, there is already greater clarity on the need for the sector to undertake a rapid technological change. One key detail has clarified at ISWG-GHG 16 – that the GHG intensity limits of the GHG Fuel Standard (now referred to as a "goal-based marine fuel standard") will be set according to both the GHG reduction targets and the indicative checkpoints. The term 'indicative checkpoints' was dismissed by many at the point of adoption of the Revised Strategy in 2023, as being too vague. But now linked explicitly to the specification of the fuel standard, there is now an urgent need for the sector and its value chain to position its assets to achieve at least an ~90% reduction in GHG emissions intensity (e.g. gCO2e per unit of transport work, tonne-nm) by 2040 as shown below[1].



GHG intensity trajectories from the IMO Revised GHG strategy and 1.5ºC trajectories

For the way this fuel standard might be complemented by a GHG pricing mechanism, there is an approximately even balance of member states supporting three different architectures:

1. 14 countries, primarily but not limited to middle income economies, expressed a preference for a fuel standard which includes flexibility (referred to as credit trading mechanism or Emission Trading System ETS), and with no further GHG pricing mechanism e.g. levy

[1] UMAS (2023) Implications of the Revised IMO GHG Strategy for national, regional and corporate action, available at https://www.u-mas.co.uk/wp-content/uploads/2023/09/MEPC-80-implications-of-the-IMO-GHG-strategy-add.1.pdf

2. 18 countries, primarily but not limited to SIDS and LDCs, expressed a preference for a simplified fuel standard which excludes flexibility, working in combination with a universal GHG price e.g. a levy
3. 16 countries, primarily but not limited to developed economies, expressed a preference for a fuel standard which includes flexibility (credit trading mechanism or Emission Trading System ETS), and a universal GHG pricing mechanism e,g, a levy

Although all of these options would generate revenues, there were also a number of differences between member states on how those revenues should be disbursed. These differences are broadly consistent with differences that have been expressed in previous rounds of discussions on mid-term measures and GHG pricing. The differences are not surprising or abnormal given the meeting is not a decision point and therefore is not a point at which many member states will not be ready to compromise.

Relative to the debate at ISWG-GHG 15 in June 2023, the count on the number of countries supporting a universal GHG price has shown a small increase in absolute terms, and a larger increase in percentage terms (percent of those member states supporting). Perhaps most significantly, it showed a significant growth in support from SIDS relative to the ISWG-GHG 15 debate.

Overall the meeting therefore has continued to progress the finalisation phase, albeit without a decisive shift in the landscape of positions and preferences, whilst also retaining progress in line with agreeing specifics at MEPC 83 in June – a commitment reiterated by member states with a range of different preferences on specifics.

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1 Introduction

ISWG-GHG 16 is the first all-member-state IMO negotiation session since MEPC 80 (July 2023), where the revised Greenhouse Gas Strategy was adopted. It also marks the first negotiation in 'phase III', the finalisation phase of the workplan (MEPC 76/7/10) for the adoption of mid-term measures. The finalisation phase is scheduled to reach the completion of a 'clean' text on the MARPOL amendments at MEPC 83 in Spring of 2025, which can then be adopted at the subsequent MEPC meeting for (possible) entry into force of these new policy measures in 2027.

ISWG-GHG 16 takes place the week immediately preceding MEPC 81, and this working group informs the discussions in the committees. The ISWG-GHG 16 agenda and submissions covered three topics:

- Further consideration of candidate mid-term measures
- Further development of the Life Cycle GHG Assessment framework
- Consideration of proposals related to onboard CO2 capture

Of these three topics, the negotiations were dominated by the topic of mid-term measures, which this overview focuses on. It includes estimates of member states' different positions in the debate on measures, as well as descriptions of the landscape of perspectives they describe.

Unlike MEPC 80 which was a decision point for several key processes, including the adoption of the Revised Strategy, MEPC 81 does not have key decision points (e.g. a point where a final decision is needed on any measure parameters), but is a continuation of the negotiations on the application of the GHG strategy and further progress of possible implementing mechanisms (i.e. a levy).

The evolution of the IMO GHG debates to this point of time and the positions taken at ISWG-GHG 16 can be compared with reports on previous meetings, found in previous reports[2].

1.1 Progress on key items remains on track for agreement/adoption in 2025

The negotiations at MEPC 80 in July 2023 adopted a revised strategy. The revision upgraded the IMO's guiding GHG reduction objectives (20% striving for a 30% reduction in well-to-wake (WtW) GHG emissions in 2030, 70% striving for an 80% reduction in WtW GHG emissions in 2040, and 100% reduction by/around 2050, all on 2008 baseline year), narrowed the specification of mid-term measures to a GHG pricing mechanism in combination with a GHG fuel standard, and set specific objectives for these measures, namely:

- Effectively promote the energy transition of shipping;
- Provide the world fleet with a needed incentive; and
- Contribute to a level playing field and a just and equitable transition.

Another outcome from MEPC 80 was the launching of a comprehensive impact analysis (CIA) process, and an overseeing steering committee (SC). A completed CIA is a key pre-requisite before any mid-term measure can be agreed upon and adopted, primarily because it evaluates one of the key risks for member states - the extent that states will be impacted by the GHG policy measures applied to global/international shipping. This then informs the debate on whether/how any negative impacts would be addressed in the finalisation of policy measures. In order for the agreed timeline to be met, the CIA process needs to finalise its analysis in advance of MEPC 82 in Autumn 2024.

The SC has met five times to date. At MEPC 80, no agreement was negotiated on the specifics of the mid-term measures, so a large range of potential mid-term measure designs has been pushed into

[2] Available at www.umas.co.uk/latest

Phase III, which means that the CIA process has to handle a broad range of policy options in its analysis. This is particularly difficult for two reasons:

Firstly, the CIA process evaluates, for a range of policy measure specifications, the impacts on fleets/states using computer models of the techno-economics of international shipping's GHG reduction (by DNV), and calculates the changes in costs, as well as the GHG pricing revenue, which is then used as an input to economic modelling of impacts on states (by UNCTAD). Further case study analysis of the impact of policies on specific countries and commodity trade, using the outputs of DNV and UNCTAD's work, is then undertaken (by Starcrest).

This explains that whilst ISWG-GHG 16 provides useful insight into the landscape of member state positions around different specifications for the mid-term measures, in practice there is significant interplay between the ISWG/MEPC debates, the SC debates, and associated technical work.

ISWG-GHG 16 started with report-outs from each of the organisations leading different components of the CIA work, and the work was reviewed and discussed by member states. All organisations have started work, but no organisation had developed detailed outputs at this point, and so only presented descriptions of their analysis methods or in some cases (DNV) some early but immature results.

Secondly, in order to take into account the range of member state preferences, the modelling is being done in several phases/steps and for multiple scenarios of policy specifications for both the GFS and GHG pricing mechanism. Results from the first phase/step will inform the selection of policy parameters for the second phase/step scenarios. Based on presentations and discussions related to CIA, these remain on track for:

- First phase/step in May
- Second phase/step in July

ISWG-GHG 16 also discussed and agreed to further develop (for finalisation at MEPC 81 next week), the specifics of an expert workshop that discusses these findings and possibly also the topic of revenue disbursement, as well as to schedule a further ISWG-GHG 17 in advance of MEPC 82.

Given this progress reported to date, and the plans presented for further work on the CIA, and the planning for further expert and ISWG-GHG meetings this summer, the chair summarised that the development of measures remains on track for agreement/adoption in 2025 as planned. This progress also means that there should be an extensive set of evidence produced to inform the member state discussion at MEPC 82 (scheduled for 30th September to 4th October).

2 Development of candidate mid-term measures

The debates were a continuation of a range of preferences of the parameters for the mid-term measures but given the discussions within the working group forum these gained momentum. ISWG-GHG 16 contained a substantial discussion of member state's preferences of the different parameters that define the GFS and GHG pricing mechanism. Whilst all who spoke confirmed the intent to have both policy elements included in the MARPOL amendments adopted in 2025, there remained a range of positions across some of the key specifications including:

- Whether GFS should be applied through a TtW or WtW limit e.g. whether the IMO should mandate a limit only on the GHG intensity (GHG emissions per unit of fuel/energy combusted) from the fuel/energy use on the ship (TtW) or from both the ship and the fuel/energy production and supply chain e.g. a lifecycle basis (Category A)
- Whether or not the GFS would set a minimum GHG intensity that every ship would have to achieve, or a level for the average of the fleet – allowing ships to trade or pool their emissions and balance out underperforming ships with overperforming ships or with other compliance mechanisms (Category B)

- What form GHG pricing should take, including:
  - GHG pricing as a component within a GFS flexibility mechanism only (a credit trading or emission trading system ETS),
  - or two GHG pricing mechanisms (a GFS with credit trading and a universal price on GHG emissions as referred to as a levy),
  - or a simplified GFS without credit trading, in combination with a universal price on GHG emissions (levy). (Category C)
- The allocation and purposes of revenues generated by GHG pricing (Category D)

2.1 Summary of positions

Figure 1 and 2 show estimates of the number of member states who expressed positions according to different specifics and choices for defining the technical and economic elements of the mid-term measures. These counts could all change at MEPC 82, as the results from the CIA will provide important evidence that may indicate differently from member state's current assumptions of how they will be affected by different specifics. However, they provide at least an update/report on where the current positions are. The discussion of debates for each of the categories of decision parameters (A,B,C) as well as Category D which refers to revenue disbursement categories, are described in Section 2.2-2.5.

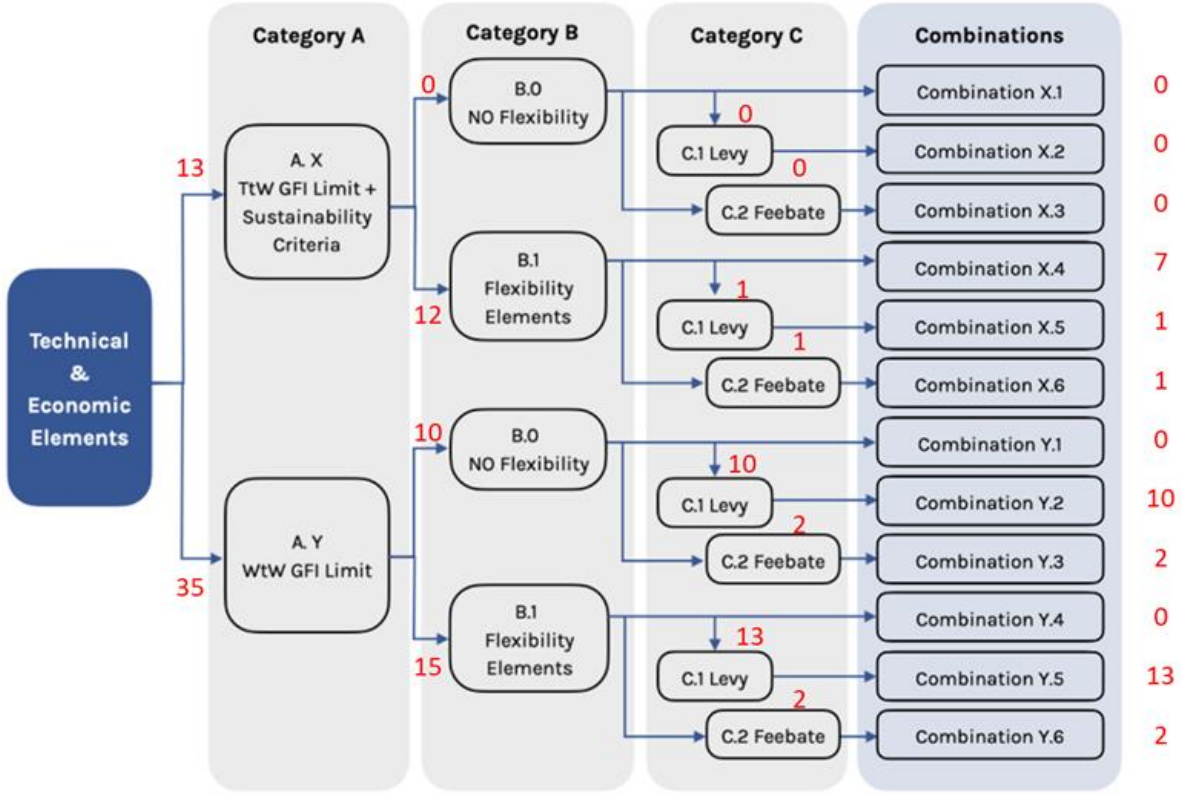

Figure 11: Number of countries supporting each measure and it's variants (disaggregated counts)[3]

[3] a. The numbers do not total up because one country could express their opinion on one category, but not the following ones (e.g. opinion on category B but not on category C); and one country could express support for two measures at the same time (e.g. levy and feebate).
b. Levy includes levy and separate pricing mechanism from flexibility mechanism

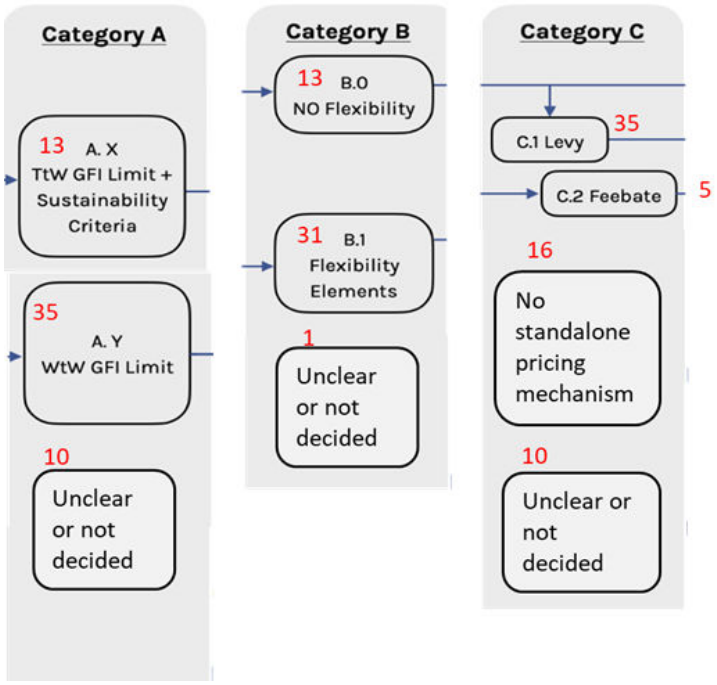

Figure 22: Total number of countries supporting each measure and its variants (aggregated counts)[4]

2.2 Category A – GFS

One of the main parameter/specification details debated for the GFS is whether the GHG emissions should be calculated on a TtW or WtW basis. The distinction is critical as it signifies how fuel/energy choices will be incentivised by the GFS – with the risk that a TtW basis would have perverse incentives due to over-crediting the GHG reductions achieved when using biofuels and hydrogen-derived fuels produced with high GHG emissions on land[5].

Bearing in mind that the IMO's 2023 Revised GHG Strategy has GHG targets and checkpoint language which specifies WtW GHG emission reductions. The summary for the week concluded that we would use a WtW basis. However, an evolution of the concept of a TtW GFS has also appeared as an "adjusted TtW". This increases the TtW emissions of different fuel options to a default high level (set by fossil fuels), as a function of their production processes. For example, grey/brown hydrogen (hydrogen produced from coal/oil/gas and without carbon capture at the point of production) derived fuels and all biofuels would initially be counted as zero GHG emissions. Gradually fuels with higher WtT (well-to-tank) so upstream emissions and/or lower sustainability criteria, would be increasingly penalised, such that by a certain point (e.g. 2040-2050) the adjusted TtW of all fuels was essentially the same as a WtW emissions factor. Whilst only a minority of member states supported this 'adjusted' TtW concept, it remains under consideration and will continue to be modelled in the CIA. The CIA modelling will help to evidence whether or not such an approach could achieve the IMO's 2023 Revised GHG Strategy targets (including its checkpoints), as well as the fuel mix and evolution of fleet and fuel/energy over time, that it incentivises.

Basic counts based on the debates this week shows that most of the countries who have expressed an opinion are in favour of a WTW approach (35), while some member states supported an adjusted TTW approach (13), and 10 did not have a clear position.

[4] a) Levy includes levy and separate pricing mechanism. b) Several countries have supported both a levy and a feebate.

[5] Although biofuels in some accountancy frameworks would have a high TtW emission (which would exclude the reductions in GHG emissions associated with their production), the way the IMO LCA Guidelines have defined the accountancy of biofuels under TtW, includes a broad representation of the negative WtT emissions and assumes they have zero GHG emissions.

Besides this, the debate confirmed that the GFS trajectory (e.g. the rate of reduction in GHG intensity over time) should be guided not only by the target to reach zero around 2050, but also by the interim targets (checkpoints) which are for the absolute GHG reductions of at least 20% striving for 30% in 2030, and 70% striving for 80% in 2040, both on a well-to-wake all GHG emission basis on 2008 levels. This helped to clarify a point that many raised concerns on in 2023 – that the phrase 'checkpoint' lacked the certainty of obligation compared to some of the wording that could have been chosen. Given the GFS MARPOL amendment and the GFI specification contained therein is the language that sets the regulatory obligation, this clarification that GFI is set according to the checkpoint reductions means that international shipping has higher certainty that they should be preparing to be mandated/regulated in line with the 2030 and 2040 checkpoints, not only the 2050 target.

2.3 Category B – Flexibility

This category looks at whether or not the GFS would set a minimum GHG intensity that every ship would have to achieve, or a level for the average of the fleet – allowing ships to trade or pool their emissions and balance out underperforming ships with overperforming ships or other compliance mechanisms.

The debate revealed a majority of member states (31) who spoke preferred the use of a flexibility mechanism as opposed to no flexibility mechanism (13). Two important further findings from the debate are [1] that there remains a broad range of preferences for the specification of the flexibility mechanism, and [2] that there remain concerns about how the flexibility mechanism might impact different states. Flexibility encompasses whether individual ships will each need to meet a minimum GFI requirement, or whether they will be able to average out their performance with other ships to ensure the GFI achievement overall. The subject also encompasses the potential compliance options and therefore enforcement options. The parameters of the flexibility debate include:

- Whether or not to have credit trading between over/under-performing ships (referred to as ETS);
- Whether or not to have a payment of a GHG price as a compliance mechanism (as a mechanism in addition to credit trading between ships);
- Whether or not to allow private compliance pool (e.g. whether ships can report 'as a fleet' without needing to have the specifics of their intra-pool trading monitored by an IMO data system/framework).

On the first of these subjects, whilst there is a majority of countries who spoke in the debate preferring credit trading be incorporated into the GFS, there were two types of concerns being raised against this concept. First, the level of complexity that this creates, increasing administration burden for states while also making it more complicated for the industry and members of shipping's value chain to manage the commercial risks and opportunities. Second, was the risk of being primarily credit buyers rather than credit sellers – and therefore that credit trading constitutes an economic transfer between states and shipping in different circumstances. These concerns are countered by advocates for credit trading suggesting that the mechanism will be important for managing the uncertainties of how supply chains for different fuels will evolve (including geographically e.g. where bunkering evolves), as well as how the fleet composition (e.g. including of dual-fuel ships compatible with different fuels) will evolve. These points help to explain why there remains a split between countries of different income levels (least developed countries expressing concerns that they would primarily be credit buyers increasing existing inequities), and within industry (industry NGOs with members with more familiarity of EU ETS or predominantly larger, consolidated players in the shipping value chain were in some cases more comfortable and supportive of a credit trading mechanism than other industry NGOs).

Similarly, many member states who supported that in the event of non-availability of credits, or absence of a credit trading system, an alternative compliance mechanism could be a payment for non-GFI-compliant GHG emissions. There was no specific discussion of the level of that payment, with some variation in views on whether it should be set high enough to dissuade all but a very small amount of

this mechanism's use for compliance, or at a level closer to the cost of compliance – therefore providing some potential for this to generate revenues (see Category D). There was also some discussion on whether or not a FONAR (fuel oil non-availability) or equivalent, either in isolation or in combination with a payment for non-GFI-compliant GHG emissions, could be a way to manage the scenario of non-availability of compliant fuel (e.g. in certain bunkering locations).

A minority of member states who spoke on the subject of flexibility supported some form of private-compliance pool (in combination with a public compliance pool). For example, groups of ships under some commercial framing/entity that in combination submit their aggregated/averaged GFI to show that as a pool they are in line with the GFI requirement.

2.4 Category C – GHG pricing

The GHG pricing debate was undertaken in two rounds. This is because some of the proposed flexibility mechanisms considered under Category B are considered as GHG pricing mechanisms. However, reinforcing the agreement at MEPC 80, all member states agreed that there should be some form of GHG pricing, with the debate therefore centred on what the parameters of the pricing mechanism should be.

One of the main parameters under consideration was whether the GHG price should be applied only for emissions 'above' the GFI limit (e.g. from an underperforming ship), or for all GHG emissions e.g. a 'universal' GHG price applied to all GHG emissions including all GHG emissions of ships in compliance with the GFI limit of the GFS. This therefore intrinsically linked the GFS and GHG pricing debates. This helps to explain that there are broadly three groupings of countries with different preferences for the measure architecture defined by a combination of Category B and C choices:

- 14 countries, primarily but not limited to middle income economies, expressed a preference for a GFS which includes flexibility and a credit trading mechanism (Category B), and with no further GHG pricing mechanism (Category C)
- 18 countries, primarily but not limited to SIDS and LDCs, expressed a preference for a simplified GFS which excludes flexibility and a credit trading mechanism (Category B), working in combination with a universal GHG price e.g. a levy (Category C)
- 16 countries, primarily but not limited to developed economies, expressed a preference for a GFS which includes flexibility and a credit trading mechanism (Category B), and a universal GHG pricing mechanism (Category C)

There were a further 10 countries from a range of income levels who were either unclear in their preferences or expressed no strong preference in the debate on GHG pricing and openness to more than one specification. These were not counted in the above categories but may evolve their position to a clear preference in a future debate. Because of the mixed circumstances and composition of this group, it remains hard to categorise where they might eventually position themselves, but it looks unlikely that they would all group into one of the three of the above preference positions.

To compare the debate at ISWG-GHG 16 in March 2024 with the debate at ISWG-GHG 15 in June 2023[6], a similar number of member states have spoken in both debates (slightly more at ISWG-GHG 15, perhaps because of the salience of MEPC 80), though with some difference in the geographical composition. At ISWG-GHG 15, 33 countries supported a universal GHG price on GHG emissions, 13 supported GHG pricing being integrated into the GFS without a separate universal GHG price, and 22 member states did not express a clear preference on which of these they preferred (though within this group several expressed a preference against a GHG levy, without expressing what they would prefer instead). The count on the number of countries supporting a universal GHG price has shown a small increase in absolute terms, and a larger increase in percentage terms (percent of those member states

[6] An overview of the discussions from IMO ISWG-GHG 15, Read out by UMAS, available at https://www.u-mas.co.uk/wp-content/uploads/2023/06/ISWG-GHG-15-overview-UMAS-1-1.pdf

supporting). Perhaps most significantly, it showed a significant growth in support from SIDS relative to the ISWG-GHG 15 debate.

Whilst the dominant term used to describe a preference for a universal GHG price was 'levy' (22 member states used this), some also used the word 'contribution' (3 member states), others 'feebate' (2 member states) and some 'reward' (6 member states). This could reflect that the term 'levy' has connotations when translated - e.g. in some translations, it can imply 'tax' which then can create national legal and political obstacles. Note that some of these (e.g. 'feebate' and 'reward') imply revenue uses and so are discussed in more detail under Category D.

In the debate on GHG pricing, all countries who spoke on the subject stated that the GHG pricing mechanism should aim to reduce GHG emissions (including giving the justification that this is the pre-requisite for the GHG pricing measure to be implemented within MARPOL and not in a new convention that might considerably delay entry into force).

2.5 Category D – Revenue disbursement

All GHG pricing mechanisms proposed and discussed develop some level of centralised revenues – and therefore raise the issue of disbursement. The difference expressed by many member states is that a GHG pricing mechanism integrated into a GFS as a flexibility mechanism has greater revenue magnitude of uncertainty, because the centralised revenue is a function of commercial decisions regarding how to comply with the GFI limit. A universal GHG price would generate more predictable total revenues, with an expectation that this would be informed by the pathway of GHG emissions specified by the targets in the IMO's 2023 revised strategy.

There was no detailed debate at ISWG-GHG 16 on the quantum/level of the GHG price, and so no debate on the total revenue magnitude. But initial/starting levels of a GHG price expressed by some member states included $20 and $150 per tonne of CO2e. The CIA process is modelling a range of scenarios of GHG pricing including [1] no GHG pricing, [2] a starting GHG price of $30 rising to $100 over time, and [3] a constant 'flat' GHG price set at $100. But these initial scenario values do not limit the values that might be chosen in further rounds of modelling. The total magnitude of initial per annum revenues needing disbursement could therefore be anywhere between zero and $50bn or greater.

One of the common phrasings in the debate, albeit undefined, is between revenue disbursement in-sector (e.g. within maritime) and out-of-sector. On this there was a preference expressed for in-sector revenue disbursement (27 member states), with others (10 member states) expressing a combination of in-sector and out-of-sector use. Many member states delimiting revenue use to in-sector only argued that revenues generated at the IMO were not eligible for spending on 'UNFCCC' uses (e.g. general mitigation, adaptation purposes).

As a more detailed classification, but with the caveat that the definition still needs clarity, and therefore hard to compare with the 'in-sector' vs. 'in and out-of-sector' use of numbers, member states had varied use of different terms to express where they thought the revenues should be deployed including: equitable transition (10), just and equitable transition (4), addressing disproportionately impacted states (13), and general mitigation and adaptation purposes (8).

This debate therefore remains very hard to read an overall categorisation of preference for or indeed whether revenue disbursement for addressing disproportionately impacted states is considered to be 'in-sector' and what the limits of in-sector might be for those using this term (e.g. the ship, the shipyard, the port, the equipment manufacturer, the facilities training seafarers, the fuel production and supply chain, the broader services (including social services) supporting all of the above etc.).

Related to the lack of clarity on areas of revenue disbursement is the subject of revenue disbursement management (or fund management). Only 12 member states added a point in their interventions on this

topic, of those who spoke most mentioned the IMO as their preferred organisation to manage disbursement.

The CIA process which is ongoing, includes modelling of scenarios that include revenue disbursements with a variety of uses and a variety of ways in which revenues for different purposes should be allocated to different member states. In the absence of clarity, this will at least provide some input for future debates on the subject, so that it can make progress (which is essential if there is to be an agreement/adoption of any revenue-generating GHG pricing measure in 2025).

The lack of debate, or indeed a structure for debate, on the subject of revenue disbursement to date explains why there was also a proposal to hold a dedicated expert workshop on the subject. This has been proposed to take place in the summer of 2024 prior to MEPC 82. Although the discussion on this had a split of views (13 member states supported having a workshop, 12 countries thought it was too soon), a two-day workshop will be further discussed at MEPC 81 next week.

3 Development of Life Cycle GHG Assessment (LCA) framework and discussion on onboard carbon capture and storage (OCCS)

The discussion on LCA was not a deep discussion, or conclusive of the issues that still need to be resolved, given that much of the week was centred around mid-term measures. However some of the key takeaways include:

- There was a split between countries supporting default (global and regional) actual (localised) forms of Emission Factors (EF). However, there was general agreement that an expert working group should be set up to work on this.
- There were specific mentions to the appropriate characterisation of engine emissions in operation vs testbed only and for existing (LNG) and upcoming fuels (NH3).
- There were several references to a recent report that highlights an under characterisation of emissions from LNG vessels. This was followed by an intervention highlighting that this work presented shortcomings in the characterisation method (using drones), that it targeted operational circumstances that do not meaningfully represent the standards of operation of the LNG fleet and that it did not capture engine/machinery optimisation alternatives. The proponents/authors of the report responded that it did consider those aspects and that more details would be presented during MEPC81 next week.

Similarly, the discussion on onboard carbon capture and storage (OCCS) was brief relative to discussion of mid-term measures. The debate on whether to develop regulations to account for OCCS and their urgency needs to be balanced with other workloads. Several references in interventions were made to empirical data on OCCS in a Norwegian pilot case study. The empirical evidence shed further light on the balance between possible benefits and costs of OCCS in relation to additional fuel costs. Many member states supported initiation a study on OCCS capture systems. Other interventions included the importance of considering the timely development of reception facilities, adequate regulatory frameworks, timely certification cycles and the need for OCCS to be captured within a lifecycle assessment guidelines framework, among others. Emphasis was made on the possible need to coordinate work with that of MSC. The discussion was concluded with the announcement that there was broad support for proposals on the table with agreement to instruct the Working Group on Air Pollution and Energy Efficiency (to be established during MEPC 81) to develop a work plan for a OCCS regulatory framework.