An overview of the discussions from IMO MEPC 81

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 MEPC 81 meeting concluded on 22nd March 2024, further clarifying the risk and opportunity both for the international shipping value chain's commercial decision making, and for this sector's contribution to minimise the risks of dangerous climate change. The meeting itself was not a point of adoption for measures, but it was a chance to test whether the member states of the IMO were as committed to advance and implement policy measures capable of delivering the Revised GHG Strategy adopted 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).

Key outcomes and insights from the meeting include:

- **New chapter initiated** – Annex VI of MARPOL now has a very early draft of a new chapter (Chapter 5) – "regulations on the IMO net-zero framework". This new chapter is just a framework of subheadings for now, but includes all the structure needed to adopt any of the GHG policy options currently under consideration (Goal-based Fuel Standard, flexibility mechanisms (a type of economic measure that involves credit-trading like an ETS), GHG levy, fund management and revenue disbursement, further details can be found in the ISWG GHG 16 readout).
- **Unanimity of member states endorsing the new chapter** – IMO does not need to make decisions by unanimity, but it helps the future work if that is the case. Previous negotiations on short-term measures were more fractious and difficult in the run up to agreement/adoption – similarly so was the initial strategy negotiation that was ultimately not supported by all countries. Building on the unanimity associated with the adoption of the Revised GHG Strategy, the new MARPOL chapter was well received by all countries which is a positive signal for further cooperation.
- **The fate of energy and equitable transition are coupled** – The MEPC 81 debate largely reiterated points that had previously been heard at MEPC 80, with polarisation around whether or not to implement a GHG levy (referred to as universal GHG price), which would incentivise lower GHG emissions whilst also guaranteeing the raising revenues for deployment towards both, the energy transition (e.g. the transition), and equitable transition (including but not limited to a technologically inclusive transition). Encouragingly for both the energy and equitable transition agendas, there was positive momentum built at the meeting, with an increased number and diversity of countries supporting a GHG levy.
- **General lowering of risks to timely and robust policy** – The IMO had already committed in its Revised GHG Strategy to reach agreement at MEPC 83 (April 2025), adoption by the end of 2025, and entry into force of the new MARPOL chapter's regulations in 2027. The meeting progressed a range of topics that are all pertinent both to the timeliness, e.g. whether or not the IMO will succeed in meeting that timeline, and robustness of the agreement on policy measures. The meeting evidenced that risks on both items have reduced, but still remain - given the complexity and novelty of policy-design work the IMO is undertaking.
- **There's a clarifying calendar for the remaining work** – Thanks to the information in the Revised GHG Strategy, there was already some clarity on the timeline up to the points of agreement/adoption in 2025. However, the meeting has clarified both an expert workshop (on the modelling and analysis base of the measures), and the agenda for the next IMO Working Group meeting (late September), which has been setup to advance the substance and detail in the new MARPOL Chapter 5 drafting.
- **The risk to 'wait and see' just increased again** – Although the direction of shipping's transition was primarily set at MEPC 80 with the Revised GHG Strategy, any transition creates uncertainty and risk relating to timing. Investors in the assets (the fleet, infrastructure such as ports, energy supply chains) that enable both the incumbent fossil fuel paradigm, and that will be needed in the future zero GHG emission paradigm, face both technology risk (uncertainty about which zero emission technology will be most competitive and when), and political risk (uncertainty about exactly how policy will disincentivise fossil fuels and incentivise zero emission fuels). One risk management

strategy is to ‘wait and see’ so that decisions are only made when certainty has arrived. However, this is not risk-free as at the same point when the fate of fossil fuel technology becomes absolutely clear, and/or the opportunity for zero emissions technology becomes absolutely clear, opportunities to manage risks related to asset disposal values and to take future market share opportunities will have already been passed over. The meeting’s generally progressive outcome, and politically collaborative spirit, evidences that the risks of ‘wait and see’ have further increased.

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1 Introduction

The MEPC 81 meeting concluded on 22nd March 2024, further clarifying the risk and opportunity both for the international shipping value chain's commercial decision making, and for this sector's contribution to minimise the risks of climate change. The meeting itself was not a point of adoption for measures, even though for many, that point of adoption cannot come soon enough – given the capital-intensive and long-life of the assets of the sector, the importance of shipping to world trade and development, and the significant and accelerating climate impacts that are increasingly evidenced around the globe[1].

The meeting was instead a chance to explore whether the member states of the IMO were as committed to advance and implement policy measures capable of delivering the Organisation's 2023 Revised GHG Strategy, as they were to adopt a commitment to deliver a progressive transition of international shipping (the Revised GHG Strategy itself).

Analysis of the meeting can therefore help to examine both what opportunity lies ahead, but also the current status of risks that might undermine that opportunity. This report attempts to structure those opportunities and risks and share some of their specifics by identifying what progress was made against them at this meeting. The resulting picture is one of clear progressive momentum, but multiple points of potential failure. This also then explains why so many different interpretations of the meeting are possible – it is easy to highlight risks, for example, if wanting to reinforce a pessimistic narrative or if trying to justify 'waiting to see' what actually gets adopted at the end of 2025. However, for the very reason that both fleet and infrastructure enabling international shipping are capital intensive long-life assets, and because of the now very short-timescale over which the IMO has a clearly stated intent to fundamentally revise these assets, the risk of the 'waiting to see' strategy, and ending up being poorly prepared for a rapid transition and reconfiguration of international shipping, has also once again increased.

The key dates/milestones related to the further work and finalisation of mid-term measures provide an important guide to when further insights and risk/opportunity analysis is likely to be possible:

	Timing	**Implication/relevance**	**Certainty**
Draft reports from the CIA process	End June/July 2024	Whilst it may or may not be the conclusion of the CIA process (it is the expected conclusion, but there may be extensions if further analysis is requested), this at least is a milestone at which significant.	Moderate (process is on track, but it is complex)
Expert workshop	July	This will be a discussion primarily informed by the reports from the CIA process, and a chance to see whether the outputs of CIA have the potential to modify positions.	High (the workshop is an agreed outcome from MEPC 81)
Deadline for submissions to ISWG-GHG 17	Early August 2024	This is the point in time at which member states wishing to provide a written position into the debates will have to have done so. Shortly after the deadline the papers are available for other member states to see, so it provides a further chance to understand the landscape prior to the next negotiation.	High (the next working group and its agenda are an agreed outcome from MEPC 81)
ISWG-GHG 17 debate	End September	The outcome of MEPC 81 has provided a framework for the drafting	High (the next working group is an agreed

[1] IPCC (2023) Climate Change 2023: Synthesis report, available at https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf

		of MARPOL amendments (Annex VI Chapter 5), and this meeting has been identified at the first attempt to solidify some of the content within that framework.	outcome from MEPC 81)
Deadline for submissions to ISWG-GHG 18	Late February	Equivalent to ISWG-GHG 18 deadline – a point at which some of the member state positions going into the final agreement (MEPC 83) negotiations can be interpreted.	Moderate (the detail of how the time between MEPC 82 and 83 has yet to be defined. There may be different working arrangements, so this is uncertain and is on the assumption that a similar meeting pattern to that used to date continues to be used.)
MEPC 83	April 2025	The MEPC at which the IMO is currently scheduled to 'agree' e.g. have a 'final' draft of MARPOL amendment language that operationalises the GFS and GHG pricing policies	The certainty of the timing is high, but whether the meeting will reach an agreement is uncertain

2 The 1.5-aligned, equitable transition opportunity

MEPC 81 further improved the opportunity for an IMO-regulation-led transition of international shipping away from fossil fuel use. The meeting also retained and improved the potential for the transition to be equitable:

1.5-aligned – MEPC 80's securing of a Revised GHG Strategy was a key step forward in improving the clarity and ambition of IMO-led transition, which is one of the lower risk pathways to enabling a 1.5-aligned transition[2]. However, as was well noted at the time, the strategy is a resolution and not a policy mechanism – the strategy itself did not define the legally binding structures, only the framework on how those legally binding structures would need to be designed. To provide further evidence that shipping's transition would be 1.5-aligned, MEPC 81 needed to show that there was as much political support for the adoption of measures capable of delivering the strategy, as there was support for the strategy itself. The progress made in discussing the substance of the policy measures, the emergent narrowing down of policy measure options, as well as an agreement to draft amendment text are all good evidence reinforcing the chance that the sector's transition can still be 1.5-aligned. However, the IMO's Revised GHG Strategy remains as defined during MEPC 80 (this was not a meeting at which the overall GHG ambition was to be renegotiated), and therefore defined to a GHG trajectory that is ambitious, but still not '1.5' aligned[3]. Certainty of a 1.5-aligned transition remains dependent on a combination of national and broader stakeholder actions, as well as future 'upwards' revision of ambition when the IMO next revises its strategy (2028). But an important enabler for retaining the potential for a 1.5-aligned transition is the delivery and timely implementation of measures capable of delivering the IMO's 2023 revised strategy – which then clarifies the speed and strength of the IMO component of the transition and provides the impetus and confidence for the broader off-IMO actions.

Equitable – The concept of a just and equitable (JET) transition, 'leaving no one behind' was a key component of the IMO's debates in 2022 and 2023 and is enshrined in the IMO's 2023 revised strategy

[2] UMAS (2021) A Strategy for the Transition to Zero-Emission Shipping, available at https://www.u-mas.co.uk/shippings-transition-to-zero-emissions-future-is-complex-but-it-can-and-must-be-done-through-coordinated-action-across-stakeholders/

[3] 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

including that an objective of mid-term measures is to 'contribute to a just and equitable transition'. There is also a commitment to address Disproportionate Negative Impacts (DNI) on developing countries, particularly SIDS and LDCs. Whilst the DNI aspect of these equity issues is advancing in definition through the CIA process, the specifics of JET remain undefined and unagreed. This means that the equitable transition remains an opportunity, as well as being at risk. The justification of the increased opportunity comes from an increased number of SIDS attending and being vocal in the IMO's GHG debate. The meetings saw a significant increase relative to previous meetings. Many SIDS, sometimes joined by other lower income countries, are pointing to an equitable transition that should include both technological inclusivity (e.g. assistance with the transition), as well as equity with respect to climate impacts (e.g. recognising the role past, present and future GHG emissions from international shipping has in contributing to dangerous climate change). There are a broad range of national circumstances across lower income countries and risks that addressing one lower income country's opportunity for an equitable transition (e.g. the opportunity for revenues raised by a GHG pricing policy) increases the inequity for another low income country (e.g. for countries particularly sensitive to transport cost increase and unlikely to receive adequate revenues to compensate for this). The ability to reach a conclusion on an equitable transition is therefore likely to be dependent on whether the policy measures can find the way to be inclusive in maximising opportunity and minimising risk broadly across those circumstances.

3 The 1.5-aligned and equitable transition risks

3.1 Architecture opportunity/risk 1 – incremental or concurrent technology transition?

One of the unknowns going into the policy measure design process is the extent to which policy measures will be able to incentivise an incremental or concurrent transition[4]:

- **Incremental transition** – a transition in which it is very hard for any investor/owner/operator in shipping to make a business case to be an early adopter of zero emission shipping (e.g. the solutions that will be needed in widespread adoption in the 2040's). Instead, all stakeholders need to step through a sequence of transitional technologies/fuels/energy solutions (e.g. 'low carbon' fuels, biofuel, blue fuels, onboard CCS), and carefully manage the return on investments and asset stranding risks, given the short periods for which the technology/fuel/energy solution can offer competitiveness and compliance.
- **Concurrent transition** – a transition in which there is a good business case for early adoption of zero emission shipping in the late 2020s, whilst in parallel, the mass market has a longer time to manage its transition out of the current and incumbent technology/fuel/energy to zero emissions and with lower reliance on transition solutions.

The identification of which of these transitions can be expected, e.g. the incentives the policy measures will create, is a function of both the policy measure architecture (e.g. whether or not there is a GHG levy or universal price on GHG emissions, and how the revenues are deployed), and the parameters used to specify that architectures (e.g. the GFI, the GHG price, the revenue distribution).

[4] GMF & UMAS (2024) Unravelling IMO policy measures towards a just and equitable energy transition, available at https://cms.globalmaritimeforum.org/wp-content/uploads/2024/01/Getting-to-Zero-Coalition_Unravelling-IMO-policy-measures-towards-a-just-and-equitable-energy-transition-1-1.pdf

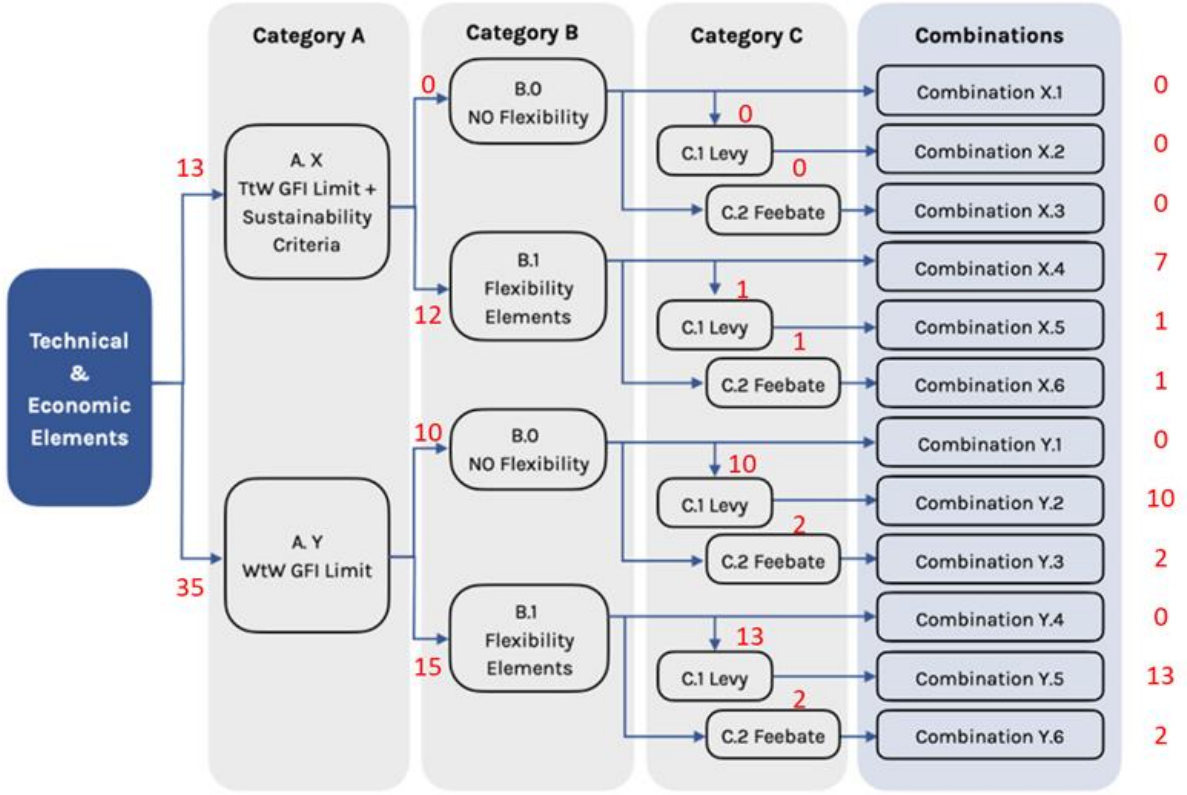

Figure 1: Number of countries supporting each measure and its variants (disaggregated counts)[5]

The ISWG-GHG 16 and MEPC 81 meetings are evidence of a narrowing down of policy measure designs/architectures. This narrowing down does not constitute a major change from the landscape of different measure concepts proposed by different member states at MEPC 80. However, the commonalities and differences are now more apparent, as is the support for the different policies. There could yet be significant shifts both in preferences and support – not least given key evidence from the Comprehensive Impact Assessment[6] is not expected until June/July, however the debates at ISWG-GHG 16 showed groupings of preferences of member states mainly around three potential architectures:

1. GFS with credit trading only (the credit trading mechanism as a GHG pricing measure)
2. GFS with credit trading and a GHG levy
3. GFS without credit trading and a GHG levy

Furthermore, the meeting delivered the first structure for the legal drafting (MARPOL Amendment) that includes a new MARPOL Annex VI Chapter 5 “regulations on the IMO net-zero framework”. This structure includes all of the components that would be needed for any one of the three potential architectures listed above as it includes:

- Chapter 5.1 – goal-based marine fuel standard regulating the phased reduction of the marine fuel’s GHG intensity (including the specification of GFI trajectories, how a ship’s attained GFI would be calculated, how compliance data is collected and reported, details of any alternative compliance)

[5] 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

[6] The Comprehensive Impact Assessment is a process being undertaken within five tasks, to generate evidence and model and analyse both the impacts on fleet, and the impacts on states that will arise from different policy measure designs. This includes modelling of the technology pathway and costs that occur for individual ship types, as well as how the costs of shipping influence the cost of trade and modify patterns of trade, as well as the extent to which those costs are affected by the redistribution of revenues generated from GHG pricing.

- Chapter 5.2 – economic mechanism(s) to incentivise the transition to net-zero (including specifics on the collection of economic contribution (e.g. carbon/GHG price level), flexibility mechanisms, management of revenue, distribution of revenue)

These outcomes are important because they keep a range of potential architectures 'on the table' for finalisation, including the GHG levy, which had received significant opposition at MEPC 80[7]. Furthermore, instead of being removed from the list of potential options, the GHG levy gained momentum from a growing majority (e.g. percentage) of the member states who spoke, and through an increase in the absolute number of member states speaking in support of a GHG levy at the meeting.

The GHG levy and the disbursement of revenues for the purposes of RD&D (research, development and deployment) and 'reward' for the use of eligible fuels (e.g. subsidy early in the transition of the long-run near-zero and zero GHG emission reduction solutions needed in the 2040's) remains a broadly supported mechanism that could enable a concurrent transition and help to reduce the risk of incremental transition. However, perhaps because of the strength of support for the GHG levy and this objective of concurrent transition, the meetings also heard proposals that even in the absence of a GHG levy, the GFS and its credit trading mechanism, could also be used to support early adoption (there was some discussion by proponents of a GFS and credit trading solution of using multipliers that increase the value of credits given to the more expensive zero and near-zero GHG emission solutions).

The other main difference between the options and their parameters remains the certainty and magnitude of revenues generated. Architectures with a GHG levy have a higher certainty of centrally collected revenue and are often associated with an expectation of a higher magnitude of revenues, increasing the strength of incentive created by the distribution of revenue. However, this is expected to come at an increase in cost, especially early in the transition, relative to architectures that do not have significant centrally collected revenue. Whether the benefits outweigh that additional cost will likely vary as a function of national circumstances, which is why the CIA is such a key input to further narrowing down and decision making on architecture.

3.2 Architecture opportunity/risk 2 – equitable or inequitable transition?

Closely related to the architecture incentive/risk related to the nature of the technology transition generally, is the risk of the transition's effects on different countries – does international shipping's transition increase existing inequalities and inequitability, or could these decrease? Some of the landscape on this risk is informed by the existing regional policies that are already in place and that increase the risk of an inequitable transition. EU's inclusion of international shipping in "Fit for 55" makes voyages in, out and within the EU subject to GHG regulation, including the payment of a GHG price, revenues from which EU countries then manage[8]. However, there is also a risk to equitable transition from IMO regulation. Policy that mandates a change and does not include any support for an inclusive transition will tend to be more easily complied with by those with access to capital, and those with the lowest cost capital. Typically, access to capital and to low cost capital is greater in developed economies. The fact that a GFS with credit-trading, but without a GHG price that could provide the certainty of revenues that could be used to support a more inclusive transition remains on the table means that there is a clear risk of a transition favouring developed economies and the higher income developing economies. Even besides this architecture uncertainty risk, the current lack of definition of any revenue magnitude and distribution, means there remains high uncertainty on which of the areas of equitable transition (which are not limited to technological inclusivity) any use of revenues may

[7] UMAS (2024) An overview of the discussions from IMO ISWG-GHG 16, available at https://www.u-mas.co.uk/imos-2030-and-2040-ghg-reduction-targets-now-explicitly-linked-to-fuel-standard-whilst-momentum-builds-on-a-universal-ghg-price-levy-but-all-options-remain-on-the-table/

[8] 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

effectively address. Of all the uncertainties and risks considered in this paper, the risk to a just and equitable transition currently appears to be the highest.

3.3 Timeline risk – adoption in 2025?

The 2023 Revised Strategy stated a timeline for the adoption of policy measures by the end of 2025. The meeting also launched the CIA process, which needs to be concluded before the measures can be adopted. Whilst that timeline should theoretically clarify the timescale of adoption of measures, there remains a risk that the challenge of reaching a multilateral consensus/agreement on the specifics of policy measures derails the timeline and causes a delay in postponing adoption until after 2025. There were a number of positive signs showing a reduction in the risk of that derailment – relative to the risk before the meeting. This means that there isn't evidence that the timeline risk has increased. However, given the scale of work still needed, and the complexity of the CIA assessment and associated political negotiations, this risk remains.

- **Restatement of commitment to the revised strategy** – many member states with a range of preferences of policy measure outcomes restated their commitment to the Revised GHG Strategy in their interventions. The revised strategy was not a topic that was debated, so restatement to the strategy was being given voluntarily. This continued reference evidence that, even after having had a chance to consider the commitments stated in the 2023 revised strategy more fully, member states are comfortable with the commitments made. As well as that positive reaction, there was no member state that expressed criticism of the Revised GHG Strategy i.e. there was no negative reaction.
- **CIA process progress** – the CIA was launched at MEPC 80, but only materialised as a process after the meeting. A 32 country Steering Committee has been appointed and has met five times to discuss the CIA process. Consultants/organisations that will lead the four analysis tasks have been appointed, and initial modelling has been undertaken. The ISWG-GHG 16 debate started with a review of progress, and the presentations from consultants/organisations were positively received, and the CIA progress endorsed to continue its work. Whilst there is still substantial and difficult work ahead, this critical process remains on track to deliver in time for reporting in July 2024, enabling its outputs (evidence of the impacts of different policy measure designs and parameters) to be used as inputs to the ISWG-GHG 17 and MEPC 82 debates.
- **Unanimity around the MARPOL amendment** - although in the debates leading up to MEPC 81 there were clear differences in preferences between member states on the fine details under the headings of the new MARPOL Annex VI Chapter 5 (e.g. different architecture preferences), the fact that as a group of member states they could unanimously agree to work under a common framework of subheadings for the amendment (all member states who spoke on this during MEPC 80 expressed support for the framework), is a positive signal in relation to the minimisation of timeline risk. It further builds on the unanimity of the adoption of the Revised GHG Strategy, and presents a good basis for the difficult agreements that are still to be made (e.g. if the group couldn't agree on a common framework, which in relative terms should be one of the easier decisions, then there would be less hope for reaching an agreement on the more contentious issues yet to be resolved).

3.4 Emissions scope and compliance/enforcement risk – robust policy or loopholes?

Even with a timely (e.g. 2025) adoption of an effective policy measure architecture, much of the risk relating to the effectiveness of the mid-term policy measures in delivering the revised strategy lies in the finer details of the policies. Among other things, this includes whether or not the policies are applied on a Tank-to-Wake or Well-to-Wake basis, what sort of compliance options (and alternative compliance options) are available and how they might ensure effective enforcement of the policy measures, how the LCA framework is finalised. Overall, the progression and positions recorded around many of these

topics during the negotiations provide evidence that the likelihood of robust policy is generally high. However, as with other items, this will be a key area of risk and further monitoring of the finalisation process will be needed to keep track of how that risk evolves over time.

- **Agreement that GFI is explicitly linked to the indicative checkpoints** – A key outcome from the ISWG-GHG 16 meeting remains that the GFI (the trajectory that defines the goal-based fuel standard's fuel GHG intensity reduction over time) is now explicitly linked to the indicative checkpoints. This does two things: [1] It reduces the risk of a transition regulated using TtW policy, given the interim targets are defined as WtW all GHG reduction targets, and [2] it reduces the risk of the GFS being set into policy in a way that does not achieve those interim targets in 2030 (20-striving-for-30%) and 2040 (70-striving-for-80%) absolute reduction targets.
- **Adjusted TtW is now the 'floor' in the GFS** – Figure 1 shows two branches of policy architectures, one which uses a TtW GFS and one using WtW GFS (Category A). Whilst no final decision was made in this meeting, in the debate during ISWG-GHG 16 there was a strong majority of countries calling for the GFS to apply a WtW framing. The main proponents of TtW framing had also modified their proposal to the 'adjusted TtW', which addressed some of the main concerns of TtW framing – that there would be loopholes 'over rewarding' or allowing compliance for some of the biofuels with higher WtW GHG emissions, or grey/brown hydrogen derived fuels (hydrogen produced using unabated fossil fuels). The adjusted TtW approach proposed and supported by a minority of member states closes those loopholes progressively over time, so that the integrity/effectiveness of GFS by the end of the transition (e.g. in the 2040s) is essentially a WtW framing. Adjusted TtW still creates a risk in the early stages of transition, e.g. of perverse incentives for technology/fuel/energy that are not aligned to the long-run needs of a decarbonised shipping sector, but overall, the starting point for subsequent negotiations is now closer (e.g. adjusted TtW is getting closer to WtW), reducing the risk on this item.
- **Lower support for a 'pay to pollute' alternative compliance** – Another risk occurs if the environmental effectiveness (the ability to drive absolute GHG emission reductions) is on the balance of a commercial decision, which in turn is tied to uncertainty in fuel availability. Some of the GFS proponents argue that the GFS would need an affordable 'pay to pollute' option e.g. as an alternative to compliance with the GFI, a ship could continue using fossil fuel but make a payment into a fund instead in order to be in compliance. Other GFS proponents had also supported the same mechanism but suggested that the option to 'pay to pollute' should be priced high enough to ensure a very minimal and 'emergency only' use of this compliance option – so that compliance with the GFI, or credit trading that resulted in the fleet on average achieving the GFI, would be the dominant means of compliance. Whilst all these options, and others, remain on the table, the majority of member states are supporting high-GFI compliance effectiveness over using 'pay to pollute' as a significant mechanism, which helps to reduce the likelihood and risk of a weakening of business case for new technology and fuels, which would be created if 'pay to pollute' was a commercially competitive option.
- **Uncertainty on alternative compliance and flexibility** – Flexibility mechanisms, a component that could be included in GFS, are now clearly classified as an economic measure from the new MARPOL Annex VI chapter structure. However, no conclusion was reached on their use, and other interacting choices for creating some flexibility that manages uncertainty in the evolution of compliant fuel/fleet evolution remain on the table. The concept of FONAR was discussed by several member states, with no clear indication readable on whether it could ultimately be broadly supported. A FONAR (fuel oil non-availability report) is a mechanism that exists in the IMO's regulation of sulphur emissions. It enables a ship to report/legitimise that due to lack of availability of compliant fuel they have had to use non-compliant fuel. These discussions on alternative compliance may be initially captured in the MARPOL amendment. Still, they may also be dependent on details only specified in guidelines (documentation that is adopted after the adoption of the MARPOL amendment).

- **Independent review of Lifecycle Analysis (LCA)** – The LCA guidelines are a critical enabling component of the IMO's mid-term measures, given they specify the quantification of the GHG reductions of different energy and fuel production processes. Unlike existing regulations that are applied on a TtW basis (e.g. EEDI, EEXI), the mid-term measures, whether driven with an explicitly WtW GFI or GHG price or not, will need to be assessed, monitored and revised against their WtW emission consequences. This brings measurement and certification of upstream emissions (e.g. fuel/energy production and supply chain) into the IMO for the first time. Significant progress has been made with the initial guidelines adopted at MEPC 80. Still, the default factors for a broad range of candidate fuels have yet to be finalised, and some of the harder-to-define aspects of "social and economic sustainability themes" are still being discussed. Both the ISWG-GHG 16 and MEPC 80 meetings debated the current status of LCA guidelines (the latest iteration is known as the 2024 LCA Guidelines), additions (including onboard carbon capture and sequestration[9]), and the process to further develop and finalise these guidelines. There will be two processes now taken forwards in parallel: a correspondence group (written collaboration between member states and NGOs) will further populate some of the less complete aspects of the guidelines, whilst a separate working group under GESAMP (http://www.gesamp.org), a body of independent experts on scientific aspects of marine environmental protection, will undertake a review of the LCA guidelines agreed to date. A GESAMP review increases uncertainty because it will apply a new perspective to LCA guidelines. However, it also increases independent scientific scrutiny which should reduce the risk of the LCA guidelines becoming a loophole and increase the likelihood of their robustness.

[9] UMAS (2024) An overview of the discussions from IMO ISWG-GHG 16, available at https://www.u-mas.co.uk/imos-2030-and-2040-ghg-reduction-targets-now-explicitly-linked-to-fuel-standard-whilst-momentum-builds-on-a-universal-ghg-price-levy-but-all-options-remain-on-the-table/