



**THE BARTLETT
ENERGY INSTITUTE**

**An overview of the discussions
from IMO's Marine Environment
Protection Committee
Extraordinary Session and
Intersessional Working Group
on GHGs 20th session**

Authors

Tristan Smith, Annika Frosch, Marie Fricaudet, Pinar Langer, Ting Cooper, Nishatabbas Rehmatulla, Dola Oluteye,

Publication details

Publication date: 24.10.2025

Cite as: Smith, T, Frosch, A., Fricaudet, M., Langer, P., Cooper, T., Rehmatulla, N., & Oluteye, D. (2025) An overview of the discussions from IMO's Marine Environment Protection Committee Extraordinary Session and Intersessional Working Group on GHGs 20th session, London, UK

Acknowledgements

We are grateful for funding support from the United Nations Foundation, ClimateWorks Foundation and Quadrature Climate Foundation, which has enabled this report. We would like to thank IMO observer organisations Clean Shipping Coalition (CSC), Environmental Defense Fund (EDF), Zero Emissions Ship Technology Association (ZESTAs) and Institute of Marine Engineers Science & Technology (IMarEST) for accrediting many of the team and enabling their attendance to follow the discussions. Lead author Tristan Smith attends IMO as a delegate of the IMarEST <https://www.imarest.org>. He chairs the IMarEST's Working Group on IMO GHG regulation. IMarEST has a dedicated Special Interest Group (SIG) working on "Ship Energy and Environment": <https://www.imarest.org/group/ship-energy-and-environment.html>.

Disclaimer

The information contained in this report is not an alternative to advice from an appropriately qualified professional. If you have any specific questions about any financial or technical matters, you should consult an appropriately qualified professional. UCL will not be liable for any business losses, including without limitation loss of or damage to profits, income, revenue, use, production, anticipated savings, business, contracts, commercial opportunities or goodwill.

Contact details

If you require any further information on this report, please contact:
Dr. Nishatabbas Rehmatulla, n.rehmatulla@ucl.ac.uk

About UCL Shipping and Oceans Research Group

The UCL Energy Institute hosts a world leading research group which aims to accelerate the transition to an equitable and sustainable energy and trade system within the context of the ocean. The research group's multi-disciplinary work on the shipping and ocean system leverages advanced data analytics, cutting-edge modelling, and rigorous research methods, providing crucial insights for decision-makers in both policy and industry. The group focuses on three core areas: analysing big data to understand drivers of historical emissions and wider environmental impacts, developing models and frameworks to explore energy and trade transition to a zero emissions future, and conducting social science research to examine the policy and commercial structures that enable the decarbonisation of the shipping sector. For more information visit www.shippingandoceans.com

Executive summary

Two weeks of negotiations at the IMO give two confusingly different overall signals, as well as plenty of information on detail to digest in this readout. In the first week the IMO's efforts to adopt binding GHG measures in the form of the Net Zero Framework (NZF), agreed in principle in April, went backwards. Countries voted to defer the meeting and therefore the decision to adopt. There is now certainty that this regulation's entry into effect will be delayed by 12 months to 1st January 2029. But there is also increased uncertainty that it will be adopted at all.

However, the second week of negotiations, the ISWG-GHG 20, made steady progress on the discussion of the detail for the regulation's implementation. Many of the countries which had been negative towards adoption in the previous week were back to negotiating their preferences on all the key implementation details – how the regulation should incentivise energy transition, how the fund should be setup, how the lifecycle and sustainability of different fuels should be evaluated and certified.

Given how the first week of the meeting was disrupted, there was a concern that the conduct of leading negative voices in that debate (the US and Saudi Arabia), would continue to block and disrupt progress, setting work further back. This did not turn out to be the case. In combination with the broad engagement to progress the implementation detail of the NZF, there was therefore a clear counter-signal sent both counter to the negativity towards adoption in the first week and evidencing that countries generally see the NZF as an appropriate framework to use as the basis for IMO policymaking.

Figure A explains the composition of the different voting blocks for deferment. The 'yes' to deferment included constituents from across yes, no, abstain and absent in April. The depletion of the support in April both to countries preferring deferral and abstaining in the deferral vote significantly explain the outcome.

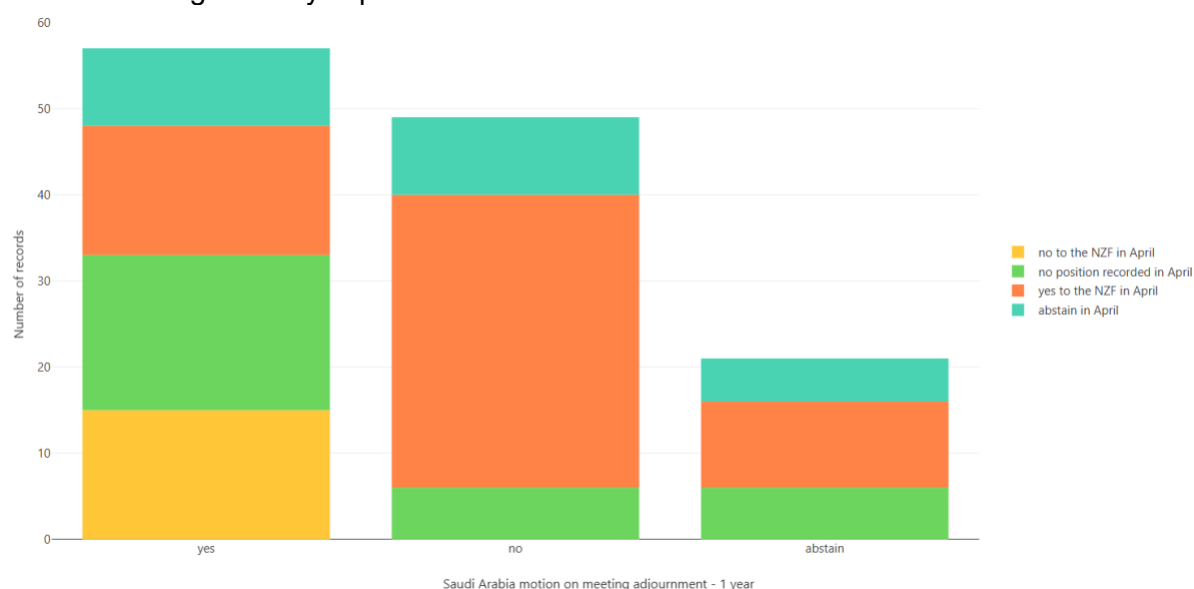


Figure A: Countries' votes in the vote on the adjournment at MEPC.ES depending on their vote in April (MEPC 83) on the NZF

Although efforts by US and Saudi Arabia in the first week of negotiations led to this confusing state, they exploited a variety of weaknesses in the broader landscape. Their efforts were refuted by the continued leadership of a group of SIDS and LDCs, aligned with emerging economy and high income country voices. Based on the work done during ISWG-

GHG 20, further progress in the detail of the NZF's guidelines can now be expected at the next meetings in April, which addresses one core weakness: the lack of detail in the NZF. Nevertheless, the sector faces continued uncertainty on both whether and how its GHG emissions will be regulated, with three basic scenarios for what happens to the NZF in 12 months' time:

- NZF is adopted, albeit with entry into effect delayed to 1st January 2029
- NZF is adjusted, re-approved and with entry into effect delayed to 1st January 2029 or thereafter
- NZF and IMO's ability to progress significant further GHG regulations is blocked for a longer period of time

For either of the first two scenarios, as a minimum, other weaknesses in the landscape will also need to be addressed over the next 12 months. For there to be likelihood in adoption, it may also be necessary for there to be a different dynamic and pressure from the US. Table A outlines in summary the contributions to the outcome in MEPC.ES and the potential/direction of any change in that factor over the next 12 months.

Beyond the overall outcome on adoption, the detailed discussions in ISWG-GHG 20 reveal some emerging perspectives that will form the basis of the guidelines. No decisions were taken to rule on detail either way, and so the ideas all move forwards to greater clarification.

Based on the discussions at this meeting, Zero Near Zero (ZNZ) definition looks unlikely to go beyond the detail in the MARPOL amendment (e.g. the limit on GHG fuel intensity). However there was broad support for a level of differentiation or limitation on eligibility which should be able to provide at a minimum, a levelling of the playing field for more expensive qualifying ZNZ (e-fuels), relative to other qualifying fuel options. The details on the reward mechanism will remain fluid, although it was clear that member states see these guidelines as a priority and will likely work to clarify significantly during 2026. An alternative way to incentivise e-fuels (or ZNZ) was also considered, this would involve multiplying SU's. This was considered as a matter for the GFI guidelines and whilst some member states were open to considering the option further, there were also member states clearly opposed to the concept.

In discussing the IMO's Net Zero Fund, there were mixed signals from the member state interventions. Some were keen to move forwards with urgency and develop some initial governing provisions that would provide a minimum further clarity, but there was also opposition to this. There was more support and progress relating to the formation of a governing board, which would likely be needed alongside clarification of some minimum or core detail for further work (such as core provisions).

Progress and further discussion was also made on the subject of Lifecycle analysis (LCA), and how different fuels would be certified. The question of sustainability criteria (an important issue for biofuel evaluation) was widely discussed, and is likely to see further attention alongside questions of environmental integrity and GHG emission accountancy.

Table A: What could explain what happened and is anything likely to change in 12 months' time?

Contributing Factor	Summary of What Happened / Explanation (for references refer to main document)	Expected Direction of Change in 12 Months
US and Saudi Pressure	The US exerted tariff and sanctions threats, heavily influencing positions; Saudi Arabia and allies actively opposed NZF adoption, lobbying other regions to join their opposition.	Could change in either direction – depends on multilateralism trends, US economic/political influence, and whether there will be sustained use and potency of trade/sanctions tools.
Industry Pressure	Strong lobbying against NZF from industry (e.g., DNV, ABS); flag states pressured by shipowners and fear of sanctions. Industry divided between regulation supporters and opponents.	Could change in either direction – failure to adopt has intensified both 'for' and 'against' voices; industry–government dialogue and improved evidence may shape future alignment.
BRICS Division	Mixed positions: Brazil and South Africa supported NZF adoption; China less clear; Russia aligned with US/Saudi. Lack of unified and clear BRICS leadership weakened adoption prospects.	Could change in either direction – China, India, and Brazil may shift positively due to domestic green corridor plans and alternative fuel opportunities, though unilateral actions by these countries are also possible.
Secretary-General and Secretariat Pressure	Active advocacy for adoption may have made some countries feel rushed. This perceived procedural pressure may have contributed to pushback and deferment.	Expected change for the positive – 12-month delay reduces time pressure, restoring member state control and easing tension around SG/secretariat influence.
Absence of Detail in NZF	The agreed NZF lacked specific details on fund operation and incentive mechanisms, causing uncertainty about national risks and benefits.	Expected change for the positive – upcoming meetings (ISWG-GHG 20–21, MEPC 84–86) will clarify guidelines, offering better understanding of risk/reward, though not all concerns may be resolved.
Absence of Understanding of NZF Impacts	Disputes over the Comprehensive Impact Assessment created confusion, exploited by US and Saudi narratives.	Expected change for the positive – while no new official study is expected, independent analyses by industry and countries will likely improve understanding and dialogue.
EU 'Neocolonialism' Allegations	US and Saudi delegations framed EU actions as neocolonial, turning low-income countries against NZF. EU's technocratic responses reinforced perceptions of inequality.	Could change in either direction – may improve with more accurate narratives, but depends on EU diplomacy and internal unity (notably after Greece/Cyprus abstention).
Misunderstanding of Process and Consequences of Delay	Some countries may have misunderstood voting and procedural implications (tacit vs. express acceptance, deferment and their consequences). Confusion during roll call revealed poor preparation.	Expected change for the positive – procedural clarity will improve with time and awareness before the next meeting, reducing risk of confusion in 12 months.

Contents

1	What wasn't adopted?	7
2	What happened in the process, and what does this indicate for the further finalisation of this Framework?	8
3	What could explain what happened and is anything likely to change in 12 months' time? 13	
3.1	US and Saudi pressure	13
3.2	Industry pressure.....	13
3.3	BRICS divided in support and level of backing for the NZF	14
3.4	Secretary General and secretariat pressure to adopt	14
3.5	Absence of detail in the NZF	15
3.6	Absence of understanding of the impacts of NZF	15
3.7	EU 'neocolonialism' allegations and response	16
3.8	Misunderstanding of process and consequences of delay	16
4	What is the schedule from here, when will key details be clear?	17
5	What happened during ISWG-GHG 20?.....	19
5.1	Discussion on ZNZ definition and reward mechanisms	19
5.2	Discussion on the Fund.....	21
5.3	Discussion on LCA guidelines and certification schemes	23
5.4	Discussion on the GFI registry	25
5.5	5 th GHG study.....	27
6	Appendix – further breakdown of voting results.....	28

1 What wasn't adopted?

The second IMO MEPC.ES (Extraordinary Session), in line with a schedule of work agreed in 2023, adopted legal text amendments to the IMO's MARPOL convention, that had been agreed in principle in April 2025. However, the Extraordinary Session of the IMO's Marine Environment Protection Committee ended without adopting the Net Zero Framework (NZF). A vote was called for by Saudi Arabia to adjourn the meeting for one year, which was passed. The IMO's NZF employs a dual-target approach to assess and encourage enhancements in ships' GHG fuel intensity (GFI). The two targets become increasingly stringent over time (as shown in Figure 1):

- Base Target Annual GFI: The minimum compliance threshold that all ships must achieve.
- Direct Compliance Target Annual GFI: A more ambitious target that is meant to incentivize early adopters and technology leaders.

These targets are based on reduction factors applied to a reference value that represents the average GFI of international shipping in 2008 of 93.3 gCO₂eq/MJ on a Well-to-Wake basis. The reduction percentages increase over time, requiring ships to continuously enhance their performance. Consequently, various compliance scenarios arise depending on a ship's performance. Three distinct scenarios can be anticipated:

Scenario 1: Direct Compliance (High Performance)

A ship achieves direct compliance when its annual GFI falls below the direct compliance target. When this occurs, the ship earns surplus units (SU) proportional to how much it exceeds the target. These surplus units become a valuable asset that the ship owner can use strategically. The ship has several options for managing these surplus units. The owner can choose to sell the surplus units, transferring them to underperforming ships that need them to meet their compliance obligations. Alternatively, the surplus units can be banked for future use (for up to 2 years), allowing the ship owner to save them in case the ship's performance or energy prices fluctuate in upcoming reporting periods. Another option is voluntary cancellation, where the owner decides to cancel the surplus units.

Scenario 2: Partial Compliance

A ship achieves partial compliance when its attained annual GFI exceeds the base target but does not meet the direct compliance target. In this case, the ship is categorized as having a "Tier 1 compliance deficit", which indicates a moderate level of non-compliance that necessitates remediation. To rectify this deficit, the ship owner must pay into the IMO Net-Zero Fund by purchasing remedial units at the Tier 1 pricing rate, which is lower than the one for Tier 2 units (starting price of \$100/tCO₂e). This payment is a levy/price on GHG for this portion of its GHG emissions.

Scenario 3: Non-compliance (Underperformance)

A ship is deemed non-compliant when its attained annual GFI exceeds, or is higher than, the more lenient base target. In this situation, the ship incurs both a "Tier 1 compliance deficit" and a "Tier 2 compliance deficit", indicating significant non-compliance that necessitates more substantial remediation. To address the "Tier 1 compliance deficit" the ship owner must acquire remedial units at the Tier 1 pricing rate, which contributes to the IMO Net-Zero Fund. For the Tier 2 deficit, the ship has 3 options. First, the ship owner can pay a higher amount by acquiring remedial units at the elevated Tier 2 pricing rate. Second, the ship can purchase surplus units from ships that are over-compliant. Finally, if the ship has any accumulated surplus units from previous compliance periods, it may apply those to help satisfy the Tier 2 compliance requirement.

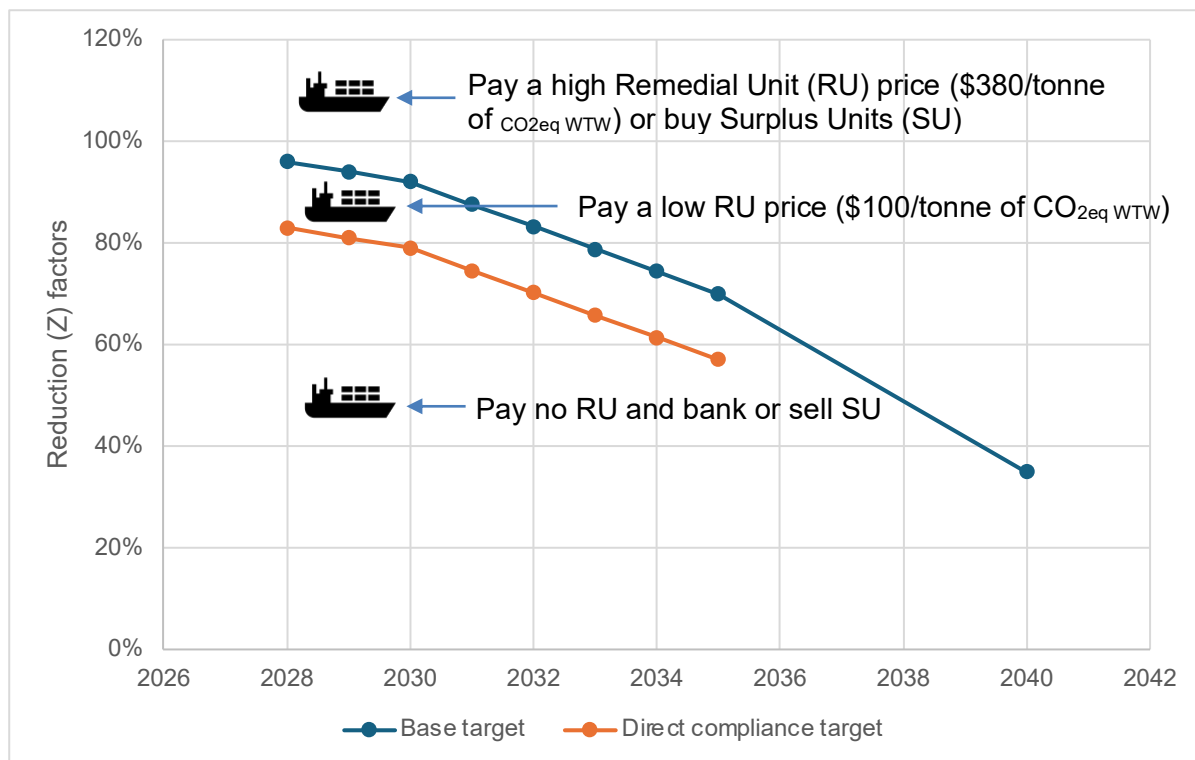


Figure 1: Illustration of Global Fuel Intensity and credit trading mechanism and reduction factors and prices agreed at MEPC 83

2 What happened in the process, and what does this indicate for the further finalisation of this Framework?

The first week (MEPC.ES) was focusing on decision making, rather than a meeting to develop additional information on the regulation. Further details on guidelines which contain that additional information were discussed in the following week (ISWG-GHG 20).

Whilst there is no evolution/change in the substance of the NZF during MEPC.ES, the meeting's process provided important information about how decisions were made that offer insights relevant to further steps before the regulation enters into force.

This is relevant because the NZF represents a major change for this sector, with significant penalties that were expected to drive and incentivise change as early as 2028. Shipping sector value chains will need to fundamentally change in a very short timescale, if they are to optimise around the new incentives. However, they must do this whilst navigating not only a period of 'technological' uncertainty (e.g. which fuel and technology strategy will be most competitive at each period over coming years), but also the 'political' uncertainty caused by this being such a polarized and fiercely contested decision-making process.

One of the points of contention in the meeting was the procedure by which the adopted regulation would reach acceptance (a necessary step before it enters into force). There are two options in MARPOL's 'rules for procedure':

- Tacit acceptance – Countries have 10 months to formally object after adoption. If objections are received from more than 33% of Parties to MARPOL Annex VI, or from Parties accounting for at least 50% of global shipping tonnage, the amendment is not

considered accepted. Otherwise, it is automatically accepted at the end of the 10 months.

- Express (explicit) acceptance – Countries must actively opt in by accepting the amendment. The amendment only takes effect once acceptance is received from a specified proportion of Parties (two-thirds) representing at least 50% of global gross tonnage. This approach is slower and less common than tacit acceptance.

Express acceptance therefore sets a higher bar and can be difficult to achieve in practice, potentially causing challenges in implementation (including of enforcement). Opting in requires an administrative process in countries, which can often be delayed.

A further example of why express acceptance sets this higher bar can be seen from the positions taken in the vote at MEPC 83 (total parties to annex VI):

- 57 parties to annex VI voted yes
- 8 parties to annex VI voted no

On those present and voting, even though a very strong majority of 88% voted yes, the threshold of parties supporting was only 51%. Partly this is because of abstentions, but also because ~30 parties were not registered for the meeting and might in an explicit acceptance procedure become the obstruction to an otherwise strongly supported MEPC decision.

Another key issue is that regarding this decision (tacit/express), and in procedural decision making at MEPC generally, all member states that have registered for the meeting get a 'vote'. Whereas on adoption decision making, it is only the subset of IMO's member states that are parties to MARPOL Annex VI (108) that have voting rights. The tacit/express decision can significantly affect the likelihood of the NZF entering into force, as well as drawing on a wider group of member states (than the MARPOL Annex VI parties) to determine the outcome.

Among the Member States that expressed their opinions during the MEPC.ES session, 43 supported the tacit acceptance method, while 26 favoured the explicit acceptance method. Evidencing strong support for retaining the convention of the tacit amendment procedure.

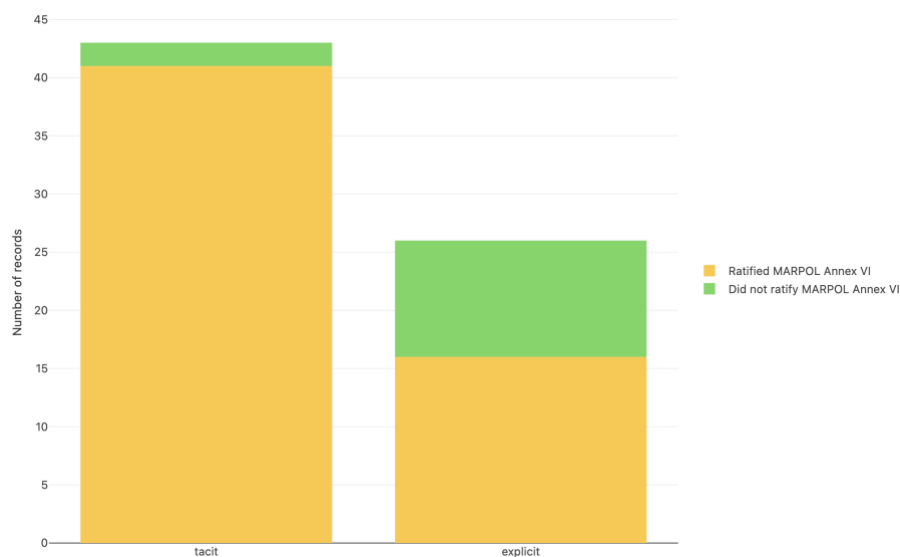


Figure 2: Views expressed on the acceptance methods, grouped by their status as Parties or non-Parties to MARPOL Annex VI.

The meeting followed IMO's standard procedure which is for the MARPOL convention amendment (the NZF legal text), to undergo a final review and revision following the consultation period of 6 months since agreement in principle. Several modifications to the NZF legal text that were discussed, based on papers submitted to the meeting. Because these are expected not to be substantive, member states and observer organisations broadly did not make suggestions that 'opened up' for renegotiation what had been agreed upon in principle in April.

Most of the modifications to the text were successfully implemented during the meeting, and should help to clarify and simplify the legal language for implementation. One seemingly small but in practice significant modification was requested by the International Chamber of Shipping – to convert language stating that vessels using ZNZ 'may' be rewarded, to language stating that vessels using ZNZ 'shall' be rewarded. It was argued that this would provide shipowners the necessary confidence that there would be certainty of reward and help unlock investment. However, in signals that will be important for the debate on guidelines for ZNZ reward, several member states were concerned that this created an unlimited liability for the IMO's Fund (e.g. the demand for revenues for rewarding ZNZ use could exceed the revenues available in the fund) and therefore were not able to support the revision.

Following the minor (cosmetic) modifications to the MARPOL amendment text, the meeting had to take a formal decision on adoption. Many were already expecting this decision to be made by vote, but the IMO has a proud history of only resorting to vote in extreme cases as it is divisive and can negatively impact the trust needed to ensure work progresses beyond that decision. For this reason, there have been only two previous occasions in recent years when a decision was made by vote rather than through the chair reaching a consensus conclusion that is accepted by countries as a basis to move forward. One of those occasions was in April 2025, when agreeing in principle to the NZF at MEPC 83. Another instance was at MEPC 62 in 2011 when EEDI was adopted. A vote was called by member states. Both previous votes had been called by Saudi Arabia.

Because of this, efforts were made throughout the week to avoid voting, but it was eventually called by the delegation of the Saudi Arabia to adjourn the meeting and therefore the decision by a year. 57 countries voted in favour of the adjournment, so that the adoption was adjourned by a year. The figures 3 and 4 below show the results by status with regards to the MARPOL amendment and by income status (World Bank classification). All positions gathered support from a variety of countries, but more lower/middle income countries supported the adjournment, while more upper income countries opposed it. SIDS and LDCs were fairly evenly split between those positions.

Another important consideration of this vote is the position of large Flag State, as even under the tacit acceptance procedure, the implementation of the NZF can be blocked by Flag States representing at least 50% of the flagged fleet by gross tonnage (GT). Figure 5 showed that a majority of the gross tonnage is flagged in countries which supported the adjournment.

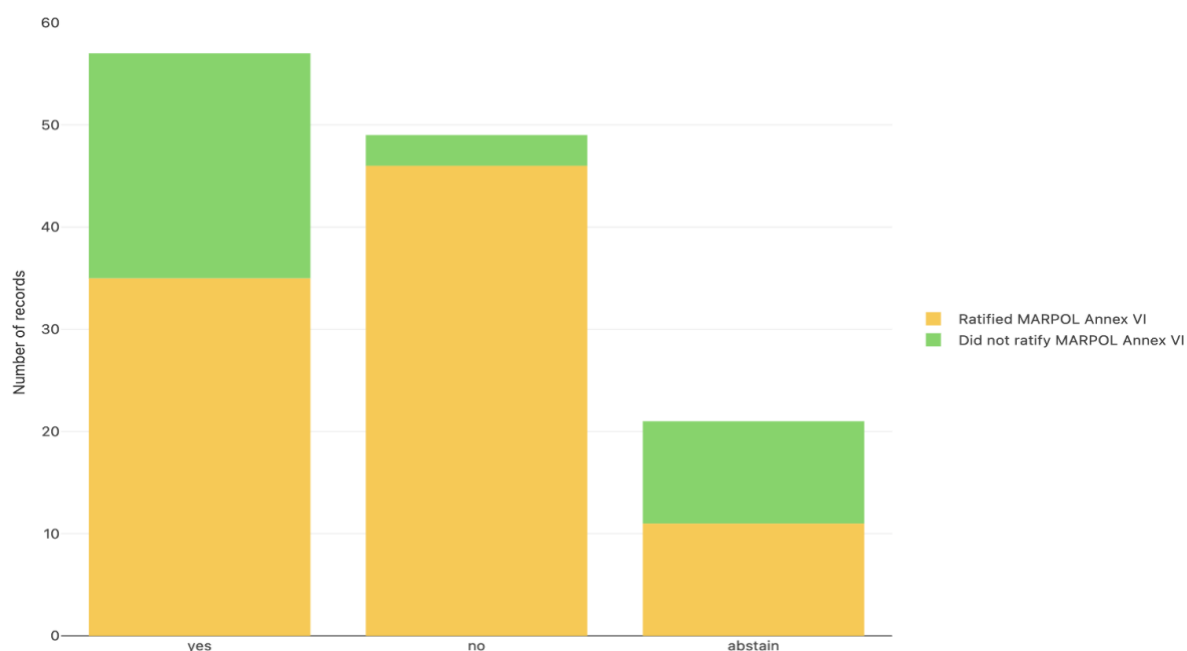


Figure 3: Distribution of MEPC.ES voting results on the adjournment of the vote on the adoption of the NZF across Member States, grouped by their status as Parties or non-Parties to MARPOL Annex VI.

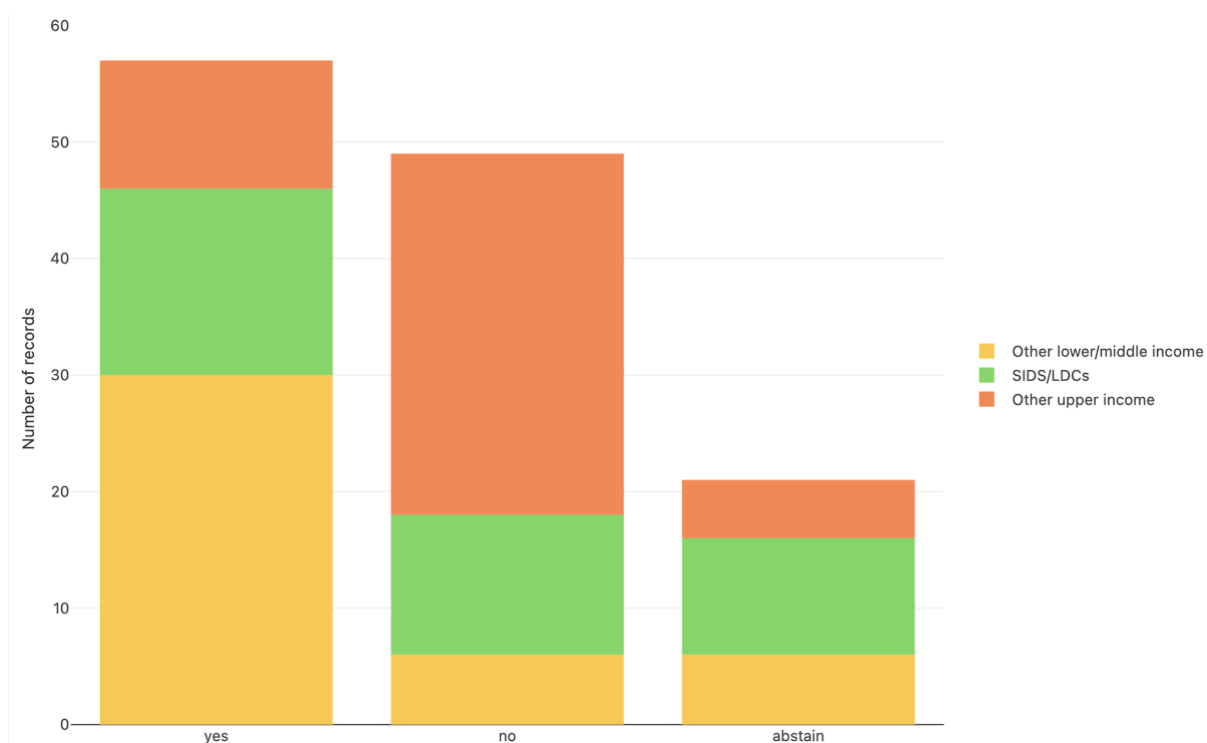


Figure 4: Distribution of MEPC.ES voting results on adjournment of the vote on the adoption of the NZF cross Member States, grouped by income category.

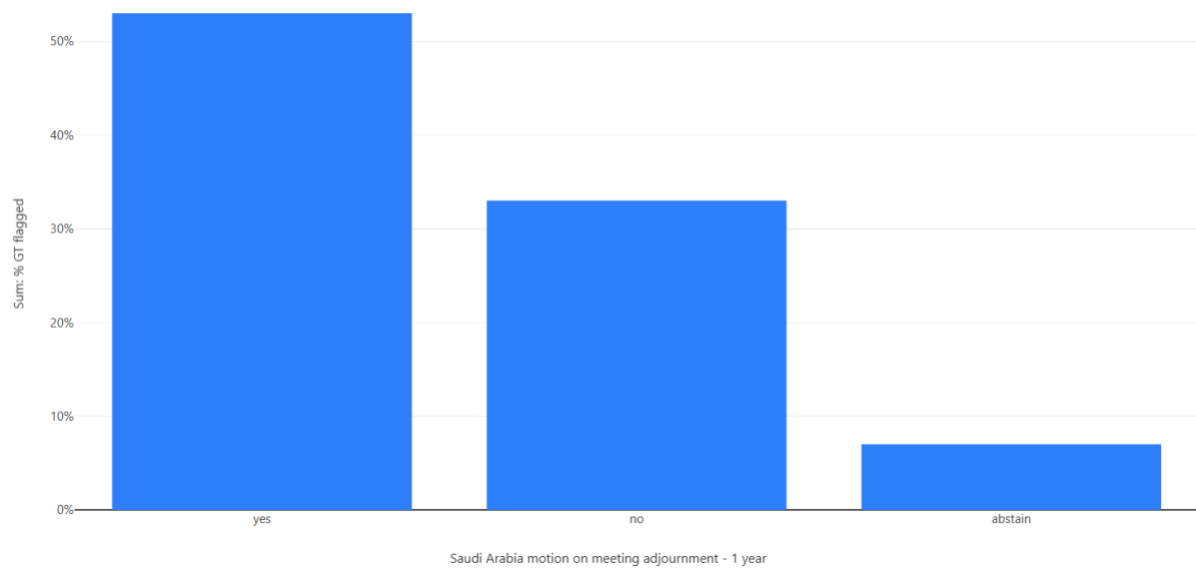


Figure 5: Share of the fleet flagged, depending on the position of the Flag States on the adjournment of the vote on the adoption of the NZF

Among the 63 countries that supported (voted “yes”) the IMO net-zero framework at MEPC 83 in April, 34 opposed Saudi Arabia’s proposal to adjourn the meeting for one year, 15 supported it, and 10 abstained (Figure 6).

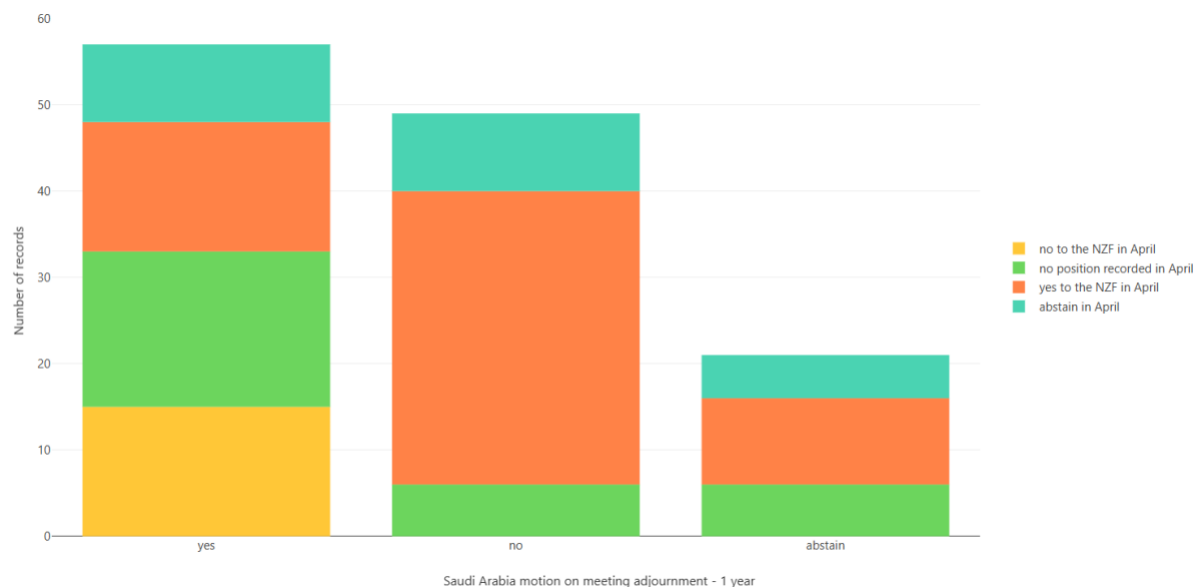


Figure 6: Countries votes in the vote on the adjournment (MEPC.ES) depending on their vote in April on the NZF (MEPC 83)

Since the IMO’s NZF decisions unfold over a period of time (e.g. approval in April 2025, adoption in October 2025, and acceptance in October 2026), the trends and momentum are important. The level of support is noticeably weaker than in April, and likely reflects the effectiveness and efforts made by sides supporting or opposing the NZF over the intervening period. It is too early to tell how countries are likely to now react to this outcome and whether

momentum will swing back to the opposite direction. Some of the contributors and considerations relevant to future trend and momentum are further discussed in Section 4.

3 What could explain what happened and is anything likely to change in 12 months' time?

The significant shift in positions from April to October is difficult to decompose. Interventions by countries during negotiations offer some narrative and potential explanations, but all the underlying reasons are likely complex and may involve multiple interacting causes. These could include:

3.1 US and Saudi pressure

It is already well documented that the US issued sanctions and threats, as mentioned in its official position, which includes sanctions on officials¹. This was re-emphasised in numerous public announcements, both the pressure (threats) on capitals and on delegates in the room. Saudi Arabia, along with aligned states in the Middle Eastern region, was leading opponents in April to the agreement in principle of the NZF (and had called for a vote), and that opposition has been clearly sustained. There is evidence of strong activity by Saudi Arabia during the interim period, including bilateral meetings² with key countries (in Africa, Latin America, Asia), and with wider regional groups. Consistent with submissions made to the MEPC.ES meeting, this likely provided a strong counter-narrative to adoption in both oil and gas producing and low income countries.

Potential for change in either direction – the dialogue between countries will continue to evolve and could change significantly over time. The key components in this landscape are both the progression or decline of multilateralism overall, the broader climate agenda, and the evolution of how tariffs, trade deals, and sanctions are used, particularly by the US, along with the relative economic condition and influence of the US. This therefore extends well beyond the specifics or key stakeholders of the IMO debate, and is not something likely to be within their control or influence. Instead, it will serve as a key indicator of the viability of adoption in 12 months' time.

3.2 Industry pressure

There is various evidence that strong lobbying against the adoption came from industry voices both at the public and global levels (e.g. DNV³, ABS⁴), but also privately and within regions. Different countries face the sector in various ways. Major flag states face pressure both directly from the US, and indirectly from their shipowners/registries, who are intimidated by the threat of sanctions by association⁵. It is expected that there are both advocates for and against GHG regulation within the industry, but those opposing IMO GHG regulations

¹ <https://www.state.gov/releases/office-of-the-spokesperson/2025/10/taking-action-to-defend-america-from-the-uns-first-global-carbon-tax-the-international-maritime-organizations-imo-net-zero-framework-nzf>

² https://www.linkedin.com/posts/the-kingdom-of-saudi-arabia-at-the-international-maritime-organization_saudi-arabia-activity-7382381528099479552-EEYg/
https://www.linkedin.com/posts/the-kingdom-of-saudi-arabia-at-the-international-maritime-organization_saudi-arabia-activity-7381996443127042050-0YrN/
https://www.linkedin.com/posts/the-kingdom-of-saudi-arabia-at-the-international-maritime-organization_saudi-arabia-activity-7379867811382272001-bfGs/

³ <https://www.lloydslist.com/LL1154780/DNV-maritime-boss-highlights-major-concern-with-IMO-net-zero-framework>

⁴ <https://www.rivieramm.com/news-content-hub/news-content-hub/abs-ceo-imo-needs-to-take-a-timeout-on-net-zero-framework-86155>

⁵ <https://www.lloydslist.com/LL1155198/Furious-officials-consider-legal-action-after-Greece-and-Cyprus-break-EU-unity-at-IMO>

contribute both to justifying regional regulation (which tends to face stronger lobby against it), and to making the sector more uncertain and higher risk (increasing their costs).

Potential for change in either direction – the uncertainty caused by the failure to adopt at MEPC.ES is likely to crystallise both ‘for’ and ‘against’ voices within the industry. Some ‘against’ voices will see this as an opportunity to reset and make more fundamental adjustments to the parameter settings in the NZF that put them at a disadvantage. Therefore, an ongoing and active debate among industry stakeholders can be expected during the upcoming period. Greater clarity on how financial risks and opportunities are likely to unfold in various scenarios, along with the evaluation of the balance of the risk/preference between IMO regulation and regional regulation are likely to be the key determinants of how this appears overall. Those who perceived this lobbying as part of a strategy to make certain adjustments to the details (guidelines), may now reconsider whether being clearer in their support for the adoption of NZF is more important than lobbying for their specific special interest in the guidelines. At the interface between industry and governments, where the narrative and preferences of industry are communicated and understood, there is also potential for improved quality of evidence during this period, that could affect how governments respond to lobbyists.

3.3 BRICS divided in support and level of backing for the NZF

Brazil, host of COP 30, pushed hard for a compromise to agree on the NZF in April, but then strongly promoted the adoption of the NZF throughout the negotiations. South Africa also supported adoption at MEPC.ES. China pushed for significant compromises in April, but was less clear in its interventions during MEPC.ES and ultimately backed the delay in adoption. Russia clearly aligned with the US and Saudi positions. This range of positions across BRICS, especially the absence of clear leadership on NZF from both China and India, could have contributed to the deferment outcome.

Potential to change in either direction – much like the uncertainties about what happens next in the US, the position of China and potentially India is also uncertain and could change in either direction. The Chinese government has already announced an extensive programme of green corridors (on 20th October), showing its eagerness to advance maritime decarbonisation regardless of the outcome at MEPC.ES. And China, India, and Brazil are countries that all have significant opportunities resulting from a shift from fossil fuels to alternative fuels in shipping. However, this could be driven by unilateral actions taken by these countries as well as by IMO regulation. Overall, this therefore remains a potential for changing positively or negatively over the 12 month period.

3.4 Secretary General and secretariat pressure to adopt

Secretariats are theoretically neutral enablers of a conversation between countries. In this instance multiple actors from the SG down were clearly advocates for adoption. There is some evidence of this being standard practice at the IMO, among other institutions⁶, and it has both advantages and disadvantages. In this instance, there is evidence in the interventions made during MEPC.ES that some countries felt ‘rushed’ into decision making by the process and by association the active leadership of the process.

⁶ <https://research.cbs.dk/en/publications/breaking-through-the-imo-decision-making-process-the-decision-mak/>

Expected change for the positive – the certainty of a 12 month delay at least removes the immediate time pressure on decision making by the process and its leadership. Member states voting ‘for’ delay, might feel they have now neutralised the relative lack of control they experienced during the run-up to MEPC.ES, and by association neutralising SG/secretariat pressure that may have led to them feeling rushed into a decision they were not in control of.

3.5 Absence of detail in the NZF

Because the NZF specification was heavily debated up until the last minute of MEPC 83, including the fundamental architecture used (NZF’s multiple GFI limit lines were a late development in the negotiations before April), the agreed MARPOL amendment is light on specifics. The way the fund would work, and how the regulation might incentivise energy transition and therefore create opportunities and risks for the sector and member states, is significantly determined by the guidelines. This, in turn, makes it difficult for member states to accurately assess their risks and opportunities, and therefore to make precise judgments about whether the overall policy aligns with national interests. Significantly, there is more certainty regarding the negative impacts (most parameters still being considered will result in similar costs and therefore impacts on state), whereas the magnitude and specifics of how revenues would be distributed are more uncertain.

Expected change for the positive: With the undertaking of ISWG-GHG 20, there is already a greater understanding of the guidelines, and further evolution is anticipated in meetings in April/May 2026 (ISWG-GHG 21 and MEPC 84 will both advance GHG agenda items, including on the development of guidelines). The adoption of resolutions containing guidelines related to NZF at MEPC 84 (one or two might have been adopted) may be challenging, but remains possible at MEPC 85 and 86 (the majority of guidelines were expected for adoption in that period). It is uncertain whether concerns and risks will be fully allayed by countries as they see a convergence of positions on the guideline detail over the next 12 months, but there should certainly be more information about the likely direction of this detail by then.

3.6 Absence of understanding of the impacts of NZF

Another argument, perhaps related to the time pressure on adoption and absence of detail in the NZF, relates to the absence of understanding of its impacts. The IMO’s NZF process was marked by a contentious Comprehensive Impact Assessment, conducted in 2024 and considered at MEPC 82. Some countries, including Brazil and Argentina, argued that the formal study was misrepresentative of impacts on states of different policies, criticizing both the evidence, the presentation, and UNCTAD, the organisation which undertook the work. Egypt led a call for further work to understand the food security risks. After undertaking further work on food security, the IMO process did formally conclude that it had satisfied its requirement to undertake assessment of impacts, hence reaching agreement in principle in April. However, the confusion created by a contentious debate was exploited by US and Saudi Arabia, working with other member states to submit their own interpretation on the impacts (MEPC/ES.2/2/8 and MEPC/ES.2/2/7).

Expected change for the positive: No further official IMO study is expected during this period (e.g. a new impact study as called for by some). However, given how contentious this issue has remained, there may now be analysis undertaken by and for industry and countries and groups of countries to allow them to further consider impacts. This, combined with the time allocated for further dialogue, should have a positive impact by the time adoption is revisited in 12 months.

3.7 EU ‘neocolonialism’ allegations and response

One of the tactics deployed by both US and Saudi negotiators involves negatively portraying the actions of EU member states to rally low-income countries against adoption and for deferral. In the run up to the meeting, US official statements explicitly accused EU neocolonialism⁷ as the driving force behind the NZF. The US itself played a key role in the high ambitions of the Revised Strategy under a previous administration. Nevertheless, the allegations of the behaviour are a powerful motivator and alibi for opposition in low-income countries. In a specific example of how this can negatively impact dynamics during MEPC.ES, the UAE requested clarity on how the EU responds to the IMO regulation, especially regarding how it modifies or removes its current unilateral regulation of international shipping in recognition of the IMO’s. EU member states mainly responded to this by explaining their process which entails extensive consultation and is therefore not something they wanted to give any commitment on. The technocratic way this response was presented however, along with a lack of urgency expressed by EU member states to clarify the specifics of the NZF fund, played into the broader narrative that the EU member states are not prioritising equality or recognising the needs of low income countries. This significantly weakened how convincing EU arguments for NZF adoption were to uncertain low income states.

Potential to change in either direction – Allegations of EU neocolonialism are clearly disproven by the history of the negotiations, which all originate from the IMO’s GHG Strategy, itself initiated by one of the lowest income countries: the Marshall Islands (MEPC 68/5/1). The evolution toward adoption has been significantly influenced by a coalition of SIDS and LDC and high income countries, with the key compromise in the closing phases to accommodate the preference of emerging economies, including China and Brazil. Therefore, this factor may clarify and improve with a more accurate description. However, much also depends on how the EU’s positions and presentation evolve during this period. With internal EU tensions exposed by the abstention of Greece and Cyprus in the decision to defer (contradicting wider EU member state positions), and with the vindication of EU climate unilateralism created by the delay to adoption at the IMO, the direction this will change in remains one of the key uncertainties for the coming 12 months.

3.8 Misunderstanding of process and consequences of delay

Most countries prepared a position before the meeting on whether or not to adopt (or abstain). Many countries may not have undertaken a deep scenario analysis and prepared how they would react to the fluid and uncertain debates that ensued e.g. they may not have fully understood or prepared a clear position on deferment. Even during the roll call of the vote, there was some confusion with countries correcting their ‘yes’ to a ‘no’ as they understood whether the yes was an expression ‘for’ or ‘against’ deferment. This lack of clarity of the meeting deferment option, and its sudden appearance in the middle of the debate, may not have been fully understood. Similarly, there could have been less understanding in advance of the risk of choosing express over tacit acceptance.

Expected change for the positive – With the complete removal of uncertainty that the adoption decision is a ‘rubber stamp’, both the tacit/express and other procedural manoeuvres are likely to now receive greater attention and clarification so they can be better

⁷ <https://www.energyconnects.com/news/oil/2025/october/us-and-eu-spar-ahead-of-vote-to-cut-global-shipping-emissions/>

understood by all, when the meeting reconvenes in 12 months' time. There will remain a risk that further 'creativity' in preventing adoption will be developed.

4 What is the schedule from here, when will key details be clear?

The consequence of events means there is uncertainty around what happens next, and therefore what the schedule and timeline is from here. A number of scenarios can help to understand the range of possible ways forwards when the meeting reconvenes in 12 months:

- The NZF MARPOL amendment agreed at MEPC 83 is formally adopted with minimal adjustments (modified entry into force and effect dates, with the regulation becoming active from 1st Jan 2029)
- The meeting decides not to adopt the MARPOL amendment as agreed at MEPC 83, but instead open the text and make modifications to reach an agreement. This would be likely to constitute a change that is sufficiently substantive that the MARPOL amendment text will need to be re-approved. If reapproved in principle at the same meeting in 12 months' time, there would then need to be a further 6 months to an adoption decision. This means that there would in total be an 18 month delay, which could still see entry into force in 2028, in time for entry into effect in 2029. However, any further delay to reach an agreement on a new MARPOL amendment would mean prolonging entry into effect into 2030 or beyond.
- There is an agreement not to adopt the MARPOL amendment, and no apparent way forwards on 'mid-term measures' generally. This could include if there is a significant risk to changing the acceptance procedure to 'express' from 'tacit', setting a dangerous default for wider MARPOL amendments and IMO process. This would mean a more fundamental reconsideration of IMO GHG policymaking, and indefinite delay.

In the first two scenarios, the implementation of the NZF, or a variant of the NZF, necessitates the development and adoption of a series of guidelines, the list and indicative timeline of which are detailed in a document developed during a working group at MEPC.ES and agreed by the Committee just before the deferral vote was called. Given the adjournment of the formal adoption of the NZF MARPOL amendment, this intended timeline is now uncertain and is likely to be delayed, and the list of guidelines to be developed could also yet be amended.

A summary of the intended indicative timeline provided by the Secretariat is provided in Figure 7 (full details in MEPC/ES.2/WP.4). The work on most guidelines was already started in ISWG-GHG 20 and is planned to continue in 2026, for potential adoption in MEPC 84 (sustainable fuels certification schemes) and 85 (GFI, ZNZ, GFI Registry, fuel lifecycle labels, governing board of the Net Zero Fund). Some guidelines/themes are planned to take longer to develop up to 2028, such as the LCA guidelines or the full governing provisions of the fund.

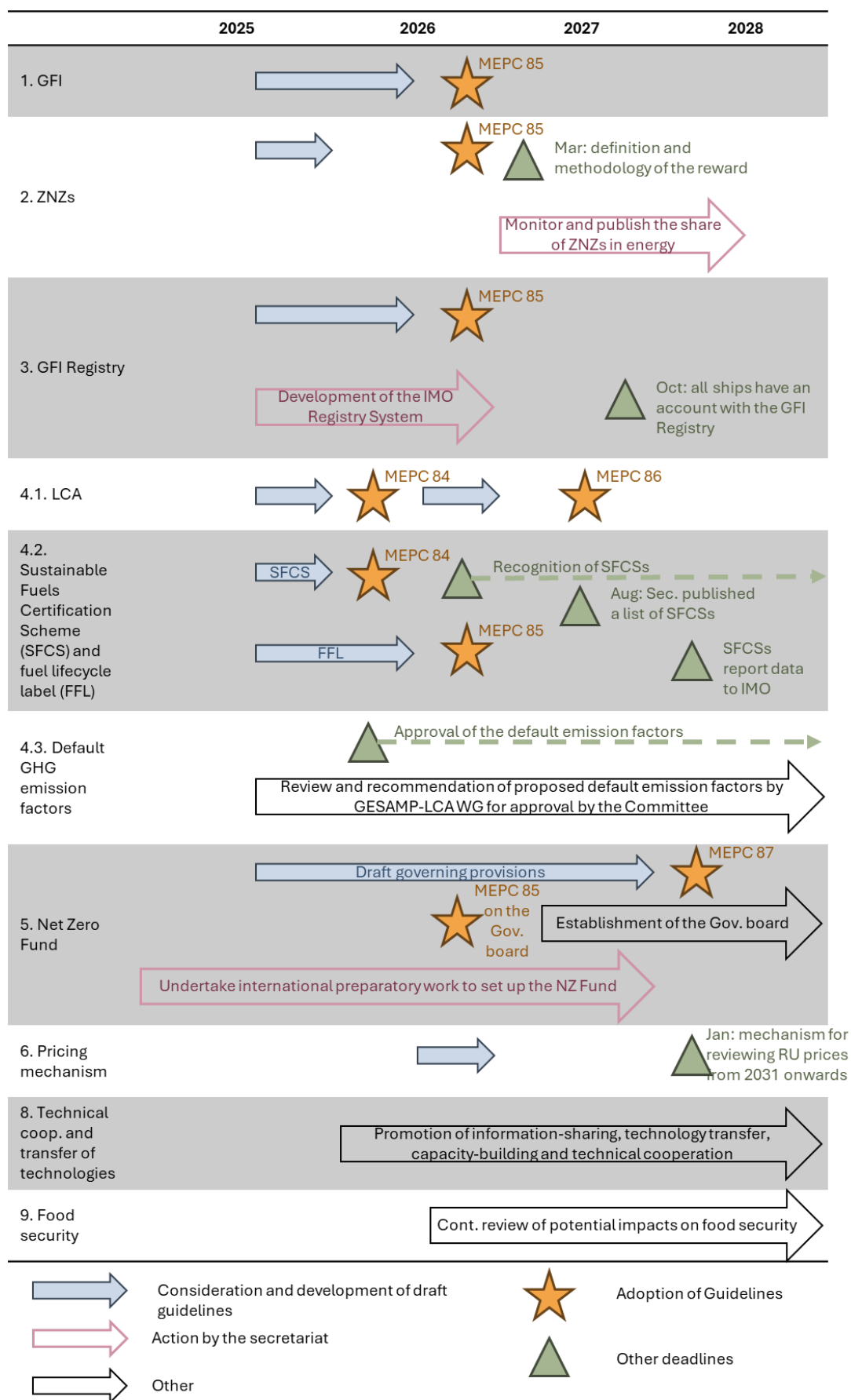


Figure 7: Summary of the indicative timelines on work streams. Details can be found in ISWG-GHG 20/1/1

5 What happened during ISWG-GHG 20?

In contrast to the MEPC.ES meeting, the ISWG-GHG 20 negotiations saw a return to a more traditional and collaborative dialogue between member states. Countries that had been negative or hesitant towards adoption the week before, offered detailed suggestions on how to finalise the guidelines. An initial attempt by a small minority of countries that the agenda for the meeting should not be adopted was refuted, and a full agenda discussion undertaken even for topics that were expected to be contentious given how they were discussed in previous debates (e.g. the guidelines/governing provisions of the Net Zero Fund).

The ISWG-GHG 20 meeting was not a decision point meeting, likely helping to set a less contentious atmosphere. Therefore on most items, the debates were inconclusive, instead asking for further work and progression of detail for discussion at the next meeting (ISWG-GHG 21 in April). However, the positions taken by countries in the debate provide some indication of the political viability of the options under discussion, and therefore point towards how guideline detail is likely to evolve. Whilst observer organisations were active across the debate, it is member states' that 'count' in determining, so analysis in this section is focused on member state positions only.

5.1 Discussion on ZNZ definition and reward mechanisms

The guidelines on ZNZ definition and reward mechanisms are a key determinant of how NZF will promote shipping's energy transition, and by association how fuel production investment and fleet investment decisions might be made in coming years. The MARPOL amendment text approved in principle in April provides specifications of a maximum GFI threshold (starting at 19gCO₂e/MJ), and points to the reward of ZNZ use, but provides little extra clarity.

The first debate on ZNZ related to questions around definition, with member state positions shown in Figure 8. A majority of countries that spoke thought the definition should only be the 19g threshold, and that it should not be further limited. However, there was also some support for the concept of differentiation of reward or eligibility for reward, with prioritisation of reward to 'long-term solutions'. Several countries clarified that they thought those long-term solutions should be e-fuels. It is therefore still uncertain as to whether e-fuels which are currently more expensive than biofuels with the potential for compliance with the 19g GFI limit. The current direction of the debate is that if there is to be clear support for e-fuels, this would be through differentiation of reward, rather than through definition of ZNZ. More countries expressed a preference against onboard CCS being considered to be a ZNZ, than those preferring for its consideration as ZNZ.

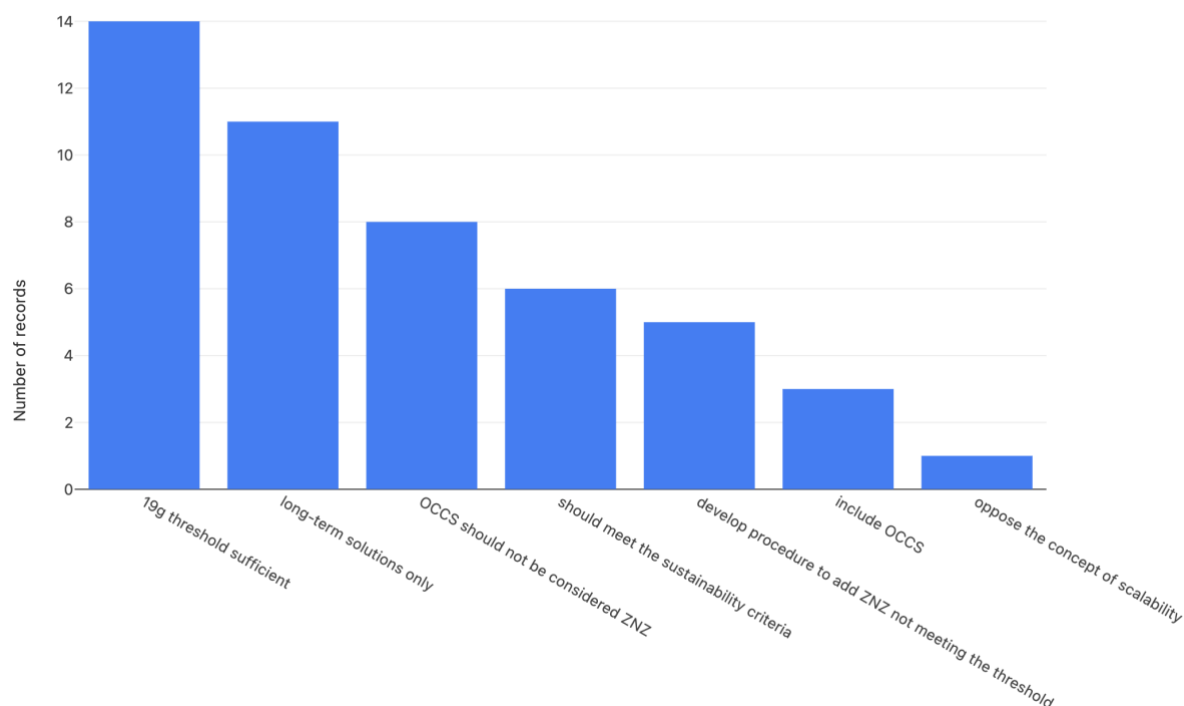


Figure 8: Views expressed in the discussion on the definition of ZNZ's and criteria for defining ZNZ

Further debates relating to ZNZ guidelines considered the design of ZNZ reward mechanisms. Here it was clear that many member states were open to further considering a range of options rather than express a clear preference for a certain mechanism design at this point. Reiterating comments made in the discussion on definition of ZNZ, several member states made it clear that there should be differentiated reward for different ZNZ's, providing reassurance that currently more expensive options (e-fuels) receiving reward could be competitive.

Previous rounds of discussion on reward saw many supporting the concept of a flat rate reward e.g. a fixed price reward determined by the IMO and given to all ships. This was not clearly supported at this meeting, with many referencing the concern/risk of a that type of reward mechanism creating an unlimited liability on the IMO's Net Zero Fund. Of countries expressing a firm position, the greatest support was for a reward based on an auction or Contract for Difference mechanism, which is expected to be one way to limit liability on the Fund. There were also some countries expressing specific concern about such mechanisms. The concept of marginal abatement cost was also discussed, referring to a reward which dynamically adjusts to the costs of different ZNZ's and the fluctuations in those costs over time (determined by a calculation process specified by the IMO). This reduces the uncertainty as to how a flat rate reward might close the cost gap for certain fuels. However it also does not resolve how the limitations on liability of the fund would be managed, and there was mixed support for and against such a mechanism.

Overall, it is clear that substantial further detail is needed for each of the different concepts, as well as further understanding and discussion of the options. As well as further rounds of discussion at ISWG-GHG 21 in April 2026, there is likely to be an IMO Expert Workshop

organised on the subject.

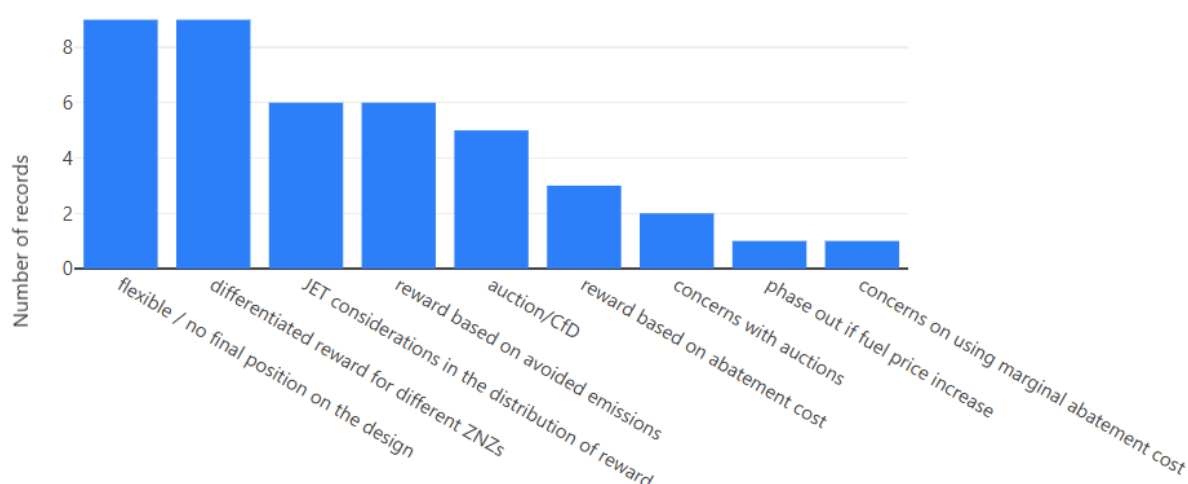


Figure 9: Views expressed on the design of the reward mechanism

5.2 Discussion on the Fund

Additionally, the IMO Net Zero Fund (the Fund) was once again discussed during ISWG. The Fund is a financial mechanism designed to collect contributions from shipping companies that exceed emissions thresholds, with the goal of funding rewards for low- and zero-emission shipping, encouraging innovation in clean marine fuels and technologies, and supporting a just and equitable transition, especially in developing countries. The Net Zero Framework (NZF) already provides some guiding context for the creation of the fund. More specifically, the NZF offers clarity on what must be included in the Fund's operational rules, or "governing provisions", of which the discussion started this week at ISWG. Therefore, the discussion focused on establishing these provisions, especially by addressing elements outlined in Draft Regulation 40 of the NZF, such as identifying the types of financing mechanisms and determining the composition of the Governing Board. This meeting served to gather first views on how to develop these core provisions necessary to make the Fund a functional tool.

Delegates widely discussed the draft regulations for the Fund, acknowledging input from a diverse range of countries, including those that expressed concern that such a discussion might be premature since the NZF has not been agreed upon yet. Although this was only a first collection of views and many details remained to be resolved, agreement could be seen on several essential elements that should be incorporated into the Fund's guidelines. The discussion centred on three specific questions regarding the rules and structure of the Fund.

The first question addressed the governing provisions of the Fund. The discussion established that while ultimately a full set of provisions is required, the Governing Board (draft regulation 40.5) was widely considered a priority for development, as it will oversee and manage the Fund. Additionally, areas of agreement included the need for core principles such as transparency, accountability, and conflict avoidance. Another important point of discussion was the specific representation of the Governing Board, with a focus on ensuring both gender and regional balance, potentially including dedicated seats for SIDS and LDCs. Already before ISWG, submissions on this topic had been prepared by different country groups that were then widely supported during the meeting. Overall, it was also emphasized that the provisions must establish clear mechanisms for distributing funds to support the transition, especially in developing countries, including SIDS and LDCs. Lastly,

many delegations called for a faster timeline to adopt the core provisions and appoint the Governing Board.

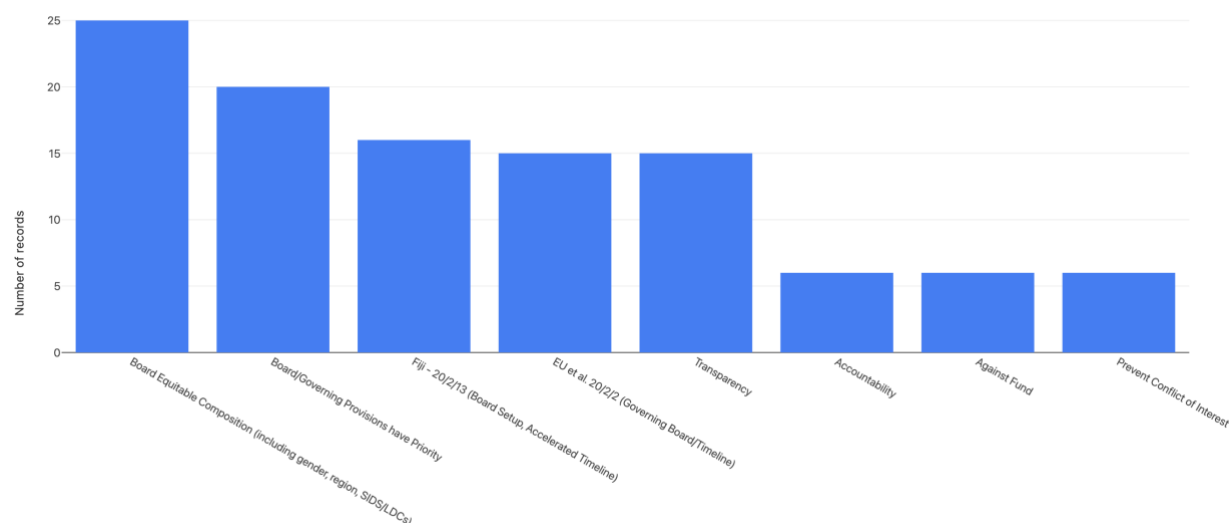


Figure 10: Views expressed on the governing provisions of the Net Zero Fund

The discussion regarding Question 2 — whether to implement interim arrangements while the Fund is being established/revenue can be disbursed, or to delegate authority to the Governing Board to develop governing provisions — highlighted a key substantive difference. The discussion revealed the reticence of many delegations toward temporary measures, whereas the discussion on the previous question placed strong emphasis on the importance of the establishment governing body. More specifically, while it is worth noting that half of the delegations that spoke on the topic expressed a need for interim solutions/early establishment of a body, the other half concluded that such arrangements are not an immediate priority for the Fund's development. Conversely, as shown under Question 1, there was strong agreement that establishing the Governing Board is a priority that must be addressed as soon as possible. It was not considered that this prioritized Board will need a clear set of rules to operate. During the discussion on question 2, many delegations also called for an Expert Workshop on the topic and emphasized the importance of consulting existing entities regarding the establishment of the Fund.

There is therefore a confusing and sometimes contradictory signal in this debate, including relating to the timeline over which greater clarity both on the fund and its process for evolving its governing provisions will be secured.

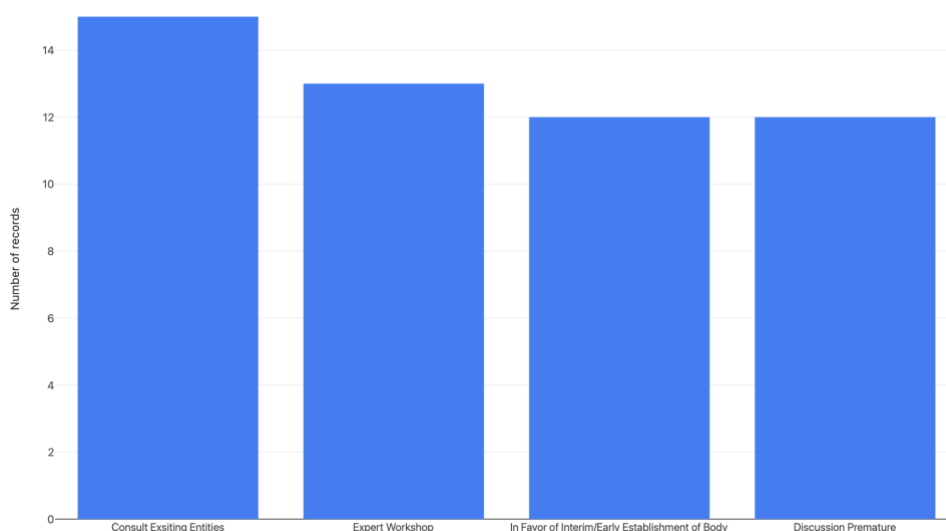


Figure 11: Views expressed on the question of an interim arrangement for the Net Zero Fund to operate

The discussion on Question 3 addressed how the disbursement categories listed in Draft Regulation 41 can be further refined and implemented to clarify which specific types of revenue distribution are eligible. Views on this issue have been compiled from this response in Figure 12, and more proposals are expected to be submitted for the next ISWG session. The many interventions highlight the importance of this topic, underscoring the need to consider distribution methods and to enhance funding mechanisms that facilitate the transition. Many pointed out that disbursement should promote a just and equitable transition and related sub-issues (the graph does not show all categories). Another key question that needs to be answered is whether and to what extent non-parties and the shipping industry should be involved.

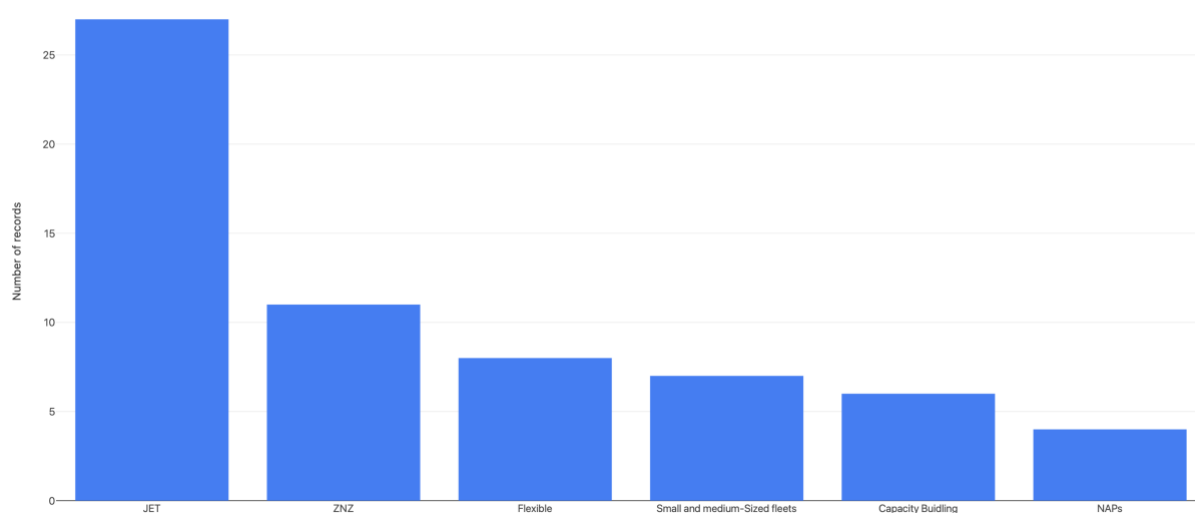


Figure 12: Views expressed on the use of revenues from the Net Zero Fund

5.3 Discussion on LCA guidelines and certification schemes

The LCA Guidelines define how each fuel is assessed for its greenhouse gas (GHG) intensity and include default emission values for different fuel types, along other

sustainability criteria. Following their adoption at MEPC 81, work is ongoing with GESAMP (the independent scientific advisory body) to refine these default values and review the current LCA methodology. Those guidelines are essential both for environmental integrity of the NZF, as well as for ensuring that the policy effectively promotes the energy transition.

The room discussed several themes related to the LCA guidelines, among which the recognition of certification schemes - i.e., the procedures and documentation used to verify the origin and environmental or sustainability credentials of fuels - and changes in the methodology and sustainability themes of the LCA guidelines. A minority of the delegations present in the room expressed an opinion, so that the views presented below represent a small sample of the countries.

On the technical elements needed to operationalize the fuel certification system, there was some convergence on the discussions on how to define and recognize certification bodies. The level of involvement of Member States in this process was considered, and countries generally showed flexibility on this point (meaning that appointing certification bodies could be something that becomes a process run by the IMO secretariat). There was growing convergence on potential reporting mechanisms for the fuel lifecycle label (information about fuel type, feedstock, production process, GHG emission factors and sustainability themes/aspects). However, some technical details remain open - for instance, whether reporting would be integrated within the IMO Data Collection System (DCS) or the future GHG Fuel Intensity (GFI) registry.

Opinions were more diverse on how to define the chain of custody, that is, the method by which certified attributes of a fuel are tracked along its supply chain. Some delegations favoured restricting traceability to the physical supply chain, ensuring that certified fuel can be physically followed from production to use. Others supported more flexible accounting approaches, such as:

- the mass balance system, which permits the mixing of certified and non-certified fuels provided that the total certified content is accounted for and verified across the supply chain; and
- the book-and-claim system, in which certification is decoupled from the physical product and transferred through tradable credits or certificates.

Several delegations expressed interest in conducting a preliminary study to assess how these different chain-of-custody models could be applied within the maritime sector (see Figure 13).

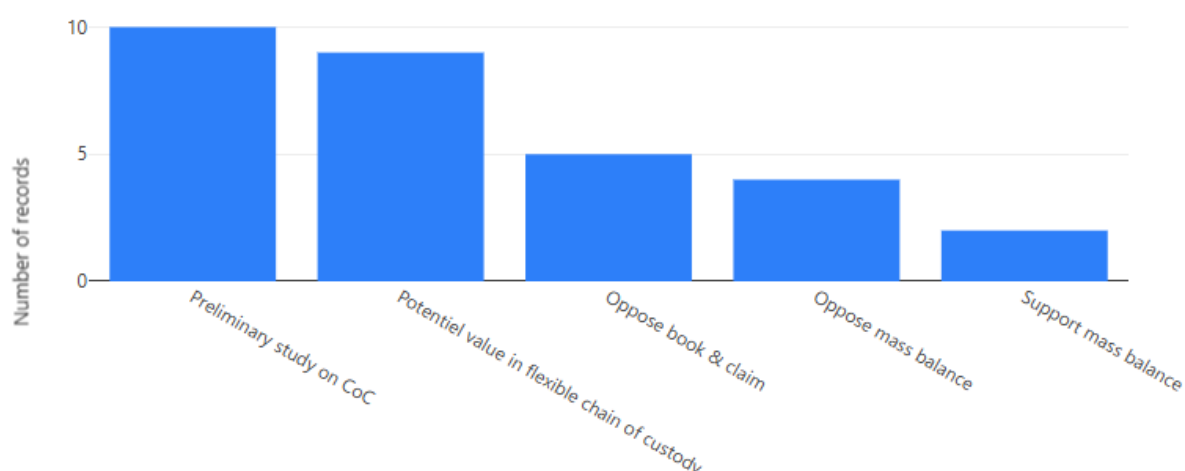


Figure 13: Positions on Chain of Custody models

There was broad support for maintaining GESAMP's role in providing methodological guidance and developing default values, though some delegations proposed methodological amendments. Main discussion themes included:

- Regional differentiation: Several delegations (three in support, one explicitly opposed, and two opposed to any methodological change) argued for introducing region-specific default emission factors and assessing sustainability criteria—particularly indirect land-use change (ILUC) risk—at a regional rather than global level.
- ILUC classification: currently, only two ILUC risk categories exist—high and low. One proposal suggested adding an intermediate category of ILUC risk, which would be permitted by default unless proven unsustainable in the short-term. Delegations supporting regional differentiation and the intermediate ILUC classification generally justified their position by emphasizing the critical role of biofuels in the energy transition and their potential for sustainable production.
- Sustainability criteria: there were exchanges on whether sustainability criteria should be quantitative or qualitative, and on their scope and level of stringency. Furthermore, some delegations advocated for a broad set of qualitative criteria, including environmental (ILUC, biodiversity), social and economic criteria (e.g. land use rights, food security).

There was no agreement on any of those themes, with the counts of views expressed plotted on Figure 14. However, there was a shared view among many delegations that further research and dialogue are needed, with calls to organize an expert workshop and/or continue discussions in the Correspondence Group.

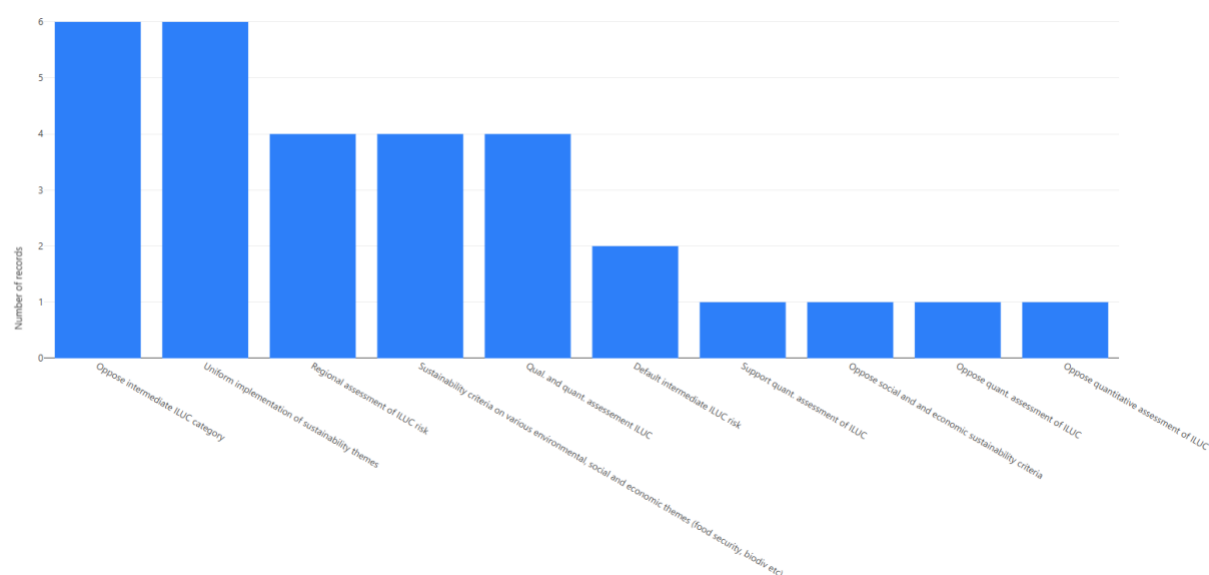


Figure 14: Views expressed in the room related to the sustainability themes in the LCA guidelines

5.4 Discussion on the GFI registry

The GFI registry is the component in the NZF that provides the exchange of information relating to both the GHG emissions, but also the compliance and resolution of compliance with the GFI limits (base and direct compliance).

The discussion included the consideration of a number of submissions that attempted to clarify how the registry would account for certain specifics – not just the LCA information, but also how renewable energy and electricity directly used on board, would be factored into the equations in the MAPROL amendment. These proposals were generally not seen as

controversial, and it's likely therefore that the GFI guidelines will be inclusive and therefore incentivising of onboard renewable energy and electricity use (although the specifics will be the subject of further finalisation).

One specific proposal was to consider whether a multiplier should be incorporated in the registry, as a means to provide separate or additional incentivisation of e-fuels. This concept would provide stronger incentivisation than provided purely by Surplus Units, by increasing the number of Surplus Units. Separate to the discussion under the GFI registry, there was also some suggestion of the use of a multiplier as a means to differentiate the level of reward (a proposal made by Korea). The term 'multiplier' appears in a few different concepts, but the focus here is in the concept of multiplying the number of SU's within GFI registry guidelines, for ships using ZNZ.

Whilst many member states came in to support further considering a multiplier (often supporting it as a multiplier on ZNZ rather than explicitly on e-fuels), there were also clearly opposing member states who expressed concerns relating to environmental integrity (all else being equal, a multiplier will increase GHG emissions), and the consequence of the multiplier for just and equitable transition.

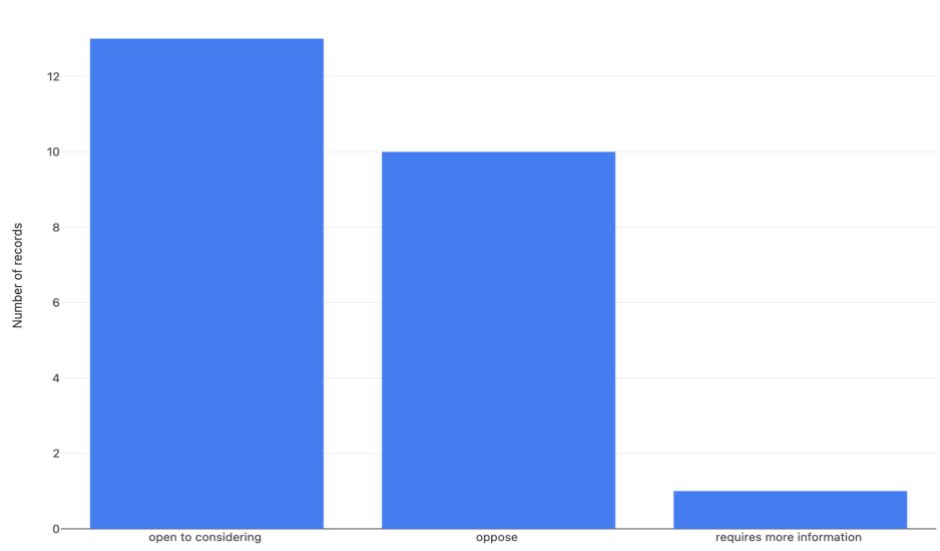


Figure 15: Views expressed on inclusion of an e-fuels multiplier.

Another proposal that came forwards and similarly received a mixed reaction, was the proposal to use the GFI registry to apply constraints on the Surplus Unit supply. The concept being to minimise the risk of low SU price, and ensure a consistent, effective and predictable incentivisation of compliance with the GFI limits. Broadly, there was little support for this, indicating it is unlikely to see further development.

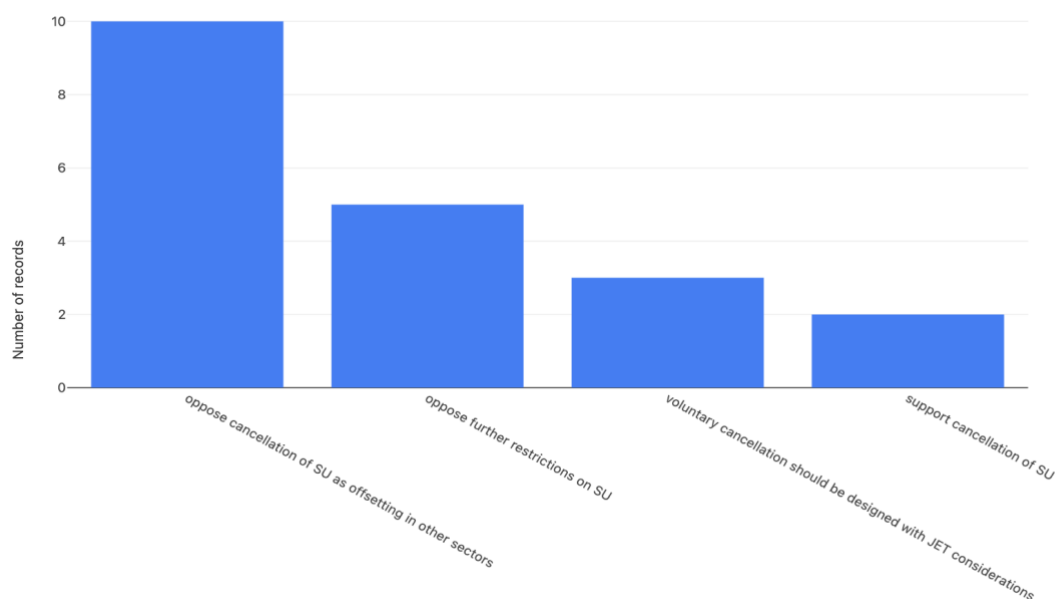


Figure 16: Views expressed on use or cancellation of SUs as compliance approaches

5.5 5th GHG study

The meeting advanced a discussion on the terms of reference for the 5th IMO GHG Study. This is on track for finalisation at MEPC 84, and is likely to be similar in form to the previous IMO GHG Studies (covering both recent trends in GHG emissions, as well as projections of future trends). Whereas if there had been adoption of the NZF at MEPC.ES, the 5th IMO GHG Study would have unambiguously been carried out on the NZF, there is now an uncertainty and further delay to adoption would mean the future projections component would likely not include the NZF. The team undertaking the work would be decided upon during 2026, with work undertaken from late 2026 into 2027.

6 Appendix – further breakdown of voting results

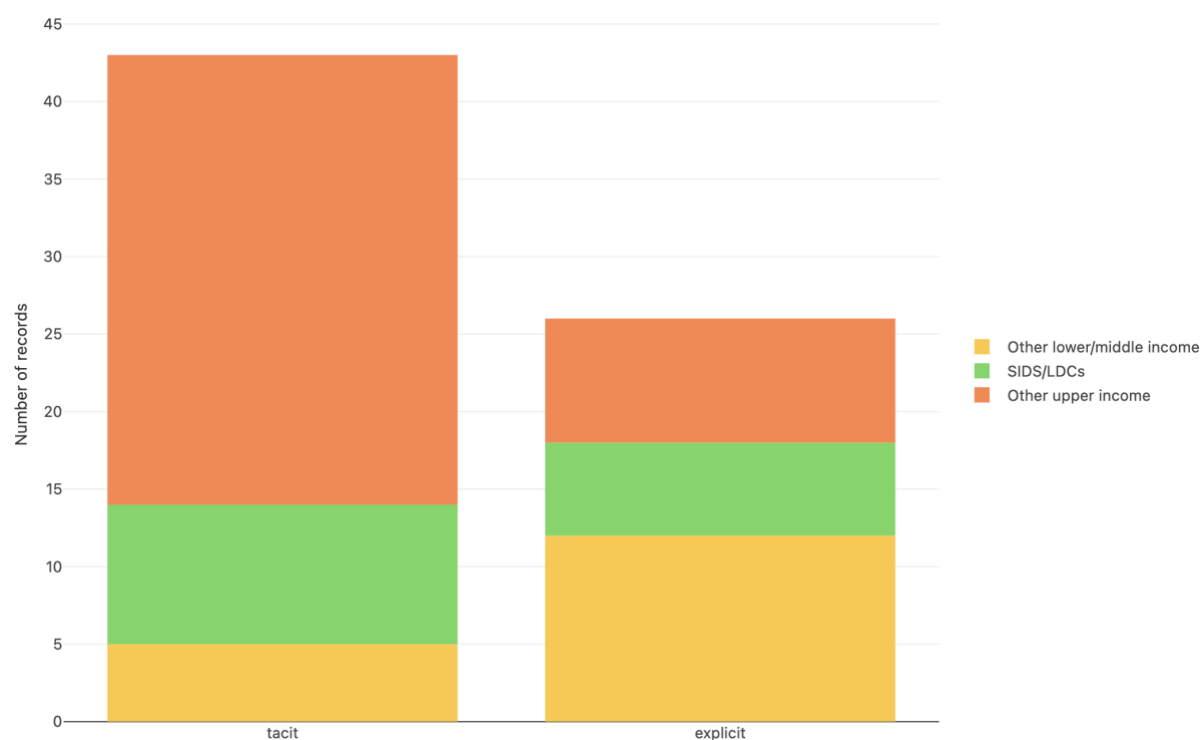


Figure 17: Views expressed on the acceptance methods by income categories.

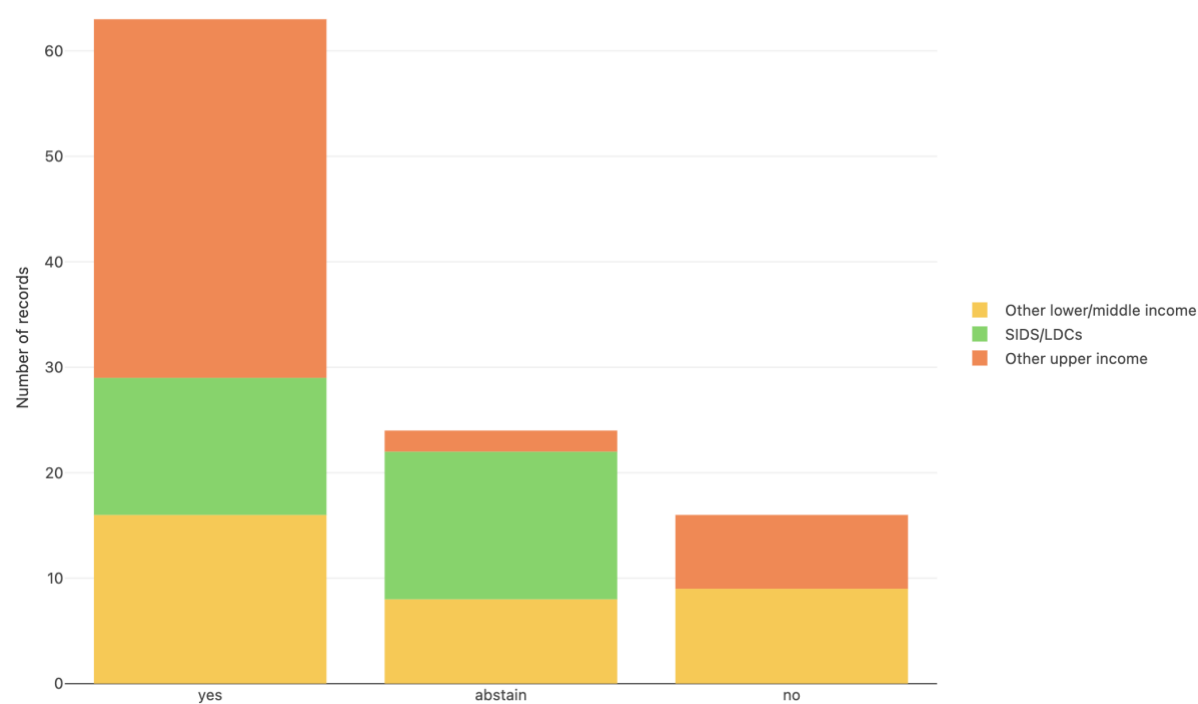


Figure 18: Distribution of MEPC 83 voting results on the agreement in principle of the NZF across Member States, grouped by income category.

Table 1. Summary of Country Votes on the Adjournment Motion during the MEPC Extraordinary Session.

Yes	No	Abstain
Algeria	Australia	Antigua and Barbuda
Angola	Belgium	Barbados
Argentina	Brazil	Cambodia
Azerbaijan	Bulgaria	Côte d'Ivoire
Bahamas	Canada	Cyprus
Bahrain	Chile	Georgia
Bangladesh	Cook Islands	Greece
Belize	Croatia	Haiti
China	Czechia	Honduras
Colombia	Democratic Republic of the Congo	Indonesia
Democratic People's Republic of Korea	Denmark	Japan
Ecuador	Estonia	Malawi
Egypt	Fiji	New Zealand
Eritrea	Finland	Papua New Guinea
Ethiopia	France	Philippines
Ghana	Germany	Republic of Korea
Guatemala	Iceland	Senegal
India	Ireland	Sri Lanka
Iran (Islamic Republic of)	Italy	Suriname
Iraq	Kiribati	Togo
Israel	Latvia	Uganda
Jamaica	Lithuania	
Jordan	Luxembourg	
Kazakhstan	Malta	
Kenya	Marshall Islands	
Kuwait	Mexico	
Lebanon	Monaco	
Liberia	Montenegro	
Libya	Namibia	
Madagascar	Netherlands (Kingdom of the)	
Malaysia	Norway	
Morocco	Palau	
Nigeria	Poland	
Oman	Portugal	
Pakistan	Romania	
Panama	Samoa	

Paraguay	San Marino	
Peru	Seychelles	
Qatar	Singapore	
Russian Federation	Slovenia	
Saint Kitts and Nevis	Solomon Islands	
Saint Vincent and the Grenadines	South Africa	
Saudi Arabia	Spain	
Serbia	Sweden	
Sierra Leone	Switzerland	
Somalia	Tonga	
Thailand	Tuvalu	
Trinidad & Tobago	United Kingdom of Great Britain and Northern Ireland	
Tunisia	Vanuatu	
Türkiye		
United Arab Emirates		
United Republic of Tanzania		
United States of America		
Uruguay		
Venezuela (Bolivarian Republic of)		
Viet Nam		
Yemen		



THE BARTLETT
ENERGY INSTITUTE

ucl.ac.uk/bartlett/energy/research/shipping

www.shippingandoceans.com