



IMO POLICY BRIEF

Global Measures to Reduce GHG Emissions from Shipping: Overview, Updates, and Outstanding Questions

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5 KEY OBSERVATIONS

These meetings were not policy decision points in the regulatory timeline. Rather, they offered an opportunity for further negotiations on the adoption of binding measures to reduce greenhouse gas (GHG) emissions from maritime shipping. However, time is growing increasingly constrained to develop measures for adoption in 2025, which is the timeline the International Maritime Organization (IMO) committed to in the [2023 IMO Strategy on Reduction of GHG Emissions from Ships](#) (2023 Strategy).

All measures proposals remain on the table, including emissions pricing and trading systems, yet differences on fundamental issues persist. Divergent positions on key issues highlight several critical questions about the architecture and implementation of measures that are yet to be answered.

Global shipping decarbonization will be regulated by a legally binding MARPOL Annex VI¹ amendment and a series of guidelines. Member states agreed to a draft framework of headings that will guide intersessional work and drafting of legal text during the IMO meetings in autumn 2024. This framework is not binding, and its provisions are subject to change.

The results of the [Comprehensive Impact Assessment](#) (CIA) process are key for many member states moving forward. Once these results, which are due for finalization and submission in a report to the IMO at the autumn meetings are available, we can expect member states to begin taking firmer positions on the proposed measures.

Timely development of the [Life Cycle Assessment Guidelines](#) (LCA Guidelines) will be critical to implementation of the binding measures. Work on this is proceeding intersessionally on parallel tracks in several groups. It is not yet clear how these streams of work will be brought together to finalize a comprehensive set of guidelines.

1. Introduction

This policy brief provides an overview of the IMO's efforts to reduce GHG emissions from international maritime shipping. It also provides updates from the 16th session of the IMO's Intersessional Working Group on the Reduction of GHGs from Ships (ISWG-GHG 16) and the discussions under Agenda Item 7 (Reduction of GHGs from Ships) at the 81st session of the Marine Environment Protection Committee (MEPC 81). These meetings were held from March 11 to March 15, 2024, and March 18 to March 22, 2024, respectively, and mark the latest point on the path towards the IMO's adoption of globally binding GHG measures.

¹ The International Convention for the Prevention of Pollution from Ships (MARPOL) was adopted in 1973. [MARPOL](#) has six annexes, and Annex VI regulates GHG emissions from ships. It currently has 105 country signatories, representing 96.70% of world tonnage.

The IMO's work on these measures is framed by commitments in the recently adopted 2023 Strategy, and is also guided by the [Work Plan](#) and the CIA process (further explained in [Section 4](#)). **Table 1** below provides an overview of how the development of measures can be understood based on the commitments made in the 2023 Strategy.

| What elements should the measures include? | What should the measures do? | What is the timeline for development of the measures? |
|---|--|---|
| <p>In the 2023 Strategy, member states committed to develop and finalize measures comprised of:</p> <ol style="list-style-type: none"> 1. a technical element, namely a goal-based marine fuel standard regulating the phased reduction of the marine fuel's GHG intensity; and 2. an economic element, on the basis of a maritime GHG emissions pricing mechanism.² | <p>There are a number of key objectives the measures should fulfill, <i>inter alia</i>:</p> <ul style="list-style-type: none"> • Meet the 2023 Strategy's levels of ambition and interim checkpoints for emissions reduction from international shipping³ • Effectively promote the energy transition of the shipping sector • Provide needed incentives for the world fleet • Contribute to a level playing field and a just and equitable transition • Take into account the well-to-wake GHG emissions of marine fuels as addressed in the LCA Guidelines.⁴ | <p>Timeframe set out in the 2023 Strategy:</p> <ul style="list-style-type: none"> • Approve measures at MEPC 83 (spring 2025) • Adopt measures at an extraordinary one or two-day MEPC meeting six months after MEPC 83 (autumn 2025) • Measures enter into force 16 months after adoption in 2027.⁵ |

Table 1: Key points of the 2023 Strategy that frame the development and adoption of binding measures

In parallel with the development and finalization of the measures, the CIA process has been ongoing since its initiation at MEPC 80 in July 2023. This process assesses the potential negative impacts of candidate measures on the global shipping fleet and on member states. The goals of the CIA process are to better inform the policy discussions on the proposed measures, and to allow disproportionately negative impacts (DNI) on states to be assessed and addressed, as appropriate, during the adoption of measures. More information on the CIA process and updates from the March meetings are detailed in [Section 4](#).

² 2023 Strategy, page 8.

³ 2023 Strategy, page 6. For more detail see 2023 Strategy at a Glance on [page 18](#).

⁴ 2023 Strategy, page 8. The overall objective of a well-to-wake approach is to reduce GHG emissions within the boundaries of the energy system of international shipping and prevent a shift of emissions to other sectors by ships operating on fuels that combust with zero- or near-zero GHG emissions but were produced using fossil fuels.

⁵ 2023 Strategy, page 11. The timeline for the development, adoption, and entry into force of the measures is a function of the IMO's *Tacit Acceptance* procedure for [amendments to Annexes of Conventions](#). Each stage of the regulatory process has been scheduled to meet the timeline that complies with this procedure.

Related work on the Guidelines on Life Cycle GHG Intensity of Marine Fuels (LCA Guidelines), which were adopted at MEPC 80 but require further development, has also been ongoing. The LCA Guidelines will support the implementation of the measures and more information about the Guidelines, as well as updates from the March meetings, is provided in [Section 5](#).

Although the March meetings were not a policy decision point, they offered opportunities to progress the Organization’s work on the measures and LCA Guidelines. **Table 2** below outlines the work completed by the GHG Working Group and the MEPC over the two weeks.

| Week 1 (ISWG-GHG 16) | Week 2 (MEPC 81) |
|--|--|
| <ul style="list-style-type: none"> • CIA updates presented • Proponents of measures presented updates on their proposals • Four rounds of negotiations on the following topics: the goal-based global marine fuel standard; flexibility and compliance options; maritime GHG emissions pricing mechanism; remaining work and planning for future discussions • LCA Guidelines discussion on the certification of methane slip, Indirect Land Use Change (ILUC) risk classification, and regional default values • Discussion about regulation of onboard carbon capture and storage • Presentation of the Chair’s summary and finalizing the GHG Working Group’s report to MEPC 81 | <ul style="list-style-type: none"> • Some open discussion on further development of the measures • GHG Working Group Chair presented a paper on an “IMO Net-Zero Framework”, which listed potential headings for a MARPOL amendment • The Committee drafted Terms of Reference⁶ for the following: <ul style="list-style-type: none"> – CIA expert workshop (<i>estimated July</i>) – ISWG-GHG 17 (<i>autumn 2024</i>) – Expert group for the LCA Guidelines (GESAMP-LCA) (<i>report due spring 2025</i>) – Correspondence group for LCA Guidelines (<i>report due spring 2025</i>) • Drafting and approval of the GHG Working Group and the Committee reports |

Table 2: Summary of ISWG-GHG 16 and MEPC 81 discussions and outcomes

The remainder of this policy brief provides an overview of the progress made in developing measures and the LCA Guidelines, as well as the status of the CIA. [Section 2](#) contains a table of the active measures proposals and their proponents. [Section 3](#) divides the measures into components detailing their purpose and status in negotiations. [Section 4](#) provides additional information about the CIA process, and [Section 5](#) highlights updates on development of the LCA Guidelines. Concluding comments and reflections are offered in [Section 6](#).

⁶ Terms of Reference are drafted and agreed to in order to guide the work of a subsidiary body like a correspondence group or working group by organizing the work under a number of titles.

2. Active Mid-Term Measures Proposals

Development of the measures proposals began well before the adoption of the 2023 Strategy. Over the past few years, a number of proposals have been submitted by various member states, discussed at IMO meetings, amended, and resubmitted to the following meeting. Thus, the proposals are in a continual state of evolution. To simplify and provide a comprehensive overview, **Table 3** below details the active proposals at the point of the March meetings.⁷

⁷ Norway had previously proposed a framework for an emissions trading system (ETS), which had been kept active for several meetings but received little explicit support from other members. In advance of the March meetings, Norway joined the co-sponsorship of the proposal put forward by Argentina, Brazil, China, South Africa, UAE, and Uruguay (ISWG-GHG 16/2/13 and 16/2/14). As such, we no longer consider the Norwegian ETS proposal to be active.

| Proponents from Submissions | Name | Particulars of the Proposal |
|--|--|---|
| Argentina, Brazil, China, Norway, South Africa, UAE, and Uruguay | International Maritime Sustainable Fuels and Fund (IMSF&F) | Integrated technical and economic elements: fuel standard reducing GHG intensity of marine fuels with flexibility (trading) mechanism. GHG price applies only to ships that are not compliant with fuel standard through purchase of necessary units to comply. Revenues can be used for several purposes. |
| China | Pooling Compliance approach | Vessel pooling intended to be combined with the IMSF&F measure (above) to ease the trading of surplus units, which are generated by overcompliance with the fuel standard and can be traded with non-compliant ships. |
| Belize, Fiji, Kiribati, Marshall Islands, Nauru, Solomon Islands, Tonga, Tuvalu, and Vanuatu | Global GHG Fuel Standard and Global GHG Levy | <ol style="list-style-type: none"> 1. Technical element: Fuel standard reducing GHG intensity of marine fuels (no trading mechanism). 2. Economic element: Global GHG pricing mechanism applying a cost to GHG emissions from ships on well-to-wake basis. Revenues can be used for several purposes. |
| EU | Greenhouse Gas Fuel Standard with Flexibility Mechanism and emissions pricing mechanism | <ol style="list-style-type: none"> 1. Technical element: Fuel standard reducing GHG intensity of marine fuels with flexibility (trading) mechanism. Vessel pooling is an option for easing the trading of flexibility compliance units, which are generated by overcompliance with the fuel standard and can be traded with non-compliant ships. 2. Economic element: Separate Global GHG pricing mechanism applying a cost to GHG emissions from ships on well-to-wake basis. Revenues can be used for several purposes. |
| International Chamber of Shipping (ICS), Liberia, and Bahamas | Fund and Reward (Feebate) Mechanism with Zero Emission Shipping Fund (ZESF), and IMO (GHG) Maritime Sustainability Fund (IMSF) | Proposal for economic element: Feebate that puts a per tonne price on GHG emissions from ships and prioritizes use of revenue to rewarding use of eligible fuels. It also includes a separate fund for other purposes. |
| ICS and International Bunker Industry Association (IBIA) | Simplified Global GHG Fuel Standard with an energy pooling compliance mechanism | Proposal for technical element: Simple fuel standard reducing GHG intensity of marine fuels with vessel energy pooling to average compliance across groups of ships. Intended to be combined with the feebate above proposed by ICS, Liberia, and Bahamas. |
| Canada | Maritime GHG pricing mechanism | Proposal for economic element: Price per tonne applied to the tank-to-wake GHG emissions of ships. Price is determined by adjusting a universal GHG price signal according to each fuel type and the pathway's well-to-wake emissions profile. Revenues would be disbursed through funds for several purposes. |
| Japan | Zero-Emission Shipping Incentive Scheme | Proposal for economic element: Feebate that puts a per tonne price on GHG emissions from ships and prioritizes use of revenue to rewarding use of eligible fuels with option for using some revenue for other purposes. |
| World Bank | Carbon Revenues Distribution Framework | Proposal for part of the economic element: a possible framework to disburse revenue generated as a byproduct of GHG emissions price. |
| World Shipping Council | Green Balance Mechanism | Proposal for economic element: Feebate variant. Emissions price and rewards are linked to a level set at a specific percentage above the compliance level of a fuel standard. Intended to be combined with other measures, particularly a fuel standard reducing GHG intensity of marine fuels. |

Table 3: Overview of active IMO measures proposals as of March 2024

3. Proposal Components and Outstanding Questions

This section will look at the measures through the lens of the possible design components, explaining their intended purpose and providing an update on their status in negotiations. We have also identified outstanding questions that will be important to consider as the IMO continues to build a binding framework to regulate GHGs from shipping. The design components covered are a *global GHG fuel standard, flexibility (trading) mechanisms and other compliance options, a GHG emissions pricing mechanism, and implementation, reporting, and verification elements.*

3.1 COMPONENT 1: Global GHG Fuel Standard

The technical element of the binding measures will be a global GHG Fuel Standard (GFS or fuel standard) for international shipping that mandates the reduction of the GHG intensity of marine fuels over time, thereby reducing overall GHG emissions⁸ from ships. Considered a type of command-and-control measure, the IMO previously established this type of regulation when it adopted the [2020 IMO Fuel Oil Sulphur Limit](#). Given this precedent, establishing a fuel standard is within the so-called “comfort zone” of the IMO and, as a result, of all the measures proposals, this has achieved the broadest and most consistent support from member states and IMO observer organizations. Indeed, based on interventions across multiple IMO meetings, there is little doubt that the global shipping regulations will include a GFS. However, the exact architecture of the GFS and corresponding GHG intensity reduction levels are still being negotiated.

3.1.1 What happened at the March meetings?

A submission by the European Union (EU) and United States proposed a methodology to set the GHG intensity reduction trajectory needed to meet the levels of ambition and indicative checkpoints in the 2023 Strategy⁹, and two submissions from observer organizations offered example GHG intensity reduction trajectories.¹⁰ However, there was no decision on the required GHG intensity reductions needed for the fuel standard. Much of the discussion related to the GFS was focused on potential compliance and flexibility mechanisms as discussed below in [Section 3.2](#).

⁸ The scope of GHG emissions covered by candidate measures is any release of carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) into the atmosphere.

⁹ Submission ISWG-GHG 16/2/8.

¹⁰ A submission (ISWG-GHG 16/2/17) from the WWF and Pacific Environment offered three sets of GHG intensity reduction levels from a 2019 baseline year that would be needed from 2027 to 2050 to: 1) meet the 2023 Strategy minimum targets; 2) the ‘striving for’ indicative checkpoint targets; or 3) to keep shipping on a proportional 1.5°C degree-compatible emissions trajectory. A separate submission (ISWG-GHG 16/2/19) from the Clean Shipping Coalition (CSC) presented GHG intensity reduction trajectories for fuels with either the current Carbon Intensity Indicator (CII) regulation or a strengthened CII.

3.1.2 Fundamental outstanding questions

- Will compliance with the GFS account for the full life cycle of marine fuels, including upstream emissions from production (e.g., well-to-wake)? How will this accounting be accomplished?
- At what point in the regulatory development process will the IMO establish the trajectory to reduce GHG intensity levels? What will this trajectory look like, and how many years of the transition will be covered?
- How will the IMO ensure that the GHG intensity levels align with the 2023 Strategy's emissions reduction targets? Will the intensity reductions be aligned with the minimum targets or the 'striving for' targets? (See Strategy at a Glance table on [page 18](#) for these targets.)
- What is the functional relationship between the GFS and the pricing mechanism? What is the optimum calibration between the two elements that will allow for full decarbonization of the international shipping sector?
- Will the GFS be structured as a simple fuel standard, or will it have a more complex structure and compliance options? (See [Section 3.2](#) for an explanation and additional details about the implications of this issue.)

The answers to these questions will provide a more predictable roadmap for the sector by clarifying what GHG reductions will be needed and by when and will help determine the efficacy of the fuel standard to meet the goals of the 2023 Strategy. Addressing these issues will also allow the IMO to determine how closely aligned shipping's transition is to the Paris Agreement's 1.5 °C temperature limits.

3.2 COMPONENT 2: Flexibility (Trading) Mechanism and Other Compliance Options

While member states and observer organizations at the IMO agree that a base component of the measures will be a GFS, there is not yet agreement on the second component: whether the GFS should be accompanied by a flexibility mechanism or other alternative options to meet compliance requirements. It should be noted that the terminologies *flexibility mechanism* and *compliance options* are being used somewhat interchangeably in the IMO negotiations, however, we perceive some differences in how they are used, and for the sake of clarity we offer a simplification:

- **Flexibility Mechanism:** The term *flexibility* or *flexibility mechanism* is most often used with regard to the EU Greenhouse Gas Fuel Standard (EU GFS) and the International Maritime Sustainable Fuels and Fund (IMSF&F) proposals, which each apply a trading scheme to their fuel standards.
 - Each of these proposals sets a GFS compliance level that will be reduced over time. Ships that utilize a fuel that has a lower GHG intensity than the GFS compliance level requires will earn *emissions units*.¹¹ Emissions units are similar to emissions credits, and ship owners can then sell these units to ships that are unable to meet the GFS compliance level. Non-compliant ships will need to purchase enough of these units to resolve their compliance deficit. Doing so ensures that a financial penalty is applied while these ships are in a non-compliant status, whilst at the same

¹¹ In the EU GFS measure proposal, units earned for "overcompliance" with the fuel standard are called *flexibility compliance units*, and in the IMSF&F measure proposal, these same units are termed *surplus units*.

time allowing them to purchase a status of compliance to continue operating. For the sellers of such units, the trading offers an opportunity to rebalance the costs incurred of using fuels beyond the level of compliance.¹²

- The second part of the trading scheme is the release of *remedial units*, similar to allowances, into the shipping sector. These are included in the system design in case there are not enough over-compliant ships producing emissions savings and earning tradable emissions units to cover the non-compliant ships. *Remedial units* are also designed to prevent over-compliant ships from over-accumulating units to increase unit prices.
- **Additional compliance options that could be used with the flexibility mechanism:** Options include banking of units (not remedial) for future use and vessel pooling to ease trading of units. These are both options included in the EU GFS and IMSF&F proposals.
- **Additional compliance options that could be used with a simplified GFS¹³:** a fuel non-availability reporting option¹⁴, a restricted release of allowances to the sector, or vessel pooling on an energy basis, whereby the attained GHG intensity of ships' fuel would be measured as part of a pool, rather than on an individual basis.

Vessel pooling is the grouping of ships and has now become a feature of multiple proposals. There appears to be two options for its use: 1) facilitating the trading of units in the flexibility mechanism; or 2) used as a compliance option for a simplified fuel standard by averaging compliance with a fuel standard across a group of ships (so-called energy pooling).

The purpose of a flexibility mechanism and other compliance options appears to be to ensure that existing ships can keep operating during the transition, even if compliant fuels are scarce or access to these fuels is geographically limited. Additionally, given the long lifecycle of ships (20–30 years)¹⁵, it is expected that the flexibility mechanism and/or compliance options will assist the fleet through the natural turnover of ships.

3.2.1 What happened at the March meetings?

The March meetings included a round of discussion on flexibility mechanisms and compliance options for the fuel standard. A majority of measures' proponents were in favor of adding a flexibility (trading) system to the fuel standard.¹⁶ However, there was significant opposition to this from a group of Pacific and Caribbean Small Island Developing States (SIDS) that called for a simplified fuel standard instead. The International Chamber of Shipping (ICS) and International Bunker Industry Association (IBIA) similarly support a simplified fuel standard. Thus, this remains a point of fundamental divergence.

¹² This is not seen as a reward for overcompliance, which is being considered separately as part of the economic measure, but as the rebalancing of the costs which are incurred to operate on fuels beyond the regulatory requirement.

¹³ A *simplified GFS* is a fuel standard proposal that does not include an emissions trading scheme.

¹⁴ There is IMO precedent for these types of compliance options. The 2020 IMO Fuel Oil Sulphur Limit allows for reports known as FONARs (Fuel Oil Non-Availability Report).

¹⁵ As of early 2023, the average ship's age was 22.2 years. See [UNCTAD Review of Maritime Transport 2023](#).

¹⁶ The EU have included a flexibility (trading) mechanism in their proposal, as have the proponents of the IMSF&F proposal.

3.2.2 Fundamental outstanding questions

- What configuration of flexibility mechanisms or compliance options will ensure sector-wide compliance with a stringent fuel standard during the early phase of the transition? Is the optimum design a fuel standard with the flexibility mechanism, or is it the simplified fuel standard with other compliance options?
- How will the environmental integrity of the fuel standard be maintained if a complex trading scheme is adopted that includes the release of remedial units? Will the nature of a credit trading system risk the certainty of GHG emissions reductions associated with a fuel standard?
- At what point in the regulatory development process will the price of the remedial units under a flexibility mechanism be set? Will the price be set by the IMO and what criteria will be used? Will the price of the remedial units be periodically reviewed?¹⁷
- If the measures allow flexibility or surplus units earned through overcompliance to be banked for future use, how long will they remain available for use?
- What is the purpose of vessel pooling in the design of the measures? What rules will govern the grouping of ships?
- If a simplified GFS is adopted, what additional compliance options would be added to the design? How will the IMO balance the need for sector-wide compliance and the environmental integrity of the standard?

The answers to these questions will not only help determine the structure of the GFS but may raise or resolve issues around environmental integrity and implementation of the measures, particularly with respect to the verification of emissions reductions and reporting requirements. Furthermore, the design of the GFS, and how any trading or pooling mechanisms are administered, will have significant bearing on the sector's ability to meet the 2023 Strategy's objectives (see [Table 1](#)).

3.3 COMPONENT 3: GHG Emissions Pricing Mechanism

The current proposals suggest two approaches¹⁸ to GHG emissions pricing: 1) a pricing mechanism integrated with the fuel standard; or 2) a separate but complementary pricing mechanism.

- **Integrated proposal:** Under this proposal, the pricing mechanism is integrated with the fuel standard and puts a price on non-compliance only. This means that ships that cannot comply with the fuel standard must purchase either surplus units from ships operating on fuels with a lower GHG intensity level than the mandated compliance requirements, or purchase remedial units from the IMO, which are similar to allowances. This is the approach put forward by the IMSF&F proposal. Revenues generated from the sale of remedial units would be prioritized to reward claims from surplus units (when these units are not transferred to non-compliant ships). Any remaining revenue could be used to provide funding for

¹⁷ For example, one proposal sets these prices at the start of a reporting period, *i.e.*, the beginning of a compliance year (Submission ISWG-GHG 16/2/13).

¹⁸ There is also a proposal by the World Shipping Council for a feebate variant called the Green Balance Mechanism (Submission ISWG-GHG 16/2/4). However, this proposal is linked to the fuel standard and is not a separate pricing option.

research and development, technology transfer, in-sector capacity building, and to mitigate any negative impacts on developing countries resulting from implementation of the measures.¹⁹

- **Separate but complementary system²⁰:** Under this approach, a separate pricing mechanism would apply a price per tonne of CO₂e emitted to all ships above a certain size.²¹ The purpose of this type of proposal is to internalize the externality of emissions, reduce the price gap between conventional fuels and new zero- and near zero- emission alternatives, change market behavior by underscoring the case for investment, and increase the uptake of energy efficiency options leading to additional emissions reductions. Revenue generated from this proposal could be strategically deployed to accelerate maritime decarbonization and promote a just and equitable transition.

3.3.1 What happened at the March meetings?

Based on submissions and the discussions at the March meetings, a majority of member states expressed support for a separate emissions pricing mechanism. Some member states have sustained their support for this approach over a number of meetings, and in some cases, years. Submissions to the March meetings show support coming from Pacific SIDS, Belize, the EU, Comoros, Namibia, Republic of Korea, Canada, Liberia, Bahamas, and the ICS.²² Not only does this list represent a significantly diverse level of support, which is notable in itself, but at the meetings, a number of member states spoke in support of a separate per tonne pricing mechanism that had not previously done so.

It is important to note that the groups expressed differences around the design of the pricing mechanism. For example, the proposal by the ICS, Liberia, and the Bahamas, and the separate proposal by Japan, are a type of feebate that would prioritize revenues to be applied in-sector and reward use of eligible fuels, with options to use some revenue for other purposes. These other purposes include, *inter alia*, promoting a just and equitable transition, supporting SIDS and least developed countries, and research development and deployment (RD&D). The EU, Comoros, Namibia, and Republic of Korea point to the advantages of a separate pricing mechanism to supplement the fuel standard. Canada, the Pacific SIDS, and Caribbean member states offered proposals in which the revenues generated are largely managed by pre-existing international funds²³ and selected by the IMO for their relevance to a number of criteria, including the objectives of the 2023 Strategy.

Despite the diverse group of proponents for a separate emissions pricing mechanism, a smaller number of member states have expressed strong opposition during the meetings. They provide the following reasons for their opposition, which remain largely unchanged from the previous discussion at ISWG-GHG 15:

¹⁹ Revenue uses discussed in submission ISWG-GHG 16/2/13.

²⁰ This approach is taken by multiple different proposals from different member states and industry associations. Additional details on these approaches can be found in [Section 3.3.1](#).

²¹ While other exemptions are theoretically possible and have been mentioned by a handful of member states, the probability of the IMO adopting exemptions other than one based on size is fairly low.

²² We based our assessment of support on both the submissions to the meetings and interventions during the discussions, though we have only offered the names of member states that have appeared on submissions.

²³ An example of a pre-existing international fund from a previous Pacific SIDS submission, MEPC 76/7/12, is the [Green Climate Fund](#).

- The emissions pricing mechanism is viewed as a revenue-raising tool rather than aimed at closing the cost gap between fuels. Therefore, the UNFCCC is a more appropriate forum for discussions related to climate finance.
- A per tonne emissions pricing system is relatively punitive for developing countries far from their markets and/or engaged in export of low value, high-weight goods.
- There is skepticism about the feasibility of using revenue to address disproportionately negative impacts from the measures, both in terms of volume of revenue and practicalities of disbursement.
- There are concerns about the risk of cost pass-through affecting consumers, particularly economically vulnerable consumers.

In terms of establishing the price(s) of a separate pricing mechanism, the discussions yielded no conclusions. Meeting submissions reference prices such as:

- 20 USD per tonne of CO₂e²⁴
- 90 USD in 2027, rising to 130 USD per tonne of CO₂e in 2030 with prices for the following five years to be decided in 2025²⁵
- 150 USD per tonne of CO₂e, with upwards ratcheting every 5 years²⁶

In addition to the form and costs of the pricing mechanism, a further point of divergence during the discussions was whether revenues could be used for in-sector purposes only or allowed for both in- and out-of-sector purposes.²⁷ Analysis by the World Bank and submitted to the IMO meetings suggests that “maximizing climate outcomes calls for financing climate action beyond maritime transport.”²⁸

Overall, the collection, management, and use of revenue has yet to be agreed on by IMO member states despite each measure proposal having an element of revenue generation. The Pacific SIDS and Belize submitted a proposal to the meetings to organize an expert workshop on revenue collection, management and disbursement that is intended to better inform the forthcoming discussion on these elements. The decision to move forward with this proposal did not achieve consensus during the meeting.

²⁴ Illustrative example from Japan’s submission (ISWG-GHG 16/2/12).

²⁵ Figures from Canada’s submission (ISWG-GHG 16/2/16).

²⁶ Figure from the Belize and Pacific SIDS submission (ISWG-GHG 16/2/6).

²⁷ There is little clarity about what is meant by in-sector or out-of-sector as there appears to be no formal definition. Examples of in-sector use could include rewarding ships that use eligible fuels, and RD&D related to the development of zero- and near-zero emissions fuels, engines, and other ship-based technologies. Examples of out-of-sector use could be funding for the production and provision of zero- and near-zero fuels or addressing the disproportionately negative impacts of measures. It is unclear from the discussions and submissions where activities such as updates to, or increased climate resilience projects for, port infrastructure fall, but such activities may be regarded as out-of-sector uses.

²⁸ Excerpt from World Bank submission ISWG-GHG 16/2/20, which references the 2023 World Bank Report [Distributing Carbon Revenues from Shipping](#) by Goran Dominioni, Isabelle Rojon, Rico Salgmann, Dominik Englert, Cáit Gleeson, and Sotiria Lagouvardou.

3.3.2 Fundamental Outstanding Questions

- What form will the emissions pricing mechanism take? Will it be a price on non-compliance with the fuel standard only (*i.e.*, a feebate), or a flat price on all emissions?
- What is the appropriate price level to achieve the 2023 Strategy's goals? How and when will prices be set and how often will they be modified or updated?
- What is appropriate calibration of the emissions price and fuel standard to meet the 2023 Strategy objectives?
- How will revenue be collected, managed, and disbursed? How will fuels and payment data be reconciled and verified?
- Will revenue be allocated for in-sector only or also for out-of-sector uses? How will the IMO define in- and out-of-sector uses?

The answers to these questions are fundamental in determining the future energy transition for shipping. While the fuel standard should be designed to offer certainty on emissions reduction over the course of the transition, the pricing mechanism, depending on design and level(s), has the potential to send significant market signals and support the business case for investment in future fuels as well as other technologies. For example, pricing emissions may increase uptake of energy efficiency technologies already on the market. Revenue use is one of the key elements of the GHG emissions pricing mechanism's design. Suggestions from member states for revenue use tend to center on the objectives in the 2023 Strategy, *i.e.*, promoting the energy transition, incentivizing the world fleet, contributing to a level playing field and a just and equitable transition. The answers to the questions above will direct the extent to which these suggestions are taken up and, in doing so, shape the transition significantly.

3.4 COMPONENT 4: Implementation, Reporting, and Verification

The MARPOL text and accompanying guidelines adopted by the IMO will determine implementation of the measures, including elements such as data reporting, verification of GHG intensity of fuels and/or emissions, payments made under the economic measure, and statements of compliance. The IMO will likely need to adapt existing processes to implement the measures and possibly establish a new network of authorities and administrative processes.²⁹ Policymakers will need to carefully consider this extensive administrative network during the design of the measures to ensure the entire regulatory framework functions as intended and meets the goals of the 2023 Strategy.

3.4.1 What happened at the March meetings?

As shown in [Table 2](#), the majority of the IMO negotiations have focused on process updates, high-level discussions on measures design, and drafting and adoption of Terms of Reference for the establishment of

²⁹ For example, some measures could require the establishment of new bodies and processes such as emissions trading registers and fund management boards.

various groups to assist in the process. As such, the discussions generally have not focused on implementation details or reached the point where there is agreement on the collection of decisions which will be needed to bring the regulations into practice.

3.4.2 Fundamental outstanding questions?

- What elements will the IMO need to adopt to ensure the design of a robust, transparent regulatory compliance framework that produces verifiable GHG emissions reductions?
- How will the IMO design a regulatory system that balances the need for a robust, transparent process while limiting complexity?
- What new or additional administrative bodies and processes will need to be created to successfully implement the regulatory framework?
- Is the [IMO Data Collection System \(DCS\)](#), which requires ships³⁰ to record and report their fuel oil consumption, fit for purpose in this case? Will the IMO DCS need to be updated to collect the type of data needed for implementation of the GHG measures?

While these questions may be difficult to resolve until the decisions on the other three components are made, the importance of considering implementation issues while designing the measures cannot be overstated.

Regardless of the design of the measures, policymakers and stakeholders involved in maritime decarbonization need assurance that the sector's emissions are actually decreasing at a pace consistent with the 2023 Strategy's levels of ambition. This will depend largely on how the measures are implemented. Furthermore, cargo owners and other stakeholders will need accurate, verifiable data for reporting and tracking their Scope 3 maritime shipping emissions. Without robust implementation and a comprehensive compliance framework, there is the potential risk for the regulatory system to lack transparency, be inefficient, allow for loopholes, or provide incomplete or unverified data.

³⁰ The DCS only requires reporting from ships above 5000 gross tonnage.

4. Comprehensive Impact Assessment

The outcome of the CIA is an important part of the measures development process for member states. During the recent IMO meetings, many member states reaffirmed their wish to see the results of the CIA before eliminating any policy options or finalizing particular decisions. An overview of the process is provided below in [Figure 1](#).

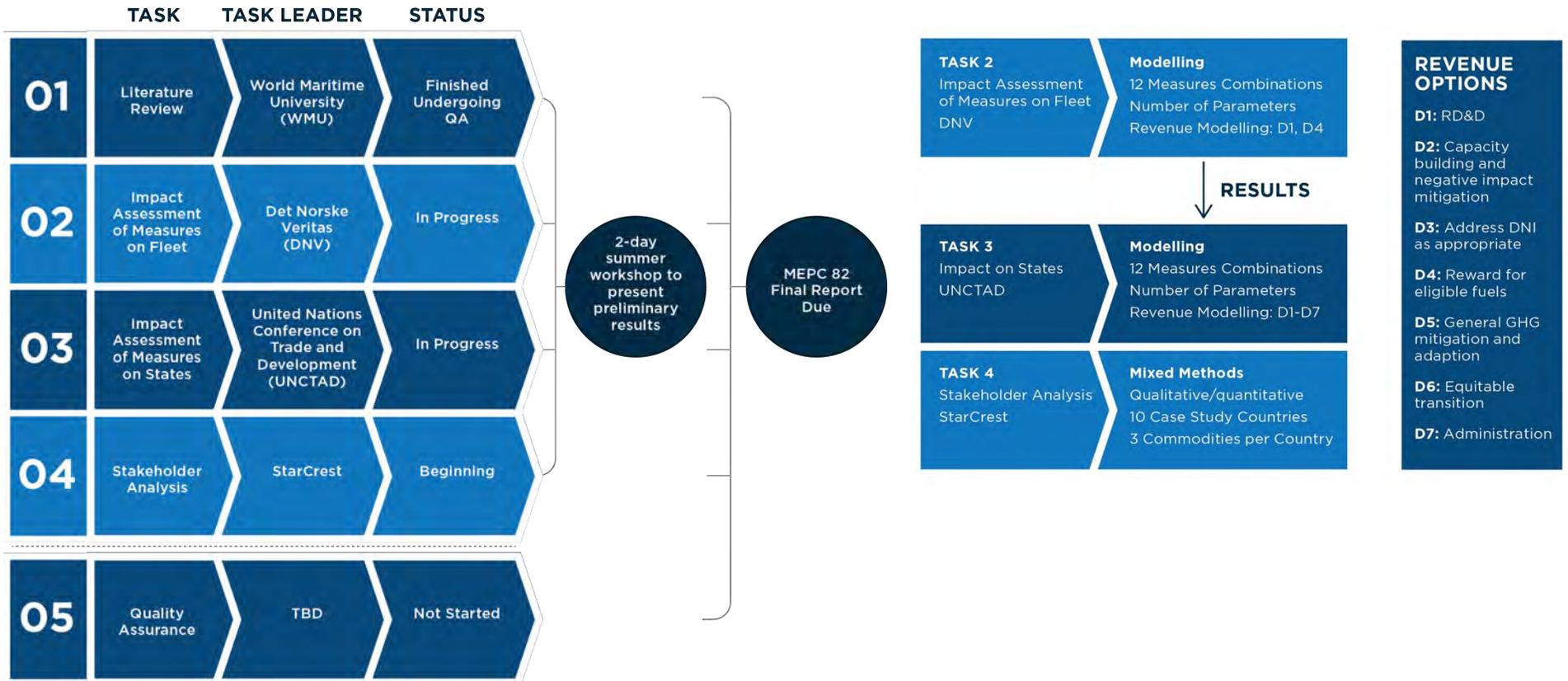


Figure 1: Overview of the Comprehensive Impact Assessment Process

At the March meetings, CIA task leaders from the World Maritime University, Det Norske Veritas (DNV), the United Nations Conference on Trade and Development (UNCTAD), and Starcrest presented updates on their respective tasks. In response to a proposal from the United Kingdom and Norway, the Committee approved the establishment of a two-day expert workshop to be held at IMO this summer (likely in July 2024). During this workshop, the four task leaders will present their preliminary results in order to facilitate a more complete understanding of the findings and help member states prepare for the autumn negotiations.

5. LCA Guidelines

MEPC 80 adopted guidelines on the life cycle GHG intensity of marine fuels ([LCA Guidelines](#)). The LCA Guidelines allow for a full life cycle, *i.e.*, well-to-wake, calculation of emissions factors related to the production and use of marine fuels. This evaluation involves combining the well-to-tank assessment³¹ with the tank-to-wake emissions of combustion onboard the vessel. Development of the LCA Guidelines is ongoing, and the additional review of existing practices on sustainability criteria, certification, and third-party verification issues was requested by MEPC 80.

Finalizing a complete and comprehensive set of LCA Guidelines will be critical to the implementation of the measures. The LCA Guidelines will be used to calculate the GHG intensity of fuels and the attained GHG intensity of ships on an annual basis. In turn, the annual GHG intensity will be the metric of compliance with the GFS and may also be used for calculating payments due under an emissions pricing system.

As an outcome of the March meetings, work to further develop the LCA Guidelines has now been subdivided across several groups:

- An **intersessional Correspondence Group** will consider social and economic sustainability themes/aspects of marine fuels³² for potential inclusion in the LCA Guidelines.
 - The Correspondence Group will submit a report to MEPC 83.
- A **GESAMP-LCA Working Group**³³ to provide a scientific and technical assessment of issues related to the implementation of the LCA Guidelines.³⁴
 - The GESAMP-LCA Working Group is anticipated to submit a report to MEPC 83.

³¹ A *well-to-tank* assessment includes evaluating GHG emissions related to the extraction/cultivation, processing and refining, and transport, distribution and bunkering of marine fuels.

³² The *sustainability aspects/themes* are listed in the current LCA Guidelines: ".1 greenhouse gases (GHG); .2 carbon source; .3 source of electricity/energy; .4 carbon stock – direct land use change (DLUC); .5 carbon stock – indirect land use change (ILUC); .6 water; .7 air; .8 soil; .9 waste and chemicals; and .10 conservation."

³³ [GESAMP](#) (Group of Experts on the Scientific Aspects of Marine Environmental Protection) are groups of external experts advising a number of United Nations agencies, including IMO, on scientific aspects of marine environmental protection.

³⁴ Broadly, the group will look at the methodological refinement of the emission quantification in the LCA, sustainability themes/aspects, in particular indicators and metrics and approaches to ILUC risk classification and provide further information for the development and/or identification of possible requirements for fuel pathway certification, including well-to-tank and tank-to-wake actual values.

- Another **intersessional Correspondence Group** is tasked to develop recommendations for a regulatory framework for the measurement and verification of non-CO₂ GHG emissions and use of onboard carbon capture. Although the work of this group is not focused solely on LCA Guidelines, a draft term of reference links to this work.³⁵
 - The report of this correspondence group is due at MEPC 83.

Development of comprehensive, science-based LCA Guidelines, including transparent and credible certification and verification requirements, will be critical to efficient and effective implementation of the measures. While the Committee has created separate work streams to provide information on outstanding issues that will allow it to finalize the Guidelines, there is a need for clarity on how the outputs from the different groups will be brought together on the ambitious timeline for adopting the measures.

6. Concluding Comments

In order to achieve decarbonization, the shipping sector and its end-users need comprehensive, transparent policy mechanisms that build on the momentum from first movers, incentivize early investment in long-term solutions to close the cost gap of near-zero and zero emissions fuels, and ultimately support a systems-wide transition that is effective and equitable. In the 2023 Strategy, policymakers set decarbonization goals for the sector. It is now time to create clear, predictable pathways to achieve them.

Though the March meetings concluded on a generally positive note, the topline framework of the measures is still being negotiated and many of the details have yet to be decided. Outstanding issues include the GHG intensity reductions for the fuel standard and the scope of these reductions (tank-to-wake versus well-to-wake), GHG prices, and management and use of any revenue generated. Additionally, elements fundamental to the successful implementation of the forthcoming regulations, in particular, systems of certification, data reporting, verification, are, as of yet, largely undefined. Failure to fully address these outstanding issues—or consider them as the regulatory framework is being developed—could lead to delay or a more costly, less predictable transition.

Political acceptance of components of measures is likely to be a significant factor in the final design of the package. At the same time, policymakers have an opportunity to strive for the optimum calibration of the measures to achieve the objectives of the 2023 Strategy and provide the sector with cohesive regulation directing an efficient, equitable, close to a 1.5°C-aligned transition. We are now at a critical juncture in the transition, whereby each decision, from the overarching design of measures to the verification of fuel data, will have a significant impact on how close the international shipping community is to fulfilling those goals.

The work on developing the LCA Guidelines is critical to support the implementation of measures. This work continues, and reports that will allow the Committee to move forward with finalizing Guidelines are now expected at MEPC 83, the same meeting at which the measures will be approved. The time to get the details

³⁵ See MEPC 81 [Meeting Summary](#).

right on both the measures and the LCA Guidelines is growing pressingly short in the face of divergent positions in the negotiations of each.

One notable outcome was the introduction of the IMO net-zero framework by the Chair of the GHG Working Group, which, after several amendments, was accepted by consensus. This provides a non-binding basis to facilitate intersessional coordination between member states and for the consolidation of draft legal text at the IMO meetings in autumn. However, the framework currently only contains draft MARPOL headings which leaves the text unwritten and a substantial amount of work for MEPC 82.

We are at a pivotal moment in the policy process for shipping's energy transition. While these two meetings, ISWG-GHG 16 and MEPC 81, may have been a stepping stone on a longer path to the adoption of global, sector-wide GHG reduction measures, the timeframe for shaping the outcomes of policy negotiations is increasingly compressed with essential work taking place in the coming months. To ensure the IMO meets its goals, further clarity is needed on the design, cohesion, and environmental integrity of the measures, from the top-level architecture to the implementation details. At the same time, the coming months offer opportunities for stakeholders and policymakers to positively shape the next era of maritime shipping.

IMO at a glance

Purpose: United Nations specialized agency regulating safety, security, and environmental pollution from ships

Membership: 176 Member States, 3 Associate Members, 66 intergovernmental organizations and 88 non-governmental observer organizations

Structure: Assembly, Council, Secretariat, five main committees, seven sub-committees, and several subsidiary bodies, including a number of working, correspondence, and expert groups

Process: Multilateral with consensus-based decision-making when developing regulations. Voting is possible but rare.

2023 IMO Strategy on Reduction of GHG Emissions from Ships at a glance

Vision: "IMO remains committed to reducing GHG emissions from international shipping and, as a matter of urgency, aims to phase them out as soon as possible, while promoting, in the context of this Strategy, a just and equitable transition."

Level of ambition: net-zero GHG emissions 'by or around, i.e., close to, 2050'

Indicative checkpoints:

- 2030: 20% GHG reductions, striving for 30% (baseline year 2008)
- 2040: 70% GHG reductions, striving for 80% (baseline year 2008)

Fuel uptake target: zero or near-zero GHG emissions technologies, fuels, and/or energy sources of at least 5%, striving for 10%, of the energy used by shipping in 2030

Scope: level of ambition and indicative checkpoints should take into account the well-to-wake GHG emissions of marine fuels as addressed in the LCA Guidelines

Mid-term Measures: technical element (a goal-based marine fuel standard) + economic element (maritime GHG emissions pricing mechanism) to be adopted in 2025 and implemented in 2027.

Policy Timeline

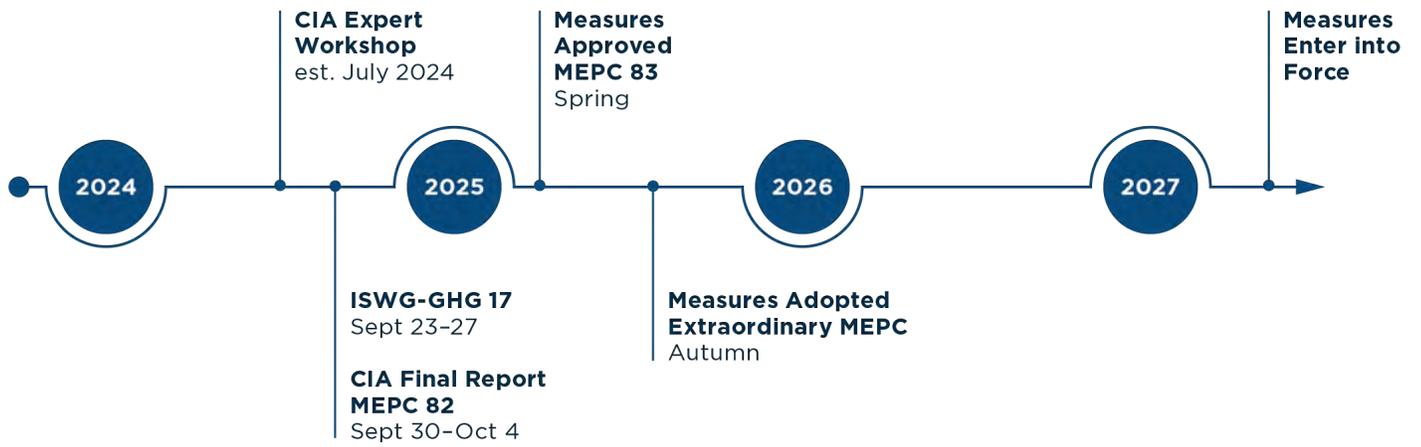


Figure 2: Timeline of IMO Process for Development of GHG Measures Through Entry into Force