Unravelling IMO policy measures towards a just and equitable energy transition

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This insight brief is the second in a series of publications on the IMO's Revised GHG Strategy. Whereas the first brief looked closely at the implications of the strategy, this brief will zoom in on the policy measures currently on the table, and how these can contribute to an effective, just, and equitable energy transition.

Introduction

Momentum towards zero-emission shipping has been steadily increasing over the past years, culminating in the adoption of the Revised Greenhouse Gas (GHG) Strategy at the International Maritime Organization (IMO) in July 2023.

During the IMO's 80th Marine Environment Protection Committee (MEPC 80) meeting, member states agreed to a new pathway of shipping decarbonisation. The IMO's Revised GHG Strategy sets an end date for fossil fuel consumption by targeting net-zero GHG emissions "by or around, i.e. close to, 2050." Furthermore, this cut-off date is now supported by indicative checkpoints of reducing emissions by 20%, striving for 30%, by 2030 and 70%, striving for 80%, by 2040. Next to this, the industry now has a target of at least 5%, striving for 10%, (near[1]-) zero-emission fuel uptake by 2030.

These targets include all GHG emissions on a well-to-wake basis, considering the full lifespan of fuels from production to combustion. The strategy's 2040 absolute reduction target is equivalent to an average ship operating with ~90% lower GHG intensity (grams of CO_2 equivalent per tonne nautical mile or gCO_2e/tnm) than in 2008,[2] implying that by 2040 the large majority of international shipping's energy needs will need to be supplied by zero-emission (and near-zero) fuel/energy.

Once enacted into policy and regulation, this will have **major implications for the entire maritime value chain**, including the existing fuel supply chain and the fleet's competitiveness, and future infrastructure, fleet, and energy/fuel choices.

1 *While the IMO has not defined 'near zero', emerging norms have referred to fuels capable of 90% lower GHG intensity (gCO_2e/J) on a WtW basis compared to conventional fossil fuels.*

2 **Smith, T., Bonello, J. and Kapur, A. (2023). How can international shipping align with 1.5°C: Focus on 1.5°C alignment in 2030.**

The development of a basket of mid-term policy measures[3] comprised of technical and economic measures will be the main driver for achieving the WtW GHG reduction targets. In addition, the Strategy also stipulates the following broader objectives: to "effectively **promote the energy transition of shipping** and provide the world fleet with a needed incentive while contributing to a **level playing field and a just and equitable transition**" (paragraph 4.5). Furthermore, paragraph 5.3 of the revised strategy emphasises that "due account should be taken to ensure **a just and equitable transition that leaves no country behind**, including supportive measures."

Several proposed policy measures and combinations are currently on the table at the IMO. This Insight Brief will zoom in on different elements of these policy measures and discuss how they can contribute to the strategy's objectives of (1) achieving an energy transition and (2) enabling a just and equitable transition. An overview of the various proposals on the table can be found in Annex I.

Mid-term measures

The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) indicated five broad categories of policy measures: economic instruments, direct regulatory approaches, information programmes, voluntary action, and national/regional measures (see Figure 1).[4]

The IMO's Revised GHG Strategy initiated the development of a so-called "basket of mid-term measures" that includes the first two categories, namely an economic instrument and a technical measure (or direct regulatory approach). **Technical measures refer to a set of standards, guidelines, and best practices that address the technical aspects of maritime operations.** In terms of GHG emissions, technical measures focus on fuel efficiency, the adoption of cleaner technologies, and operational best practices to reduce emissions. **Economic measures aim to influence the economic behaviour of member states, shipping companies, and other stakeholders to align with the IMO's overarching goals**, which include safety, security, and sustainability. Such measures could include market-based measures, financial support mechanisms, or research and development (R&D) funding.

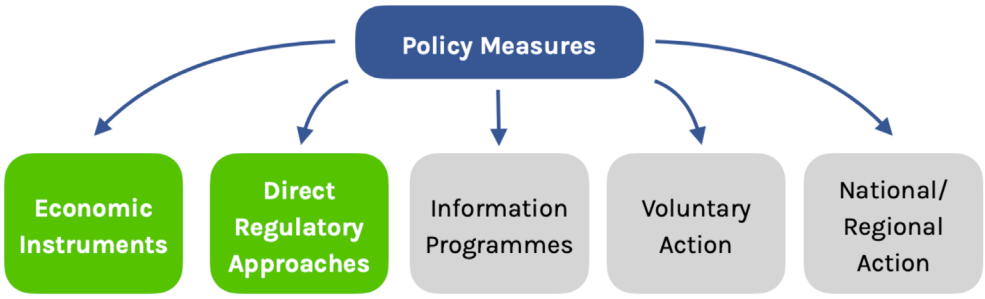

Figure 1: The IPCC's categories of policy options that are currently on the table at the IMO (highlighted).

With the adoption of the revised strategy, the discussion of policy measures has moved into a new phase,[5] going beyond individual proposals and into discussions about possible combinations of

3 *Mid-term measures are defined as measures to be adopted no later than 2030 with the aim to directly reduce GHG emissions from ships and those which support action to do so.*

4 *Kolstad C., et al. (2014) Social, Economic and Ethical Concepts and Methods. In: Edenhofer, O., et al. (eds.) Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, USA.*

5 *Phase I included the collation and initial consideration of proposals for measures, which took place from Spring 2021 to Spring 2022. Phase II assessed and selected measure(s) to further develop and ended with the adoption of the Revised Strategy. Phase III involves the development of the measures.*

various elements to support the development of the measures. These elements include:

Category A: GHG fuel intensity (GFI) target, which could be either on a tank-to-wake basis combined with sustainability criteria or on a full well-to-wake basis.

Category B: No flexibility, creating a completely level playing field, or the inclusion of flexibility elements such as route or cargo exemptions.

Category C: A potential pricing mechanism which either takes the form of a feebate or levy.

Category D: Revenue disbursement areas, which could include R&D, adaptation efforts, mitigating disproportionately negative impacts (DNI) and/or capacity building.

These different categories of elements can together form various combinations (see Figure 2). As the various combinations are likely to have varying impacts, elements of such measures are analysed through an ex-ante Comprehensive Impact Assessment (CIA), overseen by a steering committee. The CIA assesses the impacts through a set of parameters, including geographies, cargo, costs, and socio-economic development.

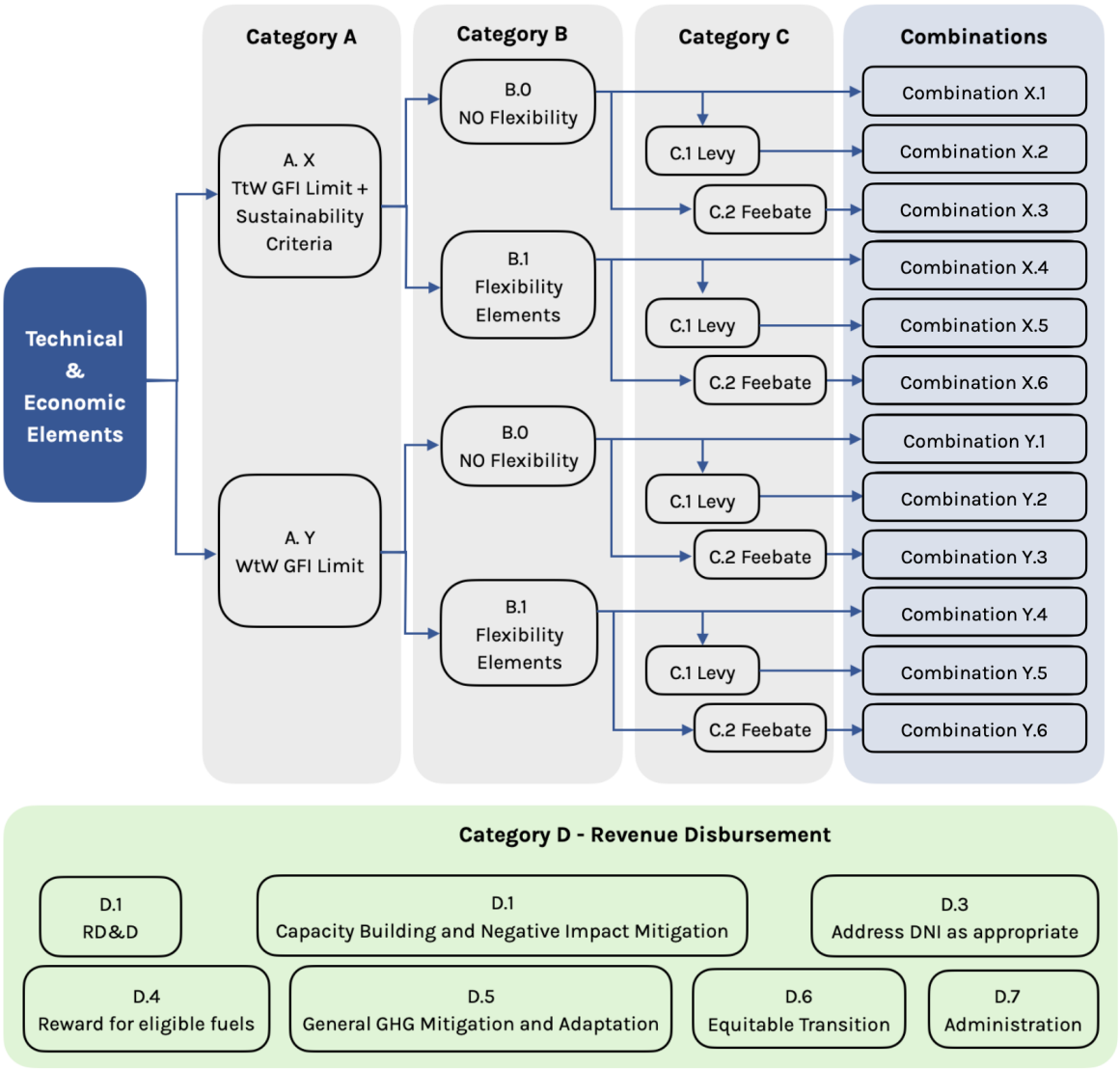

Figure 2: Combinations of policy measures as discussed at the IMO

The initial results of the CIA will be presented in early 2024, with a final adoption of selected measures expected in 2025. Further debates, including using the outputs of the CIA as evidence of the performance and impacts of the different specification options for fuel standards and GHG pricing, will be undertaken at MEPC 81 (March 2024) and MEPC 82 (Autumn 2024). The measures are expected to enter into force in 2027 (see Figure 3).

Figure 3: Timeline for policy measure development and the IMO's comprehensive impact assessment (CIA)

Energy transition

For international shipping to be in line with the pathway set in the revised strategy, the industry faces a full-scale energy transition from fossil fuels to scalable zero-emission fuels (SZEF) such as green ammonia. This transition needs to take place alongside (and be supported by) further improvements in energy efficiency. Whilst short-term measures[6] are most likely to be the primary drivers of energy efficiency increases and hence reduce total fuel consumption and costs, mid-term measures will need to drive the sector's energy transition, which includes the evolution of fuel/energy supply, infrastructure/bunkering and technology.

At present, a commercial gap between SZEF and fossil fuels in terms of costs, reliability, and availability is inhibiting full-scale investments in the transition. For example, the total cost of ownership without government intervention will still be 43% higher for green ammonia vessels and 60% higher for green methanol vessels than conventional vessels running on heavy fuel oil in 2030.[7] In addition to SZEFs, a number of technologies, including carbon capture, have lower costs than SZEFs and can have lower GHG emissions than fossil fuels. Nevertheless, these technologies lack either GHG reduction potential to achieve the 2040 target or scalability and are therefore not likely to play a significant role in the period post-2040 to meet the IMO's reduction targets.

This means the sector faces two basic scenarios for its energy transition:

- An **incremental energy transition** with infrastructure and fleet stepping through progressively lower GHG intensity energy options until around 2040, by which point the global fleet is operating on SZEF;
- A **two-speed energy transition** with a growing portion of international shipping incentivised to move to SZEF from the late 2020s onwards, with a diminishing remainder of international shipping using higher GHG intensity solutions.

The two-speed transition allows for a more gradual ramp-up of SZEF use, which has the potential to use the learnings from early adopters to help reduce costs, develop skills and labour force, and incrementally develop the new energy supply chains and infrastructure. It would also potentially reduce the risk of widely-used but short-lived transition technologies later leading to stranded assets. The IMO's "basket of mid-term measures" should therefore ideally target early adoption of SZEF as well as enable a sector-wide scale-up towards 2040.

6 *Short-term measures are those aimed at reducing the emissions intensity of ship, for example through technical efficiency or operational efficiency measures.*

7 Getting to Zero Coalition (2021). The Next Wave: Green Corridors.

There are several elements in the current proposals and potential combinations on the table that could contribute to the required early adoption of SZEFs as well as support a large-scale uptake towards 2040, including: an emissions pricing mechanism, revenue disbursement, regulating GHG emissions, and flexibility mechanisms. Their potential contributions are discussed individually and then in combination.

GHG pricing mechanism

GHG pricing systems can create two different types of incentives for the energy transition:

- Acting as a GHG price alone, they can increase the cost of higher GHG intensity fuels and thus increase the competitiveness of more expensive lower GHG intensity fuels.
- Acting as a GHG price in combination of revenue disbursement mechanisms, they can function also as a fuel/energy subsidy to stimulate the early uptake of SZEFs.

In the former case, the ability to incentivise the use of different fuels/energy, e.g. SZEF, is limited to the GHG price point. Particularly at the initial stage of the energy transition (around 2030), the GHG price would likely need to be very high (e.g. $400 per tonne of GHG emissions or higher) given the current large cost gap. In the latter case, the use of revenues as a subsidy means that the GHG price needed to incentivise SZEF can be lower. In the early stage of the transition, when only a small volume of SZEF is in use and therefore the total revenue needed to subsidise its use is small, prices of around $40 per tonne of GHG emissions may be sufficient.[8] However, to increase uptake towards 2040, even with reductions in SZEF production costs, the GHG price will need to increase to create sufficient incentives, particularly in combination with subsidies and falling SZEF prices. **If the GHG price and/or any revenue using a subsidy regime is not targeted at SZEF use, it could end up only stimulating transition technologies and driving an incremental energy transition.**

Multiple GHG pricing proposals (see Annex I) were proposed in Phases I and II of the IMO's mid-term measures development process, and a wide-ranging combination of pricing and revenue use proposals are currently being analysed as part of the CIA process.

The key parameters under consideration include:

- **Style/variant:** Three variants of an economic measure are under consideration, namely a levy, feebate, or 'other'. Levies set a flat price for all CO_2/GHG emissions. A feebate also sets a flat price but at a later stage returns a portion (a rebate) as a subsidy depending on the quantity of eligible fuel a ship operator is using. Other pricing mechanisms set a price point for emissions that occur above a regulated limit. A key difference here is therefore related to the certainty of raised revenues, as levies and feebates have higher certainty than other mechanisms. Another key difference is whether the revenue use is allocated actively by a fund manager or passively through a rebate system. In the current discussions, proponents of a levy or feebate model include some features of each other's proposals: levy proponents, for example, refer to revenue use for research, development, and demonstration (RD&D) of eligible fuels and feebate proponents refer to active allocation of revenues through a fund manager.

8 *Baresic, D. et al. (2021). Closing the Gap: An Overview of the Policy Options to Close the Competitiveness Gap and Enable an Equitable Zero-Emission Fuel Transition in Shipping. Prepared by UMAS, January 2022, London.*

- **Price level:** Some proponents have been explicit about the price point and suggested levels (e.g. $100 per tonne of GHG emissions) and the need for a ratchet mechanism (e.g. a revision upwards in price every 5 years), others have suggested the price should be set based on the needs for technology development (e.g. the level of revenues needed for R&D, or the level of revenues needed for a subsidy on 'eligible' fuels).
- **Revenue use:** As indicated in Figure 2 above, areas for revenue allocation that are currently being discussed are: RD&D, capacity building and negative impact mitigation, addressing DNI as appropriate, rewards for eligible fuels, general GHG mitigation and adaptation, equitable transition, and administration costs. Revenues will be discussed in more detail in the section below.

A GHG pricing mechanism could provide the certainty and strong signal needed to achieve a rapid ramp-up in investments across the sector. However, this would either require an initial high price level or gradually ramping to a high price between 2030 and 2040. Using GHG pricing without revenue distribution to stimulate early adoption of SZEF would require an initial high price that would create a rapid increase in transport cost and create high impacts on individual states and is thus unlikely to be politically viable. GHG pricing which includes revenue use to stimulate early adoption of SZEF (both supporting fleet and fuel/energy production early-adopter investment cases) could reduce the price and impacts on states and provide for one of the key energy transition objectives.

Even with a high price and high revenue use, there is no guarantee or mandate for lower GHG intensity operation, which could increase investment uncertainty. Therefore, a price and revenue mechanism should be combined with a technical measure.

Regulating GHG Intensity

Command-and-control measures such as a Global Fuel Standard (GFS) mandate progressive reductions in fuel or energy GHG intensity over time, supporting the energy transition by setting clear requirements and a more predictable emissions reduction pathway. Whereas a pricing mechanism would make emitting more costly, which in turn should affect stakeholders' behaviour, the exact emissions reduction outcome is more uncertain as it does not set any limit on emissions or fuel GHG intensity. Setting GHG intensity limits (emissions per unit of energy used) through a GFS can therefore achieve more certainty in terms of absolute emissions reductions.

A fuel standard should directly impact the shipowners' and fuel suppliers' choices, as the GFI limit first makes operation solely on incumbent fossil fuel non-compliant, until near-zero and zero-emission fuels become the only compliant fuel choice (by around 2040). Setting clear limits can indicate that both a compatible fleet and sufficient volumes of fuel will ultimately be needed to be able to match this requirement (e.g. in 2040).

However, investment in zero-emission technologies during the transitional period prior to this will remain uncertain. In this period, the GFI limit will still be reducing, meaning shipowners will have various options for compliance:

- Using a transition technology/fuel (e.g. biofuel, blue fuels, onboard carbon capture and storage) which only lowers GHG emissions, or
- Using SZEF in combination with fossil fuel (e.g. as a blend/co-fired)
- Using SZEF, over-complying and selling credits back into the market (see section on flexibility mechanisms below) or using pooled compliance

In terms of the scope of a fuel standard, two options are on the table: reduction targets on a

well-to-wake basis or reduction targets on a tank-to-wake basis combined with a sustainability framework used to guide incentivisation. A well-to-wake approach that considers the full lifespan of the fuels, from production to combustion is of critical importance for aligning investments with the well-to-wake GHG reduction objectives of the IMO's 2023 strategy. If the GFS is tank-to-wake, the development of a sustainability framework would risk disincentivising investments needed to enable SZEF supply, including renewable energy and low-GHG hydrogen production. Furthermore, it may also undermine investment in a SZEF-compatible fleet and instead encourage investments in fossil fuel-derived production of fuels such as hydrogen, ammonia, and methanol.

Allowing for out-of-sector offsets[9] risks reducing the investment case for in-sector emission reduction solutions by delaying investments and increasing uncertainty around the point at which shipping's in-sector solutions would be competitive. Several member states are clear to explicitly exclude out-of-sector offsetting as a compliance pathway within the fuel standard, others still include the possibility of out-of-sector offsetting as a way to achieve compliance (see Annex).

A fuel standard that is based on well-to-wake GHG emissions and does not allow out-of-sector offsetting is of critical importance for achieving the large-scale ramp-up of SZEF needed for the 2040 objective. However, if the transition is mainly driven by a fuel standard that sets a mandate on minimum GHG intensity, it will likely drive an incremental transition and provide little incentivisation for early adoption of SZEF and a two-speed transition.

Flexibility mechanisms

Flexibility mechanisms can allow for multiple ways to be compliant with legislation and could include a credit system or differentiated rules for different geographies or sub-segments. Existing GHG and environmental policies at the IMO specify the same stringency for all similar groups of ships globally (e.g. ships of the same type and size). Yet currently, different perspectives on the need for a more flexible approach in the fuel standard exist:

- Flexibility mechanisms to be included in the design of the fuel standard (allowing under- and overperformance on fuel GHG intensity, as well as alternative compliance through paying a fee). Such a system is proposed to include mechanisms such as Flexible Compliance Units (FCUs) and Remedial Units.
- A simpler fuel standard that does not feature flexibility mechanisms and is therefore a clearer signal for investment as well as administratively simpler both for states and the industry to implement.
- Flexibility mechanisms can exclude under- and over-performing measures but rather argue for a voluntary pooled compliance mechanism, where compliance is measured across a pool (or a small fleet) of ships.

A key justification for flexibility mechanisms is that they could help manage the uncertainty of how supply chains and new fuel production will develop over time and geographically. However, all the proposed mechanisms currently create the equivalent of an economic measure, whereby ships that overperform trade credits with ships that underperform, whether formally or informally (e.g. in a pooled system). **This flexibility therefore comes with the cost of added complexity (both for administrators and the sector's value chain), and could risk increased uncertainty for the timing of the business case for investment as, for example, the likely behaviour by shipowners in relation to flexibility will need to be factored into decision making.**

9 *Out-of-sector offsetting entails the compensation of in-sector emissions by reducing emissions or increasing emissions removal in a different sector to comply with emission reduction targets.*

Another justification is that a flexibility mechanism will by itself create a business case for early adoption of long-run solutions, e.g. SZEF, by rewarding over-compliance with credits. However, this can only occur if there is a supply of credits for overperformance that matches the willingness to pay by those in underperformance. **Because SZEF solutions are currently projected to be of a much higher price than incremental solutions, flexibility mechanisms are unlikely to support this early uptake.**

Alternatively, the possibility to supply a fuel-oil non-availability-report (FONAR) has been proposed. FONAR is a feature of the fuel sulphur regulation already adopted by the IMO. However, depending on how its use is defined, this can also risk creating uncertainty and disincentive for investors and fuel suppliers as well as shipowners and operators. A fee like a remedial unit provides an alternative to FONAR. For a rapid ramp-up of investment to achieve the 2040 transition, it is critical that any fee is set high enough that paying for non-compliance with the GFI is not a competitive alternative to investment in zero-emission technologies and operation in line with the GFI.

Flexibility and pooling may be useful for managing an uneven geographical energy transition, e.g. for different availability or competitiveness of fuels in different parts of the world. However this upside needs to be carefully considered against the downside of added complexity and uncertainty of the zero-emission business case. The mechanisms do not in themselves create an incentive for early SZEF adoption, promote a two-speed energy transition, or remove the need for this to be provided elsewhere in the "basket of measures".

Just and equitable transition

The global nature of the shipping industry underpins the need for a fully global transition, a level playing field, and the adoption of measures that facilitate a transition that leaves no country behind. As the sector moves towards zero-emission goals, it is vital to ensure a just and equitable transition as stipulated by the IMO's Revised GHG Strategy.

A just and equitable transition has varying implications for individual nations as policy changes and climate change impacts have different impacts on different states. Ensuring a just and equitable transition could, for example, include:

- Addressing disproportionate negative impacts from policy measures, for example by considering the effects that factors such as transport costs, geographical distances to major trading partners, and access to infrastructure or technologies have on trade competitiveness and economic growth.
- Allowing equal access to the required infrastructure and technologies, rather than favouring those countries with existing economic and industrial bases.
- Reducing GHG emissions to minimise further impacts of climate change on vulnerable states, whilst acknowledging and addressing the economic and other impacts created by the past, present, and future GHG emissions from international shipping.
- Supporting wider climate adaptation and climate mitigation efforts.
- Unlocking global opportunities for fuel production.

Several elements in the different combinations of measures under consideration could help enable a just and equitable transition by addressing the above concerns and including flexibility mechanisms and revenue disbursement.

Flexibility mechanisms

Flexibility mechanisms in the policy measures could help support a just and equitable transition but also risk undermining the effort. Proponents of flexibility mechanisms argue that they allow a geographically and technically diverse sector to transition (for example through FCUs, as discussed above) and can also be used to support vulnerable countries, for example through exemptions.

Route or cargo exemptions refer to special permissions granted to shipping routes or specific goods/commodities to deviate from certain measures, such as an emissions pricing mechanism. At the IMO, such exemptions could be given to a set list of countries or be based on criteria such as GDP.

While this can help support a just and equitable transition, for example by reducing or partially avoiding disproportionately negative impacts (DNI), such exemptions can also have drawbacks. Firstly, exemptions can lead to reduced incentives to invest in zero-emission technologies, which in turn can lead to limited emissions reductions.[10] Secondly, exemptions can result in avoidance risks, especially in cases of close proximity between an exempt and non-exempt port.[11] Thirdly, route exemptions risk leaving the exempted regions behind and reduce incentives for investing in zero-emission technologies there. Furthermore, a risk exists that the benefits of exemptions won't accrue to the exporting countries in the Global South.

Revenue disbursement

Revenue disbursement from the policy measures is required to enable a just and equitable transition. It is a vital tool to help achieve such a transition as other elements cannot achieve the same support.

Revenues can, in particular, address the disproportionate negative impacts of measures. Countries are likely to experience DNI from various policy measures, including an increase of trade costs for some. Reinvested revenues can support a faster transition, which in turn could lower the needed emissions price and therewith reduce DNI. Furthermore, distributing revenues to the negatively impacted countries can help mitigate some of those negative effects.

Revenues can be used to support in-sector mitigation in developing countries and unlock global opportunities for fuel production. Developing countries can reap benefits from the transition through, for instance, export opportunities for zero-emission fuels, industrial modernisation, and domestic energy security.[12] For example, the Japanese-proposed feebate system (see Annex) suggests using part of the revenues to support maritime projects in developing countries, including for the development of infrastructure to produce and supply zero-emission fuels. Supporting fuel production around the world helps unlock the opportunities that many developing countries have for the production of such fuels yet requires heavy investments in production facilities and the necessary infrastructure. Revenue use can thus help level up opportunities to ensure that lower-income countries are not discriminated against because of other factors such as risk or cost of capital.

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10 Dominioni, G. (2023). Towards an equitable transition in the decarbonization of international maritime transport: Exemptions or carbon revenues?

11 Defour, S. (2020). All Aboard! Too expensive for ships to evade EU carbon market. Transport & Environment.

12 *Dominioni, G.; Englert, D.. 2022. Carbon Revenues fromInternational Shipping: Enabling an Effective and Equitable Energy Transition – Technical Paper. World Bank, Washington, DC.*

Revenues can help support technology and knowledge transfer between developing and developed countries. For example, some proposals include an explicit reference to supporting such knowledge and technology transfer with a particular focus on intellectual property and technological inclusivity.

Out-of-sector revenue spending can support vulnerable countries in their adaptation and mitigation efforts. While more than half of global emissions are emitted by the world's richest 10%,[13] the impacts of climate change most heavily affect vulnerable states such as small island developing States (SIDS) and the least developed countries (LDCs). Nevertheless, climate finance for developing countries still falls short of addressing such impacts.[14] Out-of-sector revenue spending can help offset some of those negative impacts.

Conclusion

The 2030 absolute emissions reduction target (20% striving for 30%) underlines the importance of short-term action. This includes operational and technological efficiency improvements that can already be undertaken today to reduce fuel consumption without high capital investments. Nevertheless, neither the 2030 fuel uptake target of (near-) zero GHG emission fuels nor further GHG reductions to reach the 2040 target can be achieved through operational efficiency alone and require the implementation of mid-term measures.

The "basket of mid-term measures" as referred to in the IMO's Revised GHG Strategy and the right combination of potential elements are crucial to achieving the emissions reduction targets laid out in the strategy. To successfully deliver the strategy, the measures will need to not only drive the investment cases required to meet these targets but also contribute to promoting and enabling a just and equitable transition from fossil fuels to SZEFs.

In the design of mid-term measures, the key risks are that the regulated energy transition is incremental and creates significant stranded asset risk and delayed investment case for SZEF, rather than supporting early-adoption of SZEF that can produce a smoother, less disruptive and lower cost two-speed transition. Furthermore, a key risk is that the transition leaves countries behind, increasing inequity and slowing down the global availability and use of SZEF.

The discussion of the policy measures has now moved beyond individual proposals and into discussions of combinations of their various elements, including a GFI target, flexibility mechanisms, pricing mechanisms, and revenue spending. Looking at the different elements that are currently discussed and considering their various combinations, the key takeaways are:

- A two-speed energy transition is the most likely means to deliver on the strategy in a cost-effective, just, and equitable way. While recognising differentiated capacities to transition at different speeds, such a pathway also helps create early learnings and development of zero-emission technology. Nevertheless, it also underlines the importance of ensuring a just and equitable transition from the start so countries are not left behind.
- Any one measure currently on the table (GFS or GHG pricing) might achieve the strategy's GHG reduction targets but this depends on their scope, clarity, and stringency.

13 Gore, T. (2020). Confronting carbon inequality: Putting climate justice at the heart of the COVID-19 recovery. Oxfam International.

14 Salgmann, R. et al. (2023). Pricing emissions from shipping: Where should the money go? World Bank.

- No stand-alone measure currently under consideration is likely to achieve both the energy transition objectives of (1) stimulating early adoption of SZEF around 2030 and (2) ensuring rapid ramp-up in SZEF towards 2040.
- Revenue disbursement is crucial to enabling a just and equitable transition. Only a balanced combination of GHG pricing, fuel standards, and revenue-use elements can enable a two-speed energy transition that is just and equitable.
- Flexibility mechanisms or some sort of pooling are potential features of a fuel standard design that may help in the transition, but they add complexity and do not by themselves stimulate early adoption of SZEF.
- The proposals for various policy options that are currently on the table show strong similarities. For example, several proposals refer to a GHG price that includes a revenue recycling mechanism targeting in-sector RD&D and reward (whether through a feebate or fund), as well as wider just and equitable transition purposes. Furthermore, various proposals aim to set a GFI limit.
- A just and equitable transition is not merely enabled by revenue deployment in SIDS and LDCs. Revenues provide a crucial tool but many lower-income countries will require additional support, including capacity building, seafarer training, technological inclusivity, wider climate adaptation support, and addressing DNI.

As the IMO progresses through the finalisation of measures, the focus on achieving an energy transition and ensuring a just and equitable path forward remains paramount. The upcoming debates and discussions at MEPC 81 and MEPC 82 will be crucial in shaping the implementation of these measures, and the shipping industry's commitment to sustainable practices will be closely monitored as it strives to meet the ambitious targets set forth in the IMO's Revised GHG Strategy.

Annex

Overview of Proposals

Name	EU GHG Fuel Standard (GFS)
Type	Technical Measure: GFS
Sponsors	Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands (Kingdom of the), Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and European Commission.
Description	This fuel standard would regulate the GHG intensity of fuel on a well-to-wake basis and has an additional trading scheme geared to incentivise first movers by compensating those first movers that switch directly to zero emissions fuels. The system is composed of three components: 1. **Compliance Level:** The IMO will set a GHG fuel intensity level that ships will need to comply with. This level will be changed over time to reduce the emissions from the sector and drive the switch to new zero emission fuels. A ship will need to adjust its fuel to meet the compliance level and will then be issued status of compliance. 2. **Flexibility Compliance Units:** Ships that are over-compliant, i.e. those running on fuels with a lower GHG intensity than the mandated level will be issued Flexibility Compliance Units. The hope is that some ships will be first movers and move to zero emissions fuels earning themselves a greater amount of FCUs that they can then sell to under/non-compliant ships, thus giving them a financial reward for being a first mover. The under or non-compliant ships must buy enough flexibility compliance units to make themselves compliant by proxy. Thus, they suffer the financial penalty for non-compliance. 3. **Remedial Units:** To deal with the possible scenario where, in the early part of the transition there aren't enough FCUs available from over-compliant ships to cover under-compliant ships, or, to avoid over-compliant ships hoarding FCUs to drive up the price and profits, the third part of the system, called Remedial units comes into play.
Scope	GHG WtW

Name	Zero-Emission Shipping Incentive Scheme (ZESIS)
Type	Economic Measure: Feebate
Sponsors	Japan
Description	Japan's proposal establishes a funding and reward (feebate) mechanism which can be implemented in combination with a technical measure such as the GHG Fuel Standard (GFS) to ensure a decrease in emissions. Whereas a levy system would merely entail a fixed-price mechanism where contributions are made based on GHG emissions, a feebate mechanism also includes a reward system. The ZESIS considers the establishment of a fund that collects payments and issues rewards and revenues. Part of the revenues are to be used to support developing countries, for example through projects for capacity-building, research and development, and support for infrastructure development for ZEF-production.
Scope	GHG WtW

Name	International Maritime Sustainable Fuels & Fund (IMSF&F)
Type	Combined Measure: GFS & Levy
Sponsors	China
Description	An original proposal for an International Maritime Sustainable Fuels and Research IMSF&R, with a CO_2 and tank-to-wake scope, was submitted by Argentina, Brazil, China, South Africa, and the United Arab Emirates. An updated proposal was submitted by China under the new name International Maritime Sustainable Fuels and Fund (IMSF&F). To address the concerns from other member states about the benchmark of the original proposal being linked to the Carbon Intensity Indicator (CII), the updated proposal replaces that with GHG intensity of fuels/energy (GFI), mirroring the EU proposal. The system has three parts (compliance level, surplus reward units, and remedial units) and functions similar to the EU proposal, also covering GHGs and linking to lifecycle guidelines. The biggest difference between this measure and the EU's GFS is that out-of-sector carbon credits may be taken into account.
Scope	GHG TtW + sustainability framework

Name	Pacific Levy
Type	Economic Measure: Levy
Sponsors	The Marshall Islands and Solomon Islands, with the support of other Pacific SIDS
Description	The GHG levy is an emissions pricing mechanism first proposed by the Marshall and Solomon Islands at MEPC76, and is also sometimes referred to as the Pacific levy. It is set at a rate of $100 per tonne of CO_2e, with upward adjustments of the price level every 5 years. This price was selected based on an expected entry-into-force by 2025 and based on expert advice in 2019, and is expected to be higher today. The measure has a WtW scope and covers all GHGs. This levy or one with a similar design is a key part of the basket of measures as, in combination with a fuel standard, this is the only way to enable an equitable transition, depending on the use of revenues. In the Pacific proposal, revenues would be disbursed with 51% going to climate change adaptation and mitigation and 33% going to RD&D for international maritime fund research projects. The final amount would cover the administrative costs. This strategic disbursement of revenues enables an innovative, effective and equitable transition, where priority is given to the most climate vulnerable and the most disproportionately negatively impacted by measures.
Scope	GHG WtW

Name	IMO Maritime Sustainability Fund & Reward (IMSF&R)
Type	Economic measure: Feebate
Sponsors	ICS
Description	The ICS's proposal for the IMSF&R includes the establishment of an IMO Maritime Sustainability Fund. This will require all applicable ships to make an annual contribution per tonne of CO_2 emitted to the IMSF. The proposal does not take a position on the level of the transition by ships but rather argues that the price per tonne of CO_2 emitted is to be agreed upon by MEPC and reviewed on a five-year basis taking into account, for example, the availability of eligible alternative fuels, their price gap with conventional fuels and the impacts on individual states. The proposal does not indicate which fuels would be eligible alternative fuels. To help narrow the price gap between conventional liquid fuel oil and eligible fuels, ships will receive rewards from the IMSF based on the CO_2 emissions which are prevented by their use of eligible alternative fuels. The proposal also includes amendments of the Data Collection System (DCS) to enable ships to report the "eligible alternative fuels" which they have consumed and the CO_2 emissions that have been prevented, so that this information can be reported annually to the IMSF.
Scope	CO_2 TtW

Name	Simplified Global GHG Fuel Standard (GFS) with an energy pooling compliance mechanism
Type	Technical measure: Absolute Fuel Standard
Sponsors	ICS and International Bunker Industry Association (IBIA)
Description	ICS & IBIA proposed an absolute fuel standard, similar to the approach used in a proposal sponsored by the ICS prior to the adoption of the Revised Strategy. This proposal also includes a voluntary "energy pooling compliance mechanism". The absolute fuel standard proposed GFI targets set at different intervals. The pooling mechanism aims to provide flexibility to deal with potential lacking fuel availability, whilst aiming to reduce the complexity as proposed by the EU and China proposals. In this proposal, ships can voluntarily use such a pooling mechanism, which would permit companies to share any over-compliance with companies that are not able to fully comply. Each ship in the energy pooling compliance mechanism shall be issued with a Pooled Energy Intensity Compliance Certificate (PEICC).
Scope	GHG WtW