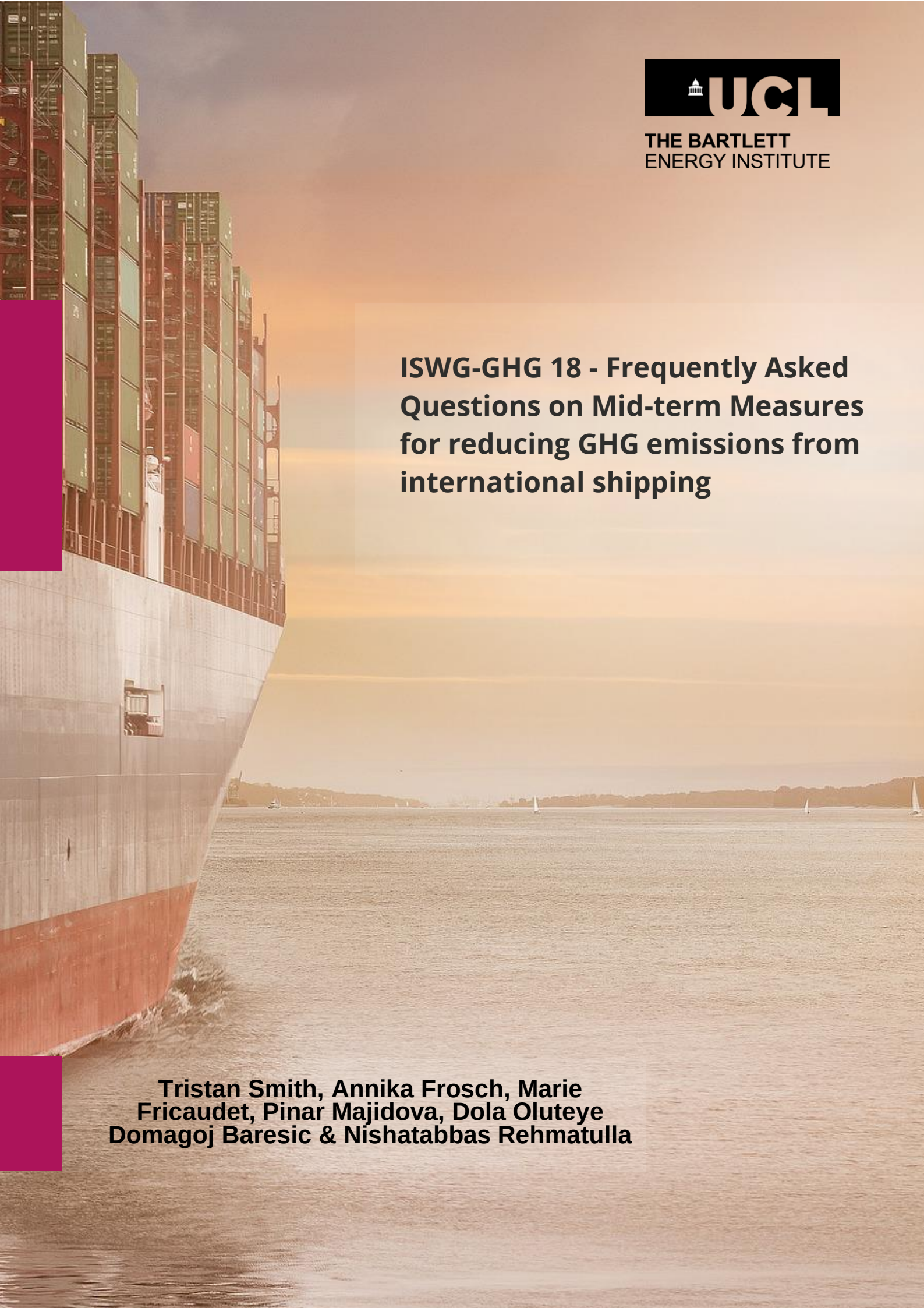

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ISWG-GHG 18 - Frequently Asked Questions on Mid-term Measures for reducing GHG emissions from international shipping

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1. What is being negotiated at ISWG-GHG 18?

ISWG-GHG 18 is the penultimate negotiating session, before MEPC 83 – the meeting at which IMO has committed to agree in principle, a MARPOL amendment draft for a new "Chapter 5", which will enshrine the legal definition of the new policy measures, comprising:

- A technical measure – on track to be a GHG fuel standard, which mandates reducing GHG intensity of shipping's energy use over time.
- An economic measure – a price on GHG emissions, and specification of distribution of any revenues raised

The MEPC 82 (October 2024) negotiations progressed a draft text for this new chapter, along with other related MARPOL Annex VI amendments (some of the other chapters will need adjusting to align/accommodate with the new chapter)[1]. The draft amendment text embodies unresolved points – where there was more than one perspective on how the language should specify the measure, this is included as 'option 1' alongside 'option 2' etc. Both options can be seen, but are in square brackets, indicating either is equally viable at this point.

The ISWG-GHG 18 meeting will therefore:

- Further discuss the output text from the MEPC 82 meeting, in an effort to remove as many square brackets and advance as 'clean' a text as possible to the next meeting ISWG-GHG 19 at the end of March
- Consider submissions with new draft text and whether to incorporate this or not
- Consider guidelines that will support the MARPOL amendment

During MEPC 82, the three proponents of a levy/universal GHG price worked together to advance a consolidated MARPOL Annex VI amendment draft, as shown Table 1 and Figure 1 below.

Proponents	Favoured policy combination
EU and Japan + Bahamas et al. + Belize et al.	A GFS with a levy (universal price on GHG emissions) ▪ EU and Japan – preference to also include a flexibility mechanism for alternative compliance within GFS, and in-sector focused revenue distribution options ▪ Belize et al. and Bahamas et al. - preference to use a simple surcharge for alternative compliance, and broad (in and out of sector) revenue use
China et al.	A GFS, GFS flexibility in the form of credit trading, no universal price/levy on all GHG emissions, lowest revenues, revenue distribution 'in-sector'

Table 1: Main policy proposals and their proponents

[1] UCL (2024) MEPC 82 readout https://www.shippingandoceans.com/post/copy-of-convergence-around-a-smaller-number-of-options-during-the-last-ghg-meetings-before-approval
UCL (2024) ISWG GHG 17 readout https://www.shippingandoceans.com/post/imo-on-track-to-deliver-an-ambitious-package-of-policies-for-reducing-ghg-emissions

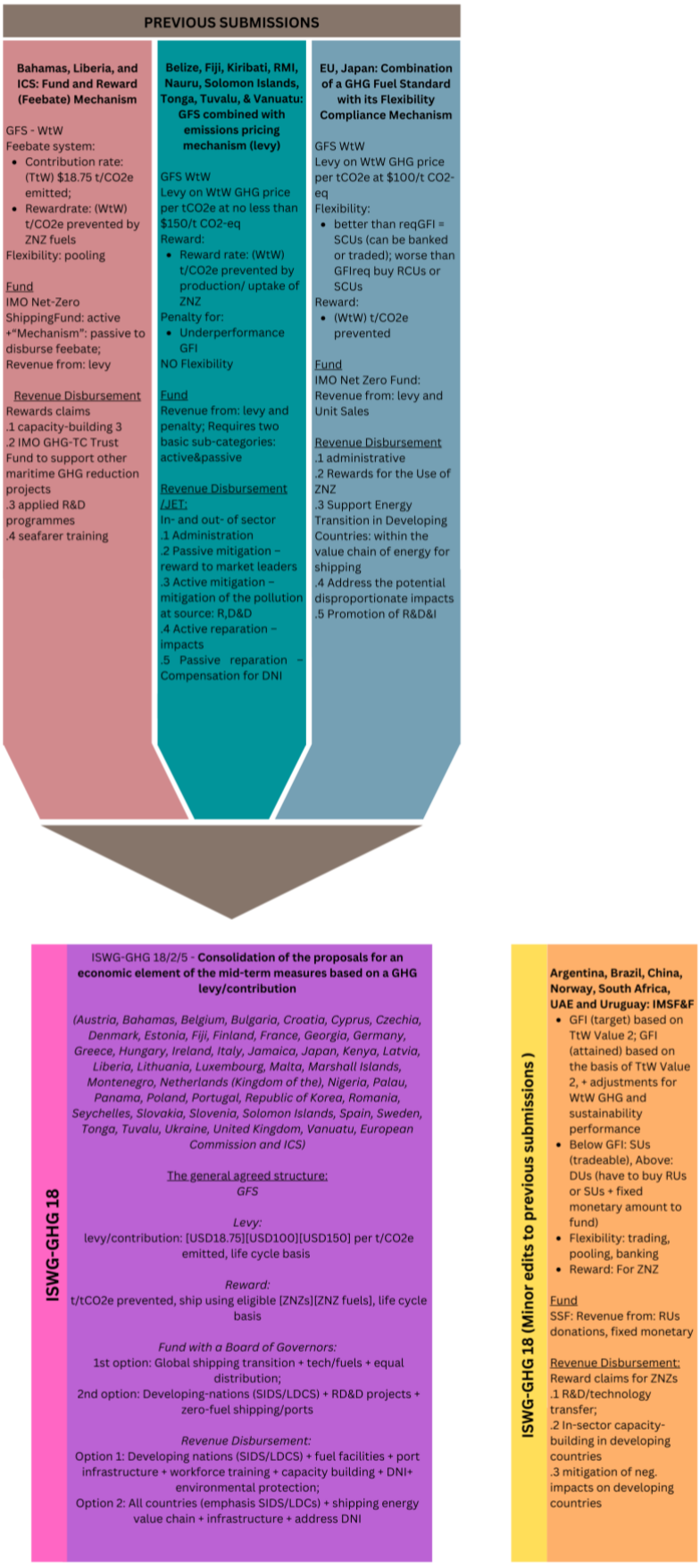

Figure 1: Proposals going into ISWG GHG 18

2. How might the policy measures work?

The GFS (GHG Fuel Standard) mandates a GHG intensity for the energy used onboard a ship. The regulation reduces the GHG intensity over time (also known aa a Z factor, acting as a % reduction relative to the baseline of conventional fuel GHG intensity). A shipowner/operator can be simply in compliance with the GFS by operating with a fuel/energy mix that achieves or exceeds the GHG Fuel Intensity (GFI) limit.

Some member states prefer that the GFS is coupled to alternative compliance mechanisms. There are two basic variants:

- A flexibility mechanism (illustrated in Figure 2) – in which underperforming (relative to the GFI limit) ships buy credits either from overperforming ships (if available, known as Surplus Units SU's) or from an IMO fund (known as Residual Units RU's)
- A surcharge – in which underperforming ships have no choice but to buy credits from an IMO fund, and there is no credit to overperforming ships

None of those mechanisms (flexibility mechanism, GFS, surcharge) directly incentivize operating measures or ship designs improving the energy efficiency of the ship.

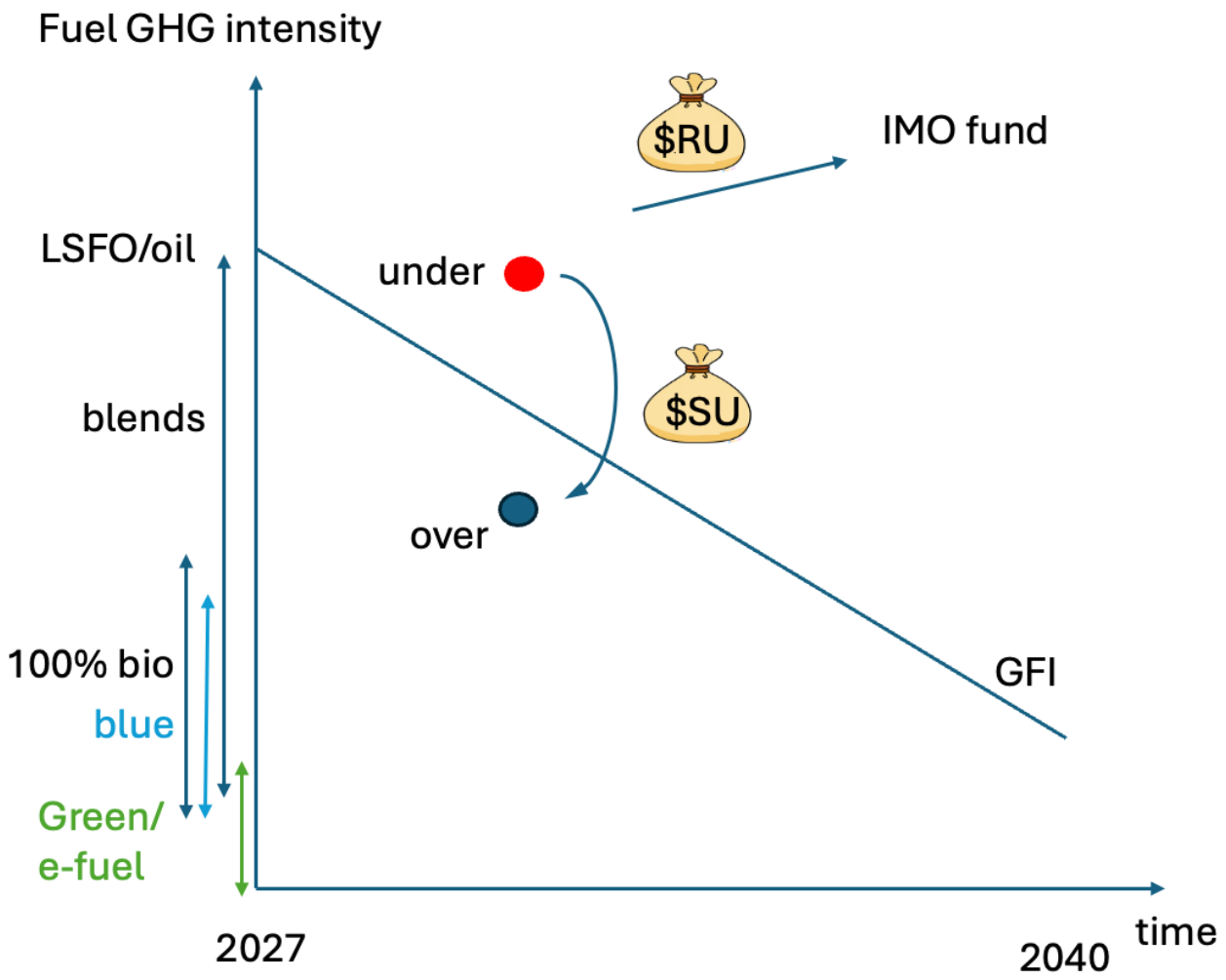

Figure 2: IMSF&F conceptualised – Residual Unit (RU) corresponds to credits purchased from the IMO Fund, Surplus Unit (SU) corresponds to credits purchased from an overperforming ship. GFI = GHG Fuel Intensity – the threshold for compliance by fuel use.

The GFS can also be coupled with a GHG levy, which further incentivises lower GHG emissions, closes the price gap between fossil fuels and lower GHG emission fuels, and generates revenues which can be used for a variety of purposes (see Question 2).

3. What are the key timelines, salient dates, and milestones for consideration, as well as the actions that must be resolved to achieve these key milestones?

The IMO agreed a timeline for the finalisation of 'mid-term measures' in its unanimously adopted 2023 Revised Strategy. The timeline includes:

- Agreement/approval of MARPOL Annex VI Chapter 5 at IMO MEPC 83 (April 2025)
- Adoption of MARPOL Annex VI Chapter 5 at IMO MEPC .ES2 (October 2025)
- Entry into force MARPOL Annex VI Chapter 5 ~April 2027

There remains debate about whether it is practical for entry into force to be effective from part-way through 2027 or for the start to be moved to 2028, but this does not affect the requirement for agreement/approval in 2025, which requires a complete and clean text detailing the different measures to have reached approval within the MEPC.

Many important details are likely to also need 'guidelines' (e.g. such as the guidelines specifying how the GHG emissions of different fuel and machinery options will be assessed (LCA Guidelines)). These guidelines are adopted by IMO resolution, so will need to be adopted before entry into force (e.g. developed and finalised before March 2027 – most likely by MEPC 85, which is late 2026).

For the MARPOL Annex VI Chapter 5 clean text, there is now only the following negotiating time left to find consensus on a clean text:

- During ISWG-GHG 18 (Feb 17-21st)
- During ISWG-GHG 19 (March 31st-April 1st)
- During MEPC 83 (April 7th –11th)

In practice, MEPC 83 does not have the full week available, the text will need to be clean by Thursday at the latest, which leaves very little time in the 'working group' in which substantive technical discussion could be undertaken.

There is significant further work to finalise and reach agreement across all sections of MARPOL Annex VI Chapter 5, as well as to complete and agree the multiple guidelines that are needed to operationalise the measures.

4. If IMO doesn't get the policy design right first time, could it review and adjust the measure?

Yes, it is standard to have review and revision of MARPOL amendments and guidelines, and the period until the first review of the mid-term measures amendment will normally be specified within the new chapter (MARPOL Annex VI, Chapter 5). Several member states have already proposed timescales for the first review – for it to be ~5 years after adoption, in 2030. This is also the timescale for the review of short-term measures.

Guidelines, which may still include some of the key parameters that affect business case, as well as impact on states, can be reviewed more frequently if necessary and an updated guideline adopted by resolution at any given MEPC meeting, if there is support from member states to do so. Guidelines such as the LCA guidelines have already been updated several times and are likely to continue to be updated as data and experience is gained as mid-term measures enter into force, allowing continuous improvement.

5. Who pays who and how much, under different IMO GHG policy design options?

IMO policy acts on the ship – specifying what must be in order (technically, administratively) for the ship to be deemed in compliance. A ship not in compliance with MARPOL can be fined, or ultimately arrested, by port state control. Below are some estimates of how payments will be made, based on current expectations and the following simplified assumptions, for clarity:

- an LSFO price of $500/t
- a 100% drop-in biofuel price (with 50% GHG intensity reduction) of $2000/t
- a fuel consumption of 1000t/p.a
- Around 2030, a GFI limit ~10% below a conventional fuel (e.g. LSFO) GHG intensity.

Achieving the GFI limit with compliant fuel

Who pays who? – in order to comply with the GFI limit, a shipowner will need to buy compliant fuel – this therefore constitutes a payment from the shipowner/operator to the fuel supplier. The GFI limit reduces closer to zero GHG emissions over time, which in most scenarios will mean that the cost/price of compliant fuel will increase over time. The options for compliant fuels vary depending on the specification of the ship. Conventionally fuelled ships will be more limited in their choices (and therefore will likely have to accept higher fuel prices) for compliance. Newbuilds with the capability to use ammonia as a marine fuel, are expected to be able to buy lower cost compliant fuel.

How much? – the amount is set by the fuel supply market, and what they will charge for compliant fuel. Based on the assumptions described above, a blend of fossil/bio to reach the compliance limit would cost around $800/t e.g. about 60% more than conventional fuel price. However, the exact pricing will vary depending on market conditions, region etc. In this example $500/t would go to the conventional fuel supplier for 800 tonnes of fuel, and $2000/t would go to the biofuel supplier for 200 tonnes of fuel. Alternatively, if bought as a blended fuel, $800/t for a B20 blend.

Flexibility mechanism/pooling:

Who pays who? – if a flexibility mechanism and/or pooling is adopted as part of the technical measure (alternative compliance), then a ship that is not in compliance with the GFI limit may be able to buy 'credits' from an overperforming ship, e.g. a ship that is operating at lower GHG intensity than the GFI limit. In this scenario, it is the shipowner/operator of an underperforming ship, paying the shipowner/operator of an overperforming ship.

How much? – the amount is set by a combination of the fuel market and the credit market. In a pool the credit price is set privately, while in some variants of the flexibility mechanism, the credit price is set by the IMO. The price for credits can be expected to include both the price of compliant fuel and the cost of operating the credit exchange (handling price), as well as any dynamics between supply and demand of credits. For example, if there are few over-performing ships in a pool, and a lot of under-performing ships, the tight supply relative to demand will push the price of credits up – until the level of RUs (see below). There is no point in the price of SU's exceeding the RU price (because when SU's exceed RU price, the under-performing ship can purchase RU's at a lower cost than SU's). Allowing for an SU handling price of ~5%, the total cost in this example would be ~$815/t ($500/t to the conventional fuel supplier, $315/t to a pool or IMO registry – ultimately going to an over performing shipowner/operator)

RU/surcharge price:

Who pays who? – if a flexibility mechanism is adopted, its possible that there will not be a sufficient supply of credits from overperforming ships. Another scenario is that the IMO does not adopt a flexibility mechanism as part of its mid-term measures instead using a simple 'surcharge' or fee payable for alternative compliance, in the event a ship is not using fuel that achieves compliance with the GFI limit. In either case, the equivalent amount of GHG emissions credit will need to be purchased from a central register e.g. a shipowner/operator of an underperforming ship, paying a central IMO fund.

How much – there is broad agreement that RU/surcharge price should be incentivising of compliance with the GFI limit, or if it exists, a flexibility mechanism. This is because if the RU/surcharge price is too low, it will be the favoured option for GFS compliance and the sector will not achieve any GHG reduction (which would then mean missing IMO 2023 Strategy GHG reduction targets). Suggestions for setting the RU price include that it should be ~10-15% higher than the use of GFI-compliant fuel, other member states simply argue that it should be punitive. Assuming RU set at 15% higher than least cost compliance with a fuel, this would place the payment at $845 ($500/t to the conventional fuel supplier, $345/t to the IMO fund)

Universal GHG price who pays who and how much? – if a universal GHG price is adopted, this involves anyone with GHG emissions paying a central IMO fund/register the product of their total GHG emissions and the GHG price. Different proponents of a levy propose different price points – ranging from $18.75/tCO2e to $150/tCO2e. The payment is additional to any of the above payments, and assuming use of a fuel in compliance with the GFI limit, ~2030, it would be an additional 67.5-540$/t if using a GFI compliant fuel (e.g. 10% lower GFI) across that range of GHG prices. The payment would be made from a ship to a central IMO fund.

6. How might early adopters of new technology/fuel be rewarded?

The IMO's Revised Strategy targets are committed to effectively promoting shipping's energy transition. This requires a portion of the global fleet to start using the long-run transition solution early, so the fleet and the shipping value chain can gradually move over to a new 'energy system', which by most analyses will be renewable energy producing green hydrogen and hydrogen-derived fuels. Green ammonia, is estimated in most analyses, including Aymer & Smith (2025)[2], to be the least cost of these fuels. There are several different options for rewarding early adopters:

RD&D funds – there is broad agreement in previous discussions[3] that revenues from IMO's mid-term measures will support RD&D. This is likely to be project-based support e.g. applied for on a project-by-project basis. It should help to produce advances in R&D and especially through 'deployment' support should be set up to enable early adoption. However, due to the labour intensive process of review/sign-off of applied-for projects, it will be hard for this to reach a scale of funding support to significantly modify a large volume of fuel choices in the near-term.

SU price – if the IMO adopts a flexibility mechanism, overperforming ships will receive SU revenues paid by underperforming ships (see Q2 above). The SU price is set by the fuel which is the least cost of over-compliance, and so by definition it is unlikely to reward Zero/Near Zero (ZNZ) fuels, including the expected long-run solutions (e-fuels), which in the absence of any other support are expected not to be competitive 'least cost of over-compliance), before the 2040's.

[2] Aymer and Smith (2025) How IMO mid-term measures might shape shipping's energy transition https://www.shippingandoceans.com/post/only-targeted-subsidy-for-e-fuels-coupled-with-a-ghg-levy-would-ensure-e-fuel-early-adoption

[3] https://www.shippingandoceans.com/post/copy-of-convergence-around-a-smaller-number-of-options-during-the-last-ghg-meetings-before-approval

Reward mechanism – given the insufficiency of SU price beyond stimulating least-cost overcompliance, there is also now broad agreement that there will be some form of additional 'boost' needed to close the price gap to ZNZ, including e-fuels. A reward is a price paid per tonne of ZNZ fuel used. The effectiveness/sufficiency of the reward for stimulating shipping's energy transition is a function of the definition of ZNZ, the level of the reward price, its mechanism for disbursement, and the total revenues available for this element of the measures. The reward can be inclusive of both the fuel/energy cost difference between ZNZ and other options which are compliant with the GFI limit, as well as capital costs (e.g. for the machinery, storage costs etc.).

7. Will there still be a significant opportunity for biofuels if there is a ZNZ reward?

Many countries have the potential to be biofuel producers, or to leverage their existing biofuel production to gain revenue/opportunity from the sale of bioenergy as a fuel for international shipping. Some have expressed concern that a reward mechanism targeted at ZNZ, including e-fuels, could undermine international shipping's biofuel demand, and therefore reduced their associated revenue/opportunity.

Existing and projected biofuel prices indicate that under a GFS alone (e.g. IMSF&F), it would be the least-cost solution until around the mid 2030s. Because shipping has a very high demand for liquid fuels (~250 million tonnes oil-equivalent per annum), relative to projections of total bioenergy production, and because many other sectors are likely to need bioenergy to decarbonise, the price is expected to go up in most models. Shipping's least cost alternative to bioenergy, especially in the long-run when needing to achieve net zero emissions, is e-fuel. Other sectors like aviation, steel, cement etc. have higher cost alternatives to biofuel, so in a decarbonising global economy, its plausible that they will have a higher willingness to pay for biofuel than the international shipping sector.

If ZNZ reward enables e-fuels to compete at a similar price point to biofuels, this is still only expected to be a subset of shipping's demand and will be constrained by the number of ZNZ compatible ships. On the basis of evidence that green ammonia is the least cost e-fuel for use in international shipping, the scale of e-fuel demand will be dominated by the number of ships able to use ammonia, which is likely small in the short term, but possibly largely increase in the late 2030s/early 2040s, through natural fleet replacement and/or retrofitting.

From ~2035, either the global supply/demand dynamic for biofuels then prices bioenergy out of the shipping market – in which case there will be other markets for producers to gain revenue/opportunity from; or it retains competitiveness for longer in international shipping. In either scenario, the expectation would be for robust price and volume demand.

There are other risks to biofuel revenue/opportunity, which relate to how the sustainability of different fuels will be assessed and regulated, and how some of the indirect and non-GHG impacts of bioenergy will be taken into account. However, these risks are not a direct function of the design of GHG pricing and reward mechanism.

8. What are the potential compromises, if there's no agreement to either IMSF&F or GFS + levy?

Countries registering ~70% of global tonnage and a total of 51 countries have co-sponsored a paper to ISWG-GHG 18 proposing GFS + levy as the solution. Only 3 countries have co-sponsored a submission with a further development of the IMSF&F proposal. This indicates that within the countries voicing a position, there is a large majority of support for a levy, but in seeking consensus, there is likely pressure for both sides to find a compromise between their proposals. Several compromise options are conceivable:

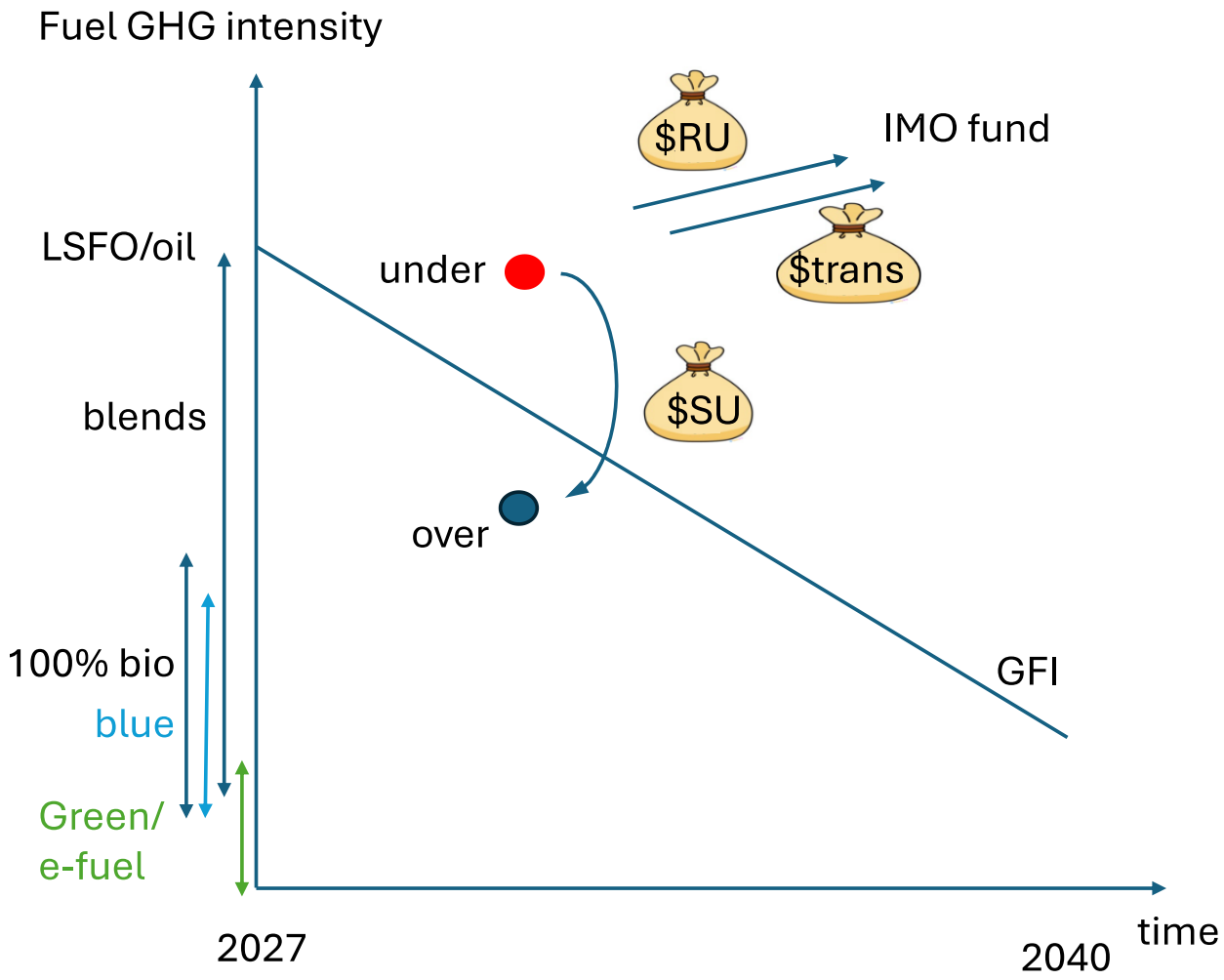

Figure 3: IMSF&F + transaction tax. RU corresponds to credits purchased from the IMO Fund, Surplus Unit (SU) corresponds to credits purchased from an overperforming ship. GFI = GHG Fuel Intensity – the threshold for compliance by fuel use. Trans is a transaction 'tax' charged on any purchase of RU or SU.

Transaction tax:

What? - In this variant of IMSF&F (GFS + flexibility mechanism), the underperforming shipowner/operator buys credits as per normal, but the price of the credit includes an additional transaction tax (set by the IMO).

Who pays who? - The revenues from the transaction tax go to the IMO fund. Therefore overall, the owner/operator of an underperforming ship would pay both the IMO fund, and the overperorming shipowner/operator.

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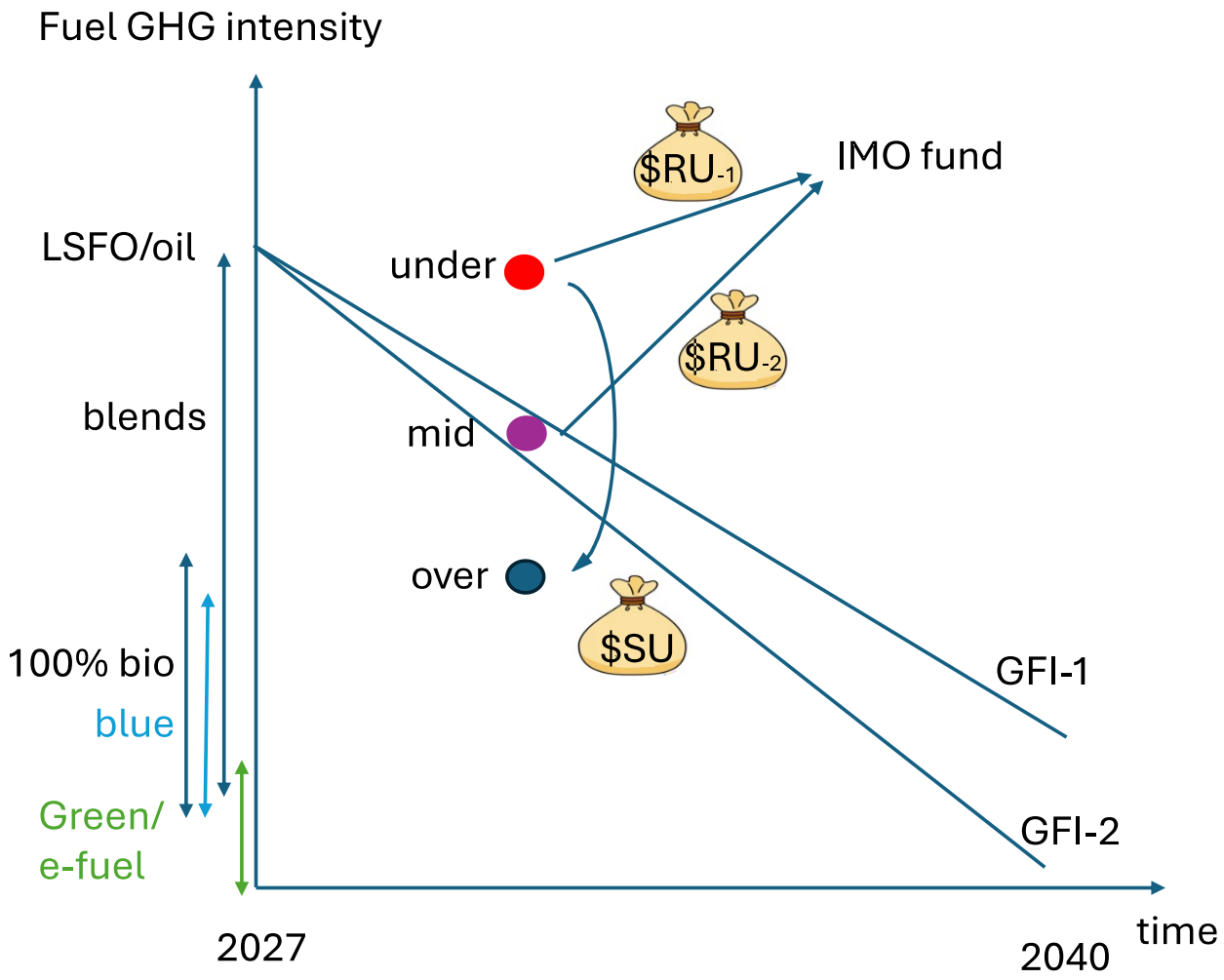

Figure 4: Banded RU price. RU-1 corresponds to higher priced credits purchased from the IMO Fund, RU-2 corresponds to lower priced credits purchased from the IMO Fund. Surplus Unit (SU) corresponds to credits purchased from an overperforming ship. GFI = GHG Fuel Intensity – the threshold for compliance by fuel use.

“Banded” RU price:

What? - in this variant of IMSF&F, an additional more ambitious GFI target trajectory is set, in addition to a minimum stringency GFI trajectory. This defines 'bands’ of GHG intensity with different payments required. As before a ship with emissions intensity above a minimum GFI pays a higher RU price. A ship with emissions intensity below a minimum GFI limit, but above a second GFI limit pays a lower RU price. A ship with emissions intensity below the minimum GFI limit, does not pay any RU price.

Who pays who? - as in IMSF&F it can be expected that revenues from the higher and lower RU prices go to a combination of over performing ships, and a central IMO fund. The pricing levels of RU and SU, determining how much of the total revenue goes to overperforming ships, and how much to a central IMO fund.

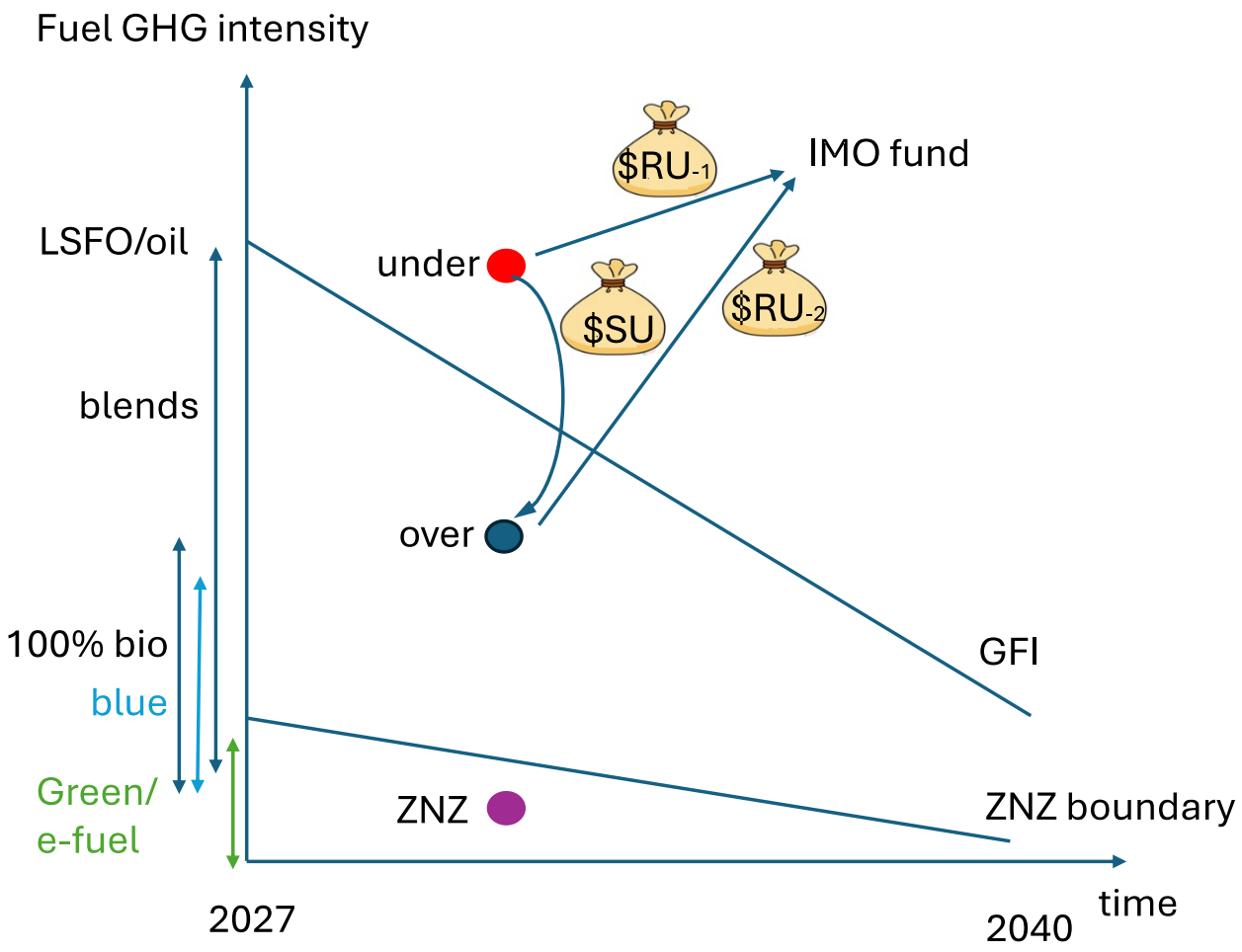

Figure 5: “ZNZ goes free”. RU-1 corresponds to higher priced credits purchased from the IMO Fund, RU-2 corresponds to lower priced credits purchased from the IMO Fund. Surplus Unit (SU) corresponds to credits purchased from an overperforming ship. GFI = GHG Fuel Intensity – the threshold for compliance by fuel use. ZNZ = Zero and near-zero GHG emission fuel/energy.

"ZNZ goes free”:

What? - in this variant of IMSF&F, similar to the ‘banded RU price’, there are three bands of payment. The difference is that the lowest band (no payment) refers to those using “ZNZ”. So anyone who is over performing with the minimum stringency GFI limit, but using fuel/energy that is not classified as ZNZ, would pay a GHG price. Anyone who is over performing with the minimum GFI limit, but using only ZNZ, would pay no GHG price, and anyone who is underperforming relative to the minimum GFI limit pays a higher RU price. In practice, there is little difference between the contributions to the fund from this proposal and the contributions from a universal GHG price – in which ships with no zero emission also pay no levy. However, this would depend on how ZNZ was defined – raising political pressure on that debate.

Who pays who? - initially most ships would pay a GHG price based contribution to the IMO fund, with ships that are overperforming paying less to the fund. There could also be some payment of SU’s from the most underperforming ships to overperforming ships.

9. How simple are the different MTM options?

Whilst in principle there are two options most commonly focused on (IMSF&F and GFS + levy), in practice there are a range of potential outcomes with these as bounding options (see compromise options in Question 8).

- IMSF&F (GFS + flexibility mechanism)
- IMSF&F + potential compromise (see Question 8)
- IMSF&F + levy
- GFS + surcharge (no flexibility) + levy

All variants of IMSF&F (option 1,2 and 3) include a flexibility mechanism. Option 4 replaces the flexibility mechanism with a surcharge. All variants can be coupled with a reward mechanism, which returns revenues to those using ZNZ (long-run solutions), to incentivise early adoption.

Decarbonisation of international shipping means that the sector is transitioning from a small range of viable fuels (HFO/LSFO/MDO/LNG) and associated machinery to a more complicated range of options including the many alternatives to fossil fuel. Asset owners and operators, especially the shipowner/operators and the fuel producers/suppliers, will need to understand both this range of fuel/energy/technology options, as well as the different incentives being applied by IMO regulation (and any other regulatory regimes):

Shipowners/operators
- Will need to understand pricing and availability of different fuels in different locations that they would like to be able to bunker in
- Will need to understand the basic features of a GFS (Z factors etc)
- If adopted, all will need to monitor/understand the flexibility mechanism, to minimise cost of compliance (whether to underperform, comply or overperform etc.)
- If banded RU price, the choice of which band to operate in will need to be monitored/understood
- If there is a reward mechanism, only those considering being ZNZ early adopters will need to monitor/understand the ZNZ reward mechanism
- If a levy is adopted, all will need to make a GHG contribution to the IMO fund, and understand if that affects the competitiveness of different fuel options
- In making a vessel purchase decision, shipowners/operators will need to have a view of the futures/forwards parameters of all the policy parameters (flexibility mechanism, bands of RU price, ZNZ definition), as well as of the different fuel options and their respective prices.

Fuel producers
- Will need to monitor the technology specifications and fuel compatibility of the ships calling at their ports
- All will need to monitor prices across a range of fuels (conventional, bio, blue, green), in any regions where they are active
- All will need to monitor/understand the different policy mechanisms (GFS and GHG pricing)
- All will need to monitor/understand the different policy parameters (e.g. RU prices, bands, credit prices, reward mechanism)

For any combination of policy measures, there is undoubtedly a more complicated future to monitor and understand. Given the broad consensus around the use of a GFS, RU price (also known as surcharge), and a reward mechanism, the key quesiton remaining is about the additional elements added on top, which includes either or both of:
- Flexibility mechanism, including its variants that include:
    - Transaction tax

- Banded RU pricing (whether alternative GFI or banded as in “ZNZ go free”)
- Universal GHG price

Of these options, the universal GHG price is a relatively simple addition. The flexibility mechanism, whether in its original form, including a transaction tax, or including the concept of banded RU pricing are more complicated.

10. How might these different options fulfil the IMO’s Revised Strategy objective “to effectively promote the energy transition of international shipping”?

“Effectively promoting the energy transition of international shipping” is interpreted here as ensuring that investment increasingly aligns and delivers IMO’s ultimate goal of phasing out its use of fossil fuel and achieving ‘net zero’ around 2050. The best available science points to e-fuels being the large majority source of energy onboard ships by that end point.

The reason e-fuels are expected to dominate the eventual energy mix, is because they can be scaled to meet the total demand for energy of international shipping (~250 million tonnes of fuel today), and because if correctly produced, stored and used, they can operate with zero (or near-zero) GHG emissions.

There are also a number of alternative energy sources and energy technology, to the current technology and fossil fuels, that achieve reductions in GHG intensity, but are either unscalable, or unable to reach zero (or near-zero) GHG emissions levels that will be needed by around 2050.

The “effective promotion of the energy transition” needs to carefully manage the early-adoption of e-fuels, whilst minimising the overall cost of transition, managing evolving fuel availabilities and managing the risk of over-investment/dependence on these lower GHG intensity solutions, given their potential for only a transitory role in shipping decarbonisation.

A recent study[4] by UMAS and UCL found that if IMSF&F is adopted without any additional reward mechanism and means of generating sufficient (high) revenues, it will be unable to effectively promote the energy transition. The results show that a global fuel standard combined with a flexibility mechanism is unlikely to lead to competitive e-fuels before the 2040s. A combination of fossil fuels (including LNG), biofuels and CCS would be most competitive until up to 2036, thereafter ammonia dual fuel ships would be the lowest cost solution, albeit operating on blue ammonia until ~2044. Ships that were more competitive in the period 2027-2035, would have at least a 25% higher total cost of operation from 2040 onwards. This illustrates that if shipowners order tonnage to maximise competitiveness over a short time horizon (e.g. looking only ~5 years ahead), the sector has a major risk of technology lock-in, potentially greater volatility in asset values (stranded assets), and exposure to higher transport costs. This is consistent with the findings in IMO’s CIA Task 2.

Conversely, the study found that a GFS in combination with a levy and an e-fuel reward mechanism would be able to ensure that e-fuels were competitive to other forms of GFS compliance from 2027 onwards, and enable early adoption.

[4] Aymer and Smith (2025) How IMO mid-term measures might shape shipping’s energy transition final https://www.shippingandoceans.com/post/only-targeted-subsidy-for-e-fuels-coupled-with-a-ghg-levy-would-ensure-e-fuel-early-adoption

The study finds that the only means to produce the sufficiently certain and high revenues needed for an effective reward mechanism, is through a levy. The study did not consider the potential for the various compromise proposals in Chapter 8 to produce equivalent revenues to a levy, and this may be possible for some of these proposals. Early estimates are that revenues are unlikely to be as high under the transaction tax proposal, or certain under the "banded RU" options, and all of these may have implications for the fairness of 'who pays', depending on the parameters chosen. For example, the transaction tax places all the pressure to raise revenues for the reward mechanism on the underperforming ships, which are likely to be operating in lower income countries, whereas a universal levy would spread the cost across all ships.

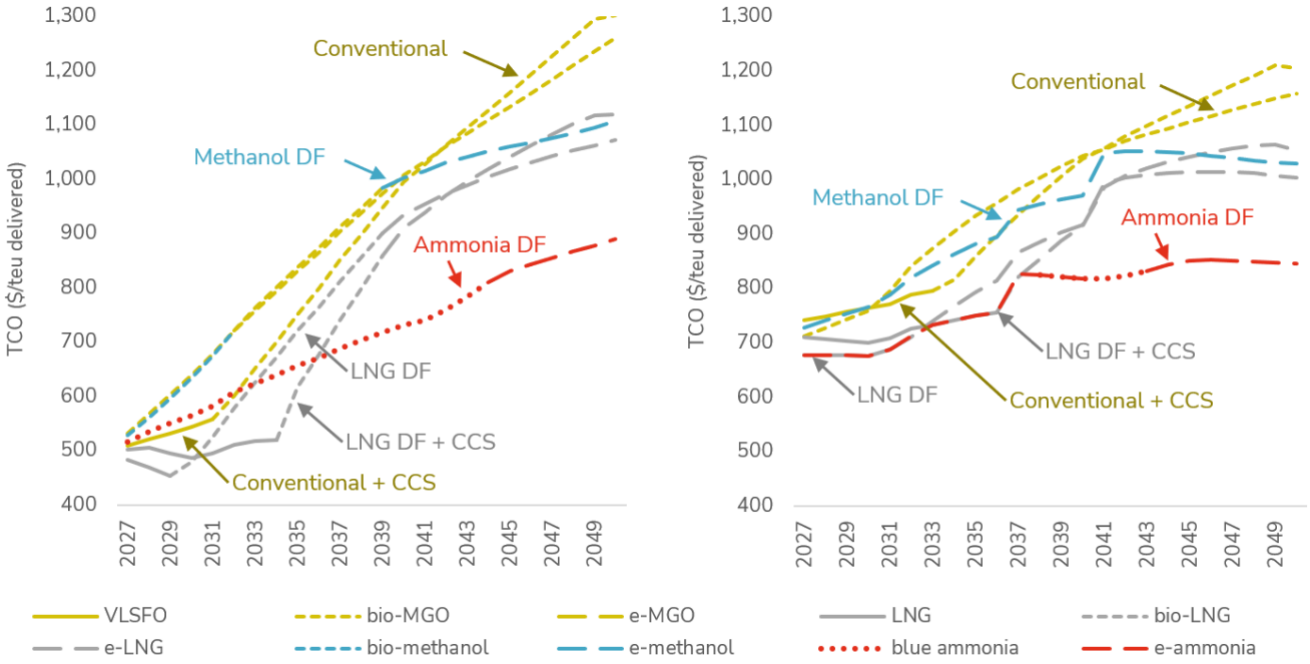

Figure 6: the total cost of operation for different fuel/machinery options under different regulations (GFS + flex on left, GFS + levy and reward on right) taken from Aymer & Smith (2025)

11. How might these different options fulfil the IMO's Revised Strategy objective to "enable a just and equitable transition"

What constitutes a just and equitable transition (JET) has not formally been defined at the IMO, but based on the existing literature on equitable transitions in shipping and beyond, and on the submissions to date at the IMO, a JET is based on three key principles:

- Distributive justice: Ensuring a fair allocation of the costs and benefits of decarbonizing shipping. This includes technological inclusivity, so all nations can participate in the transition.
- Procedural justice: Guaranteeing representation and active participation of affected stakeholders in decision-making.
- Restorative justice: Addressing past harms from shipping emissions through compensation and measures to prevent future damage, in line with the polluter pays principle and broader energy justice frameworks.

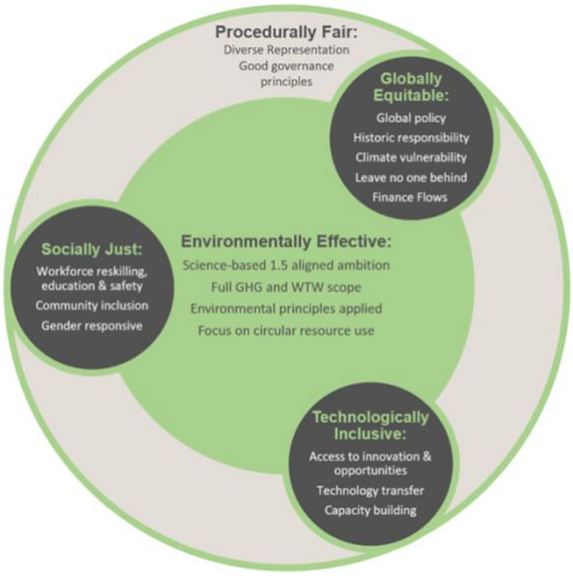

Figure 7 3: Key elements to consider for shipping's transition. Shaw & De Beukelaer, 2022

Based on the comprehensive impact assessment and the literature so far, several points are worth noting:

- All policy options contribute to reducing shipping GHG emissions, and therefore reduce the inequitable effects of climate changes on climate vulnerable countries, many of which are not responsible for the large part of the historical emissions
- All policy options considered raise transport cost, which, in the absence further measures, have a regressive impact on economies. In particular, the lower the income per capita of an economy, the more its GDP is likely to be affected by an increase in transport cost (calculated based on Dequiedt et al, 2024, UNCTAD, 2024, IMF, 2024). Furthermore, SIDS and LDCs tend to be more affected than the world average and than the other developing countries (Dequiedt et al, 2024, UNCTAD, 2024, IMF, 2024).
- However, levy scenarios raise levels of revenue which can be distributed to compensate those negative impacts. When disbursed in a small number of particularly affected countries, the IMO's CIA shows that the cumulative impact of increase in transport cost + revenue distribution can be close to neutral or even positive for those specific countries, meaning that they are better off than if no mid-term measures had taken place at all. When revenue is distributed to a large range of countries and based on their initial negative impact, the initial negative impact and the regressivity caused by the increase in transport cost can be partially to fully offset by revenue distribution.
- Even if significant revenue is raised, restricting the distribution of revenue to in-sector only means that many of the worst affected countries would not benefit much for revenue distribution, because they do not have a strong capacity to absorb in sector (Fricaudet et al, 2024)

Options which do not raise significant amounts of revenue (those that do not include a levy) have no potential for the regressive and negative impacts due to the increase in transport cost to be compensated. If no revenues are generated, the only option is for the use of targeted exemptions (certain ships/trade flows/voyages) to be implemented. However, the countries / voyages exempted would eventually need to adopt zero-carbon technologies in the long term and pay the higher energy costs associated with these options – the exemption can only postpone the onset of negative economic impacts.

12. What are the implications of choosing a specific policy combination for states at risk of Disproportionately Negative Impacts (DNI)?

Any policy combination creates impacts on states through differences in transport costs and different levels of revenue and types of revenue use. Drawing from the evidence in the UNCTAD CIA (see Figure 1)[5], let us consider the following 4 options:

- Option 1: a combination of a low levy and a flexibility mechanism on a WtW scope of emissions. (UNCTAD's scenario 32).
- Option 2: a combination of a low levy scenario and a flexibility mechanism applied to TtW emissions (UNCTAD's scenario 31)
- Option 3: a GFS with surcharge and a high levy scenario (UNCTAD's scenario 26)
- Option 4: a GFS with a flexibility mechanism and no levy (UNCTAD's scenario 24)

Option 1 and 3 will result in higher transport costs around 2030, but lowest transport costs in long-run (2050)

Option 2 will have lower transport costs than option 1 but higher transport costs than option 3 in the short and medium term

Option 4 will have lower transport costs around 2030, but higher transport costs in long-run (2050)

The different levels of revenue and revenue use (support) provided by the different proposals can be summarised as:

- Option 3 creates the greatest opportunities for supporting lower income countries in the transition – highest revenues, widest revenue use, focus on distribution through funds targeting negatively impacted and climate vulnerable countries
- Option 1 could generate similar magnitudes of total revenue as Option 3, but is more restricted on areas of revenue use and more focused on passive revenue use, which is likely to be more restrict revenue access and opportunity for lower income countries, than active revenue use targeted at lower income countries. In particular, the promoters of option 1 are generally opposed to the distribution of revenue out of sector, meaning that the countries which have a limited ability to absorb in-sector revenue would likely not be able to access significant amount of revenue (Fricaudet et al, 2024)
- Option 2 creates modest total revenues, with a focus on spending the revenues in sector, which is likely to restrict access and opportunity for lower income countries many of which do not have strong industrial/commercial bases related to international shipping
- Option 4 creates the lowest opportunities, the smallest total revenues, highest focus on passive revenues which are constrained for use 'in sector'

[5] For the purposes on drawing on UNCTAD CIA results in order to understand the different scenarios, the best matches are as follow: Option 1 – a combination of Scenario 32 and 26 results, Option 2 – closest to Scenario 31, Option 3 – very similar to Scenario 26, Option 4 – very similar to Scenario 23. One of the key findings in both DNV and UNCTAD's CIA analysis is that whether a scenario uses TTW or WtW framing makes very little difference to costs and impacts, so to allow more consistent comparison of policy architectures this paper uses a mapping of Option 1 - interpretation from S32 (WtW GFI scope, GFI flexibility mechanism, $30-120/t levy, e-fuel reward) and S26 (WtW GFI scope, no GFI flexibility, $150-300/t levy, e-fuel reward), Option 2 – interpretation from S32 (as above), Option 3 – S26 (as above), Option 4 – S24 (WtW GFI scope, GFI flexibility mechanism, no levy).

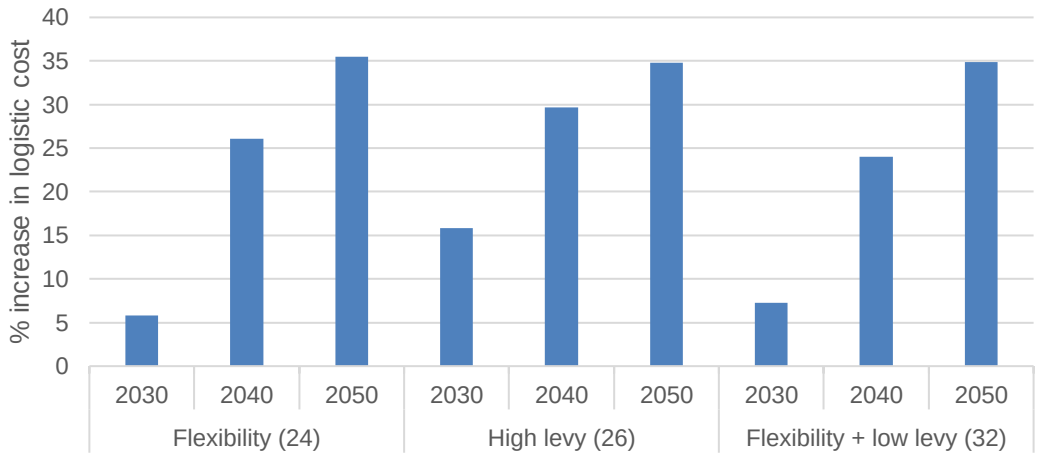

Figure 4: Change in maritime logistic cost in a selection of scenarios, for the world aggregate (UNCTAD, 2024)

The following paragraphs unpack and explain these summary evaluations in greater detail.

According to the UNCTAD CIA evidence, many lower income countries, including SIDS and LDCs, experience some of the highest negative impacts from increases in transport cost. By looking at similar scenarios in UNCTAD's CIA evidence, options 1-4 all have different relative transport cost impacts in the short and long-term, but by 2050 all will result in similar absolute transport cost increase (around 35% increase relative to a BAU scenario regardless of which option is chosen, see Figure 1).

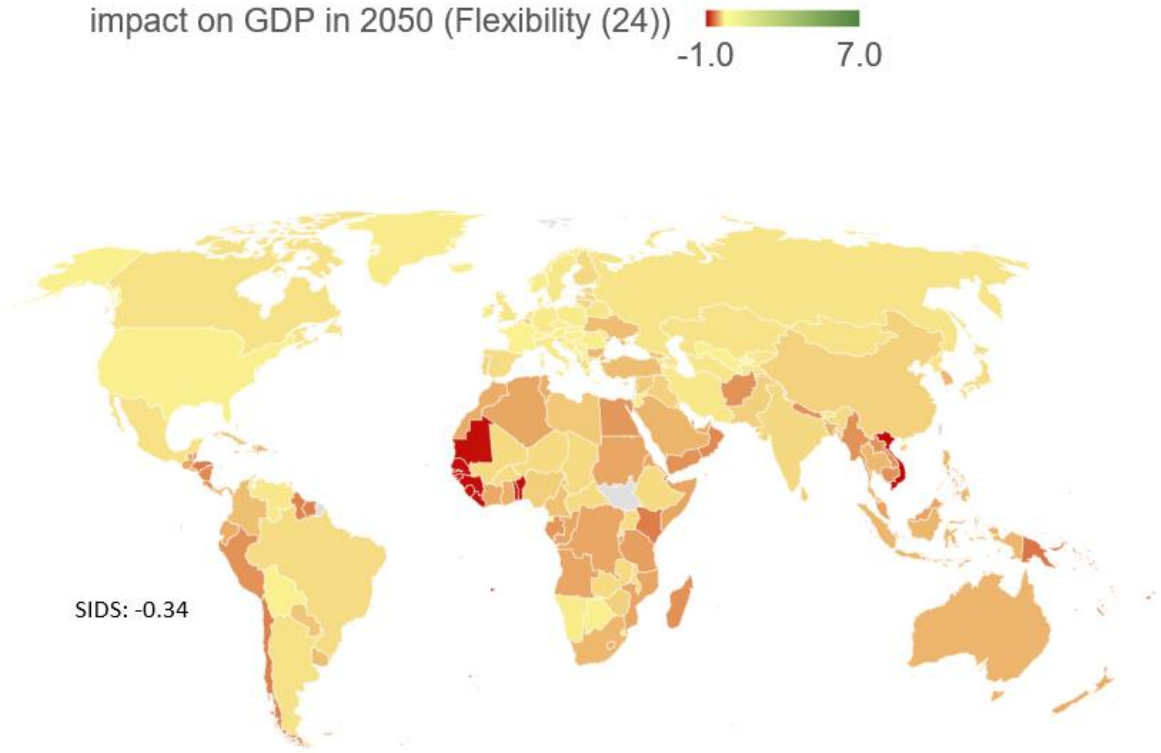

Figure 5: Impact on GDP in 2050, Scenario 24 – GFS with flexibility mechanism, no levy[67]

[6] Tool available here: https://www.shippingandoceans.com/post/new-tool-for-exploring-the-impacts-of-policy-measures-aimed-at-reducing-ghg-emissions-from-shipping

[7] Please see Section 16 for a discussion of the robustness of the results for each country.

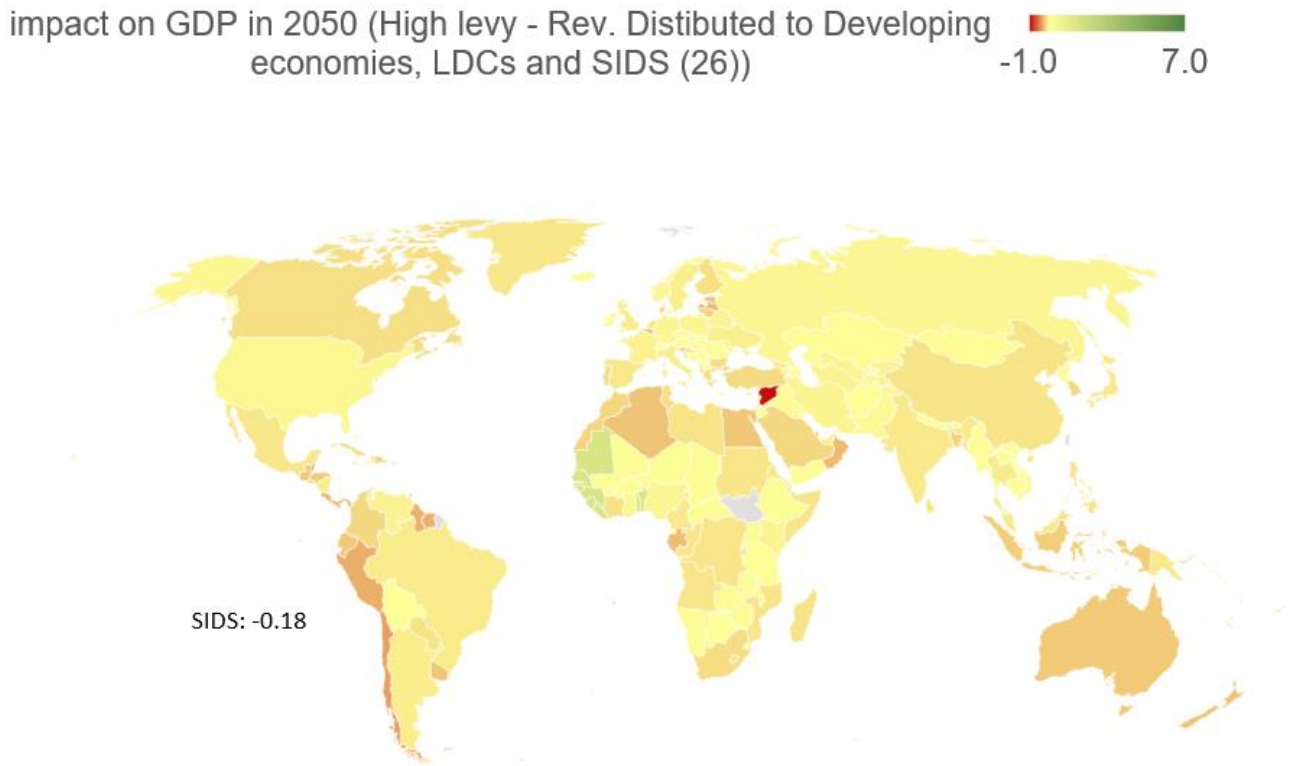

Figure 6: Impact on GDP in 2050, GFS without flexibility mechanism, levy of $150-300/t, revenues distributed to developing countries (including LDCs and SIDS)

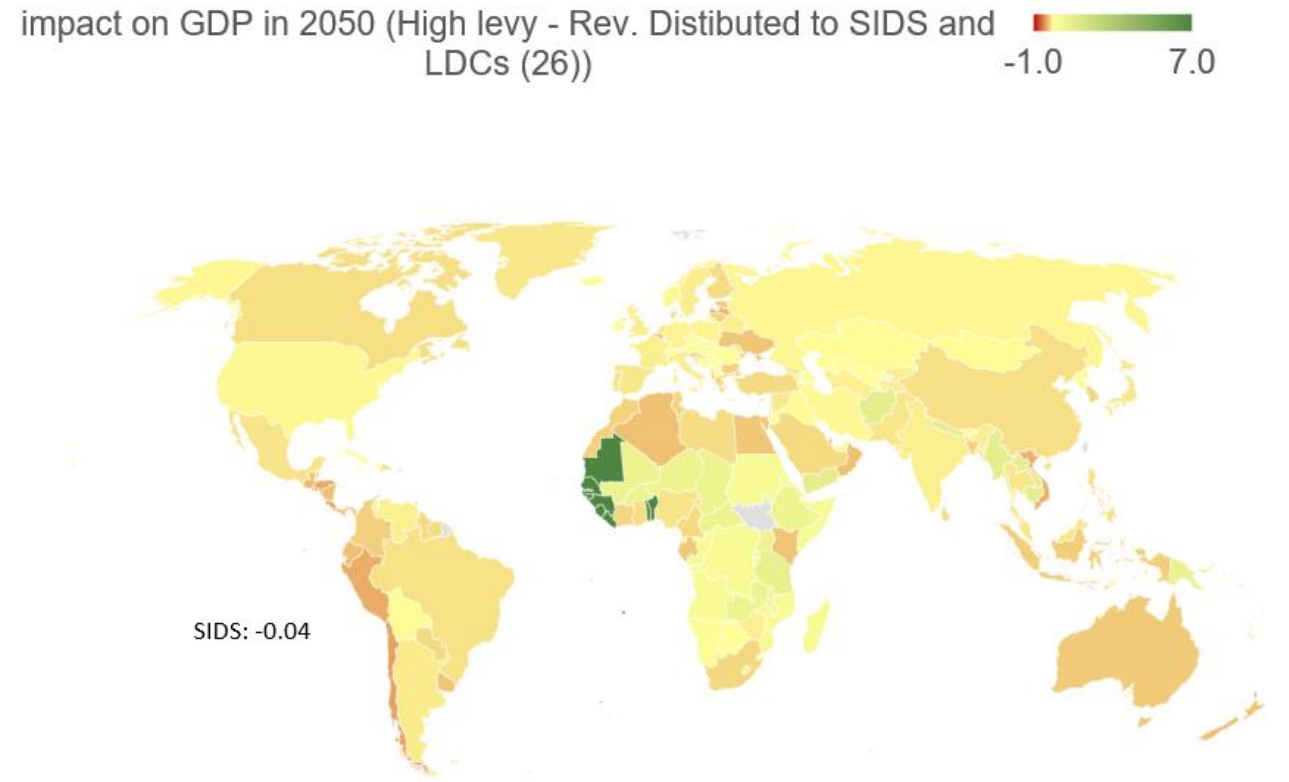

Figure 7: Impact on GDP in 2050, GFS without flexibility mechanism, levy of $150-300/t, revenues distributed to LDCs and SIDS only

Some lower income countries have a potential to benefit from 'in sector' revenues, especially those with globally competitive renewable energy/fuel potential, and especially if revenue distribution is actively managed (through a fund) and not just passively managed (flexibility, feebate). The risk if any in-sector revenues are predominantly distributed through flexibility/feebate mechanisms, is that these would more likely flow to corporates/countries that already have skills, technology, lower cost of capital, higher access to finance, lower currency risk, higher participation and negotiation capacity etc.

Besides these risks for lower income countries' ability to benefit from in-sector revenues many, including many LDCs and SIDS, are forecast to experience some of the highest GDP impacts related to transport cost increases, but may also not have good potential to access 'in sector' revenues and may need more direct mitigation of DNI (e.g. compensation for high negative GDP impacts) than can be achieved just through 'in sector' revenue use. Addressing this need would require revenue use to be inclusive of 'out of sector' uses (Fricaudet et al, 2024).

If both the above risks to lower income countries accessing and receiving revenues are addressed, then according to the UNCTAD CIA analysis, revenue use has the potential to significantly address DNI in the lowest income and most negatively impacted countries, including in many lower income countries.

Different policy options also have different likelihoods of successfully incentivising shipping's energy transition, which have implications for shipping/transport costs beyond 2050, as well as creating risks relating to increased climate impacts (if a shipping energy transition is not successful). Based on DNV's CIA analysis, Option 3 has the greatest potential for direct support of e-fuel development and availability, a key long-term technology for achieving IMO's GHG targets. This option therefore has the greatest potential to deliver a successful energy transition in international shipping by 2050. DNV's research on similar scenarios, indicates that Option 4 could incentivise 'technology lock-in' where interim technologies that only partially reduce GHG emissions are strongly incentivised and restrict uptake of long-run solutions needed to reach the 2040 and 2050 objectives. This places Option 4 as having a higher risk of failing to deliver a successful energy transition.

13. Which policy combination generally favours lower income countries, irrespective of whether they are SIDS or LDCs?

Currently, there is no clarity in different submissions describing the four architecture options about how revenues could be targeted at member states. Most proposals use the phrasing of the revised strategy to describe any focusing of revenue use e.g.: "developing countries particularly SIDS and LDCs" that implies broad inclusiveness of all developing countries, with meeting the needs of SIDS and LDCs a particular focus.
All architectures resulting from all four options could be inclusive of revenue distribution to any group or prioritisation of countries. However the four options are expected to create different total amounts of revenue – so whatever the revenue distribution logic for determining distribution between states, higher opportunities for lower income countries (whether in supporting low-income countries' energy transition or addressing DNI) would be associated with option 1 and 3.

For any policy combination to 'favour' a given country in practice, this is dependent both on the theoretical receipt of revenues (e.g. as modelled in UNCTAD's analysis), as well as the practical/actual likelihood of receipt of revenues. Actual receipt of revenues is dependent both on the rapid materialisation of global infrastructure to disperse revenues (e.g. development of new or use of existing fund structures), as well as on the development of national programmes capable of interfacing with and absorbing disbursed funds. Furthermore, there are uncertainties regarding the impact that revenue disbursement would have on the recipient countries' economy (e.g. by how much revenue

might positively affect GDP). This uncertainty is linked to the limitations inherent to the modelling of countries' economy. In particular, the revenue is distributed in UNCTAD modelling to regional households and has the effect of increasing domestic consumption. It is not targeted to specific sectors nor used to increase countries' capital endowments and hence improve their production capacity. If revenue was distributed less than optimally, if it was directed to certain sectors of the economy or used to increase the countries' production capacity, the impact on GDP might be different.

In case where there is low confidence that revenue distribution would actually reach low-income countries in practice, or when it does reach those countries, to flow through into effective positive economic impacts, then the upside potential of Option 1 and 3 becomes smaller.

14. What are the options for revenue distribution?

Both GFS flexibility mechanisms and levy policies generate revenues – GFS flexibility mechanisms can generate small and unpredictable amounts of centrally managed revenues beyond those represented by credit trading, a levy can generate higher and more predictable amounts of revenue (depending on the price). Therefore, regardless of the policy option chosen, a specification of revenue distribution will need to be agreed, and this has already been chosen as a draft sub-heading in MARPOL Annex VI Chapter 5.

There are various proposals for how revenue distribution could be realised in practice:

- Passive distribution (more polluting ship operators pay less polluting ship operators, whether through credit trading or pooling in a GFS flexibility mechanism or through a reward mechanism for use of ZNZ fuels – all basic policy options can include this revenue distribution method
- In-sector active distribution/fund management for an IMO hosted fund – all options 1-4 in Qestion 12 propose some degree of active revenue distribution by an IMO hosted fund, with variations in exactly how IMO would govern/manage the fund
- Active distribution/fund management through existing 3rd party funds – only the proponents of Option 3 in Question 12 explicitly include this proposal as part of the disbursement of revenues, to ensure effective use of existing UN/multilateral structures to support with mitigation and adaptation funding, including outside of shipping (Global Environment Facility, Green Climate Fund, Adaptation Fund).
- Direct compensation to governments – only the proponents of Option 3 in Question 12 explicitly include this proposal for further consideration, as an option if none of the other revenue distribution processes are sufficient for addressing DNI

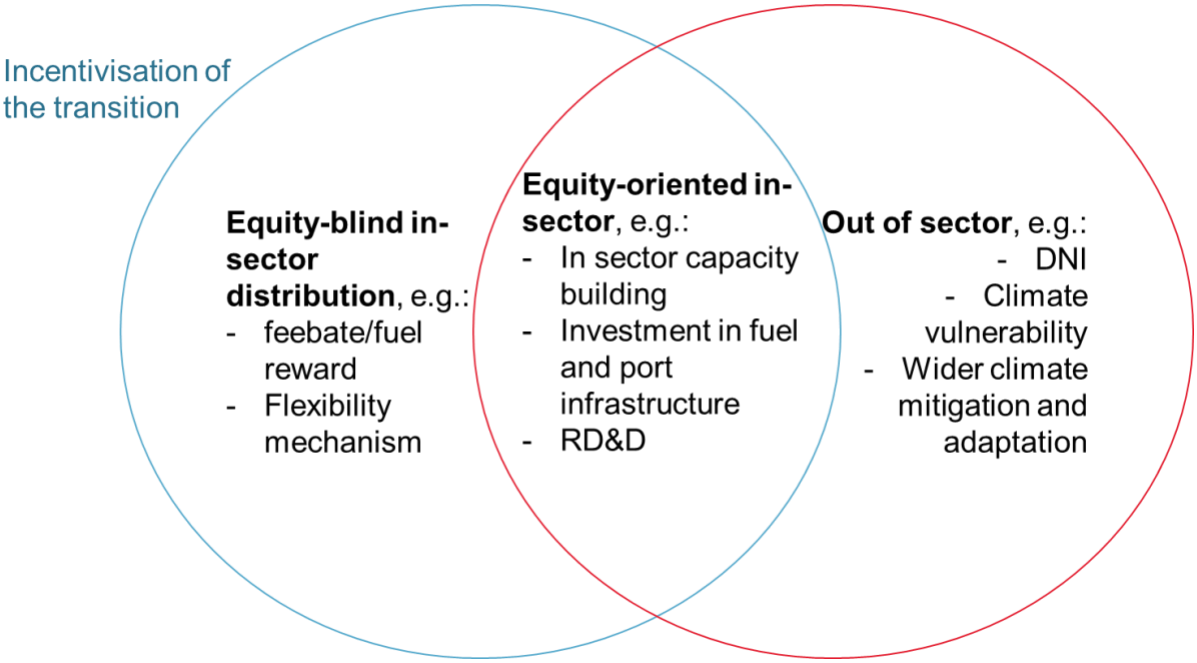

Figure 8: types of revenue distribution. From Smith et al, 2024

15. What is passive revenue distribution and how does this relate to feebate and flexibility mechanisms?

Passive revenue distribution uses a metric or trading scheme to allocate revenues or flows of funds to a beneficiary. It is the opposite of active revenue distribution, whereby a board or fund management structure reviews applications for funds and makes decisions on a case-by-case basis.

Examples of passive revenue distribution mechanisms include:

- Reward mechanism (a reward that subsidises ships that use ZNZ fuel)
- a flexibility mechanism (credit trading where shipowners trade credits for higher/lower GHG intensity or emissions for a price, with other shipowners)
- Pooling scheme that allows shipowners to form a 'pool' with other shipowners such that the average GHG emissions or emissions intensity of the pool is used to achieve compliance, and differential payments are made to participate in the pool.

Pooling's principal difference to the feebate and flexibility mechanisms is that there would be less transparency and IMO oversight/governance of the process by which prices between market actors were being set.

Passive revenue use 'automates' much of the process of revenue distribution and can therefore result in many advantages such as lower administrative burden, lowest cost of disbursement, higher predictability by industry. However, the simplicity of passive fund allocation, means that it is also difficult for these types of mechanisms to service specific needs in different countries e.g. to overcome specific barriers such as 'access to capital', 'exchange risk', 'low technical capacity and skills levels'.

Active fund management can in theory meet a broad range of objectives and be more considerate of national circumstances, for example funds can be targeted at countries or projects in specific circumstances. If used in combination and with careful design, the respective advantages of the two types of disbursement could be maximised, and disadvantages minimised. Both active and passive

revenue distribution structures face challenges for how to ensure that they ultimately flow to where they are needed.

16. What are the limitations of the modelling behind IMO's CIA, and the robustness of the evidence base?

Modelling of impacts on states has been conducted by UNCTAD using the model GTAP[8]. Both key method detail and the specific modifications/assumptions used for UNCTAD's report were extensively peer-reviewed as part of the process. The limitations of the UNCTAD modelling have been discussed at length as part of the IMO's CIA process and are explicit in the UNCTAD report.

Having reviewed the UNCTAD results for impacts on states with other studies (some using GTAP, some using similar but different models), the limitations of the robustness can be informed by the following:

- The modelling is state of the art, it has made an extensive effort to develop as robust an evidence base as possible. It includes several efforts to characterise the mid-term measures that add detail and go beyond the current literature.
- Individual country's absolute values are subject to high uncertainty, in part because they are subject to uncertainty on input data with little transparency on the quality and reliability. Results for individual countries can vary significantly, when compared to previous works which have attempted to do the same exercise. For example, Vietnam is found to be significantly impacted in scenarios without revenue distribution in the UNCTAD's CIA evidence, but similarly or less impacted than the world average in Dequiedt et al. (2024) and in Pereda et al. (2023).
- There is further uncertainty for countries which are grouped with others, as their grouping might mask important internal differences (e.g. "rest of Oceania" or "Rest of Western Africa").
- Furthermore, those findings are consistent in the literature (Sheng et al., 2018, Pereda et al., 2023, Dequiedt et al., 2024), and their robustness have been tested by UNCTAD in a sensitivity analysis. Such general findings include:
    - The order of magnitude of world GDP reduction is below 1% in all policy options and literature: the average world GDP reduction ranging from -0.3 to -0.7% and ranging from -3.6% to 0.6% for individual countries when no revenue is redistributed, across the literature (Dequiedt et al, 2024; Pereda et al., 2023; Sheng et al., 2018; UNCTAD, 2024)).
    - Lower income countries on average see a larger reduction in their GDP, while developed economies see the smallest reduction in their GDP.
    - Many of the worst affected countries are located in SIDS and LDCs (Dequiedt et al., 2024; Pereda et al., 2023; Sheng et al., 2018; UNCTAD, 2024 – but Pereda et al. (2023) do not find a particularly large impact on SIDS).
    - Redistributing the revenue of the tax to affected countries can partially to fully offset the negative effects of the increase in transport cost, depending on the rule of redistribution - this could only be tested in UNCTAD (2024) and Sheng et al. (2018), as Dequiedt et al. (2024) and Pereda et al (2023) do not consider the redistribution of revenue.
    - The UNCTAD CIA evidence however is the only one which compares different policy options – all the other pieces of evidence only considered one type of policy option (a levy). This means that the UNCTAD evidence is helpful to compare the impact of different scenario options on the world average and on the worst affected countries – although, as stated above, exactly which countries would be worst affected should be taken with caution.
- More generally, UNCTAD, like other cited papers models the implementation of the mid-term measures as a policy shock in a static manner and ignores the dynamic elements of the economy over time. There are inherent limitations in modelling the evolutions of economies in the long term,

[8] https://www.gtap.agecon.purdue.edu/about/project.asp

which largely ignore evolutions which are unforeseen at the time of modelling, or not included in the model for simplicity.

Given all the above, the absolute accuracy of the results, and the results for any one country, should be treated as indicative values only. However, comparison across regions or groups of countries of similar characterisation (developed/developing/SIDS/LDCs), and across policy scenarios e.g. to understand the relative impacts of different combinations of GFS and levy, as has been done in this paper, is more robust, and given similar limitations across all models of this type, can be considered "Best Available Science".

Appendix

Bahamas, Liberia, and ICS

New Additions presented in green, red, blue and purple:
ISWG-GHG 17/2/5 - Revised draft amendments to MARPOL Annex VI for an integrated IMO net-zero framework *(Bahamas, Liberia and ICS) (and ISWG-GHG 17/2/6 by ICS)*

ISWG-GHG- GHG 18/2/5 - Consolidation of the proposals for an economic element of the mid-term measures based on a GHG levy/contribution
(Austria, Bahamas, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Fiji, Finland, France, Georgia, Germany, Greece, Hungary, Ireland, Italy, Jamaica, Japan, Kenya, Latvia, Liberia, Lithuania, Luxembourg, Malta, Marshall Islands, Montenegro, Netherlands (Kingdom of the), Nigeria, Palau, Panama, Poland, Portugal, Republic of Korea, Romania, Seychelles, Slovakia, Slovenia, Solomon Islands, Spain, Sweden, Tonga, Tuvalu, Ukraine, United Kingdom, Vanuatu, European Commission and ICS)

ISWG-GHG- GHG 18/2/7- Updated prototype for web-based, automated GHG levy/contribution and reward mechanism, to be administered by the proposed IMO GHG Strategy Implementation Fund (*ICS)*

ISWG-GHG- GHG 18/2/6 - Proposed draft amendments to MARPOL Annex VI on revenue disbursement purposes to ensure a just and equitable transition (JET) that leaves no country, and no seafarer, behind
(*Belize, Fiji, Jamaica, Marshall Islands, Palau, Seychelles, Solomon Islands, Tonga, Tuvalu, Vanuatu, ICS)*

Measure Proposed: Fund and Reward (Feebate) Mechanism

Technological Measure: GFS - Fuel standard should be absolute – the standard remains the same over time (initial use of an absolute fuel standard for GHG intensity up until when compliance by most ships will be achieved using biofuel blends)

Economic Measure:

- Levy- From 2028, levy/contribution shall be set at a rate of [USD 18.75] per tonne of CO2e emitted on a life cycle basis over a 12-month period from 1 January to 31 December of the preceding calendar year ("reporting period").
- Reward: based on the per t/tCO2e prevented. Each ship using eligible [ZNZs], considered on a lifecycle basis, shall receive, upon request, an annual financial reward ("annual reward"). The modalities and amount of the annual reward shall be determined taking into account guidelines adopted by the Organization.
- Not universal – GFI linked

Scope

- Lifecycle Scope: TTW (As a matter of principle, it would be inappropriate for ships to be 'charged' for life cycle emissions for which other sectors are responsible, which are addressed by the NDCs of Parties to the UNFCCC Paris Agreement and may already be subject to 'carbon pricing'.)
- Ship size: 5000GT or option for 400GT and above. An additional provision has now been included in the suggested regulations so that smaller ships that may fall below the application of the possible initial threshold of [5,000]GT and above may also be eligible for rewards for the use of zero/near-zero GHG fuels and technologies if arrangements are also made for such ships to make contributions.

Exemptions: Only ship size and
.1 ships solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly; and
.2 ships not propelled by mechanical means, and platforms including FPSOs and FSUs and drilling rigs, regardless of their propulsion.'
Regardless of what is agreed concerning flexible or alternative compliance mechanisms, the co-sponsors emphasize the need to include a provision regarding the use of Fuel Oil Non-Availability Reports (FONAR)

Fund

- IMO GHG Strategy Implementation Fund structure:
- support the implementation of the 2023 IMO Strategy
- The MEPC shall oversee the operation of the IMO GHG Strategy Implementation Fund.
- administer the maritime GHG emissions pricing mechanism
- notify each ship of the required annual GHG levy/contribution.
- disburse revenue
- Disbursement may be made through competent international funding entities (the Global Environment Facility, the Green Climate Fund and the Adaptation Fund).
- maintain a database of transfers
- Fund shall have a Board of Governors. The members of the Board shall be appointed by the MEPC and be balanced in terms of geographical and gender-related representation, and with dedicated seats for SIDS and dedicated seats for LDCs.
  - IMO GHG Strategy Implementation Fund receives money from:
- Each ship shall provide an annual GHG levy/contribution

The Research, Development and Deployment Sub-Committee of the IMO GHG Strategy Implementation Fund shall support the research, development and deployment (RD&D) of mitigation projects and initiatives in developing countries, especially SIDS and LDCs, including:
.1 projects directly related to the activities of the shipping sector, including the use of ZNZ fuels and other energy;
.2 applied R&D programmes of alternative fuels and innovative technologies; and
.3 related out-of-sector activities, including those relating to ports and coastal infrastructure

In support of the proposed draft amendments to MARPOL Annex VI set out in document ISWG-GHG 18/2/5, ICS has updated its working prototype of a fully automated, internet-based, GHG levy/contribution and reward system, which would be administered by the proposed IMO GHG Strategy Implementation Fund.

Revenue Disbursement

- Each ship using eligible [ZNZs], considered on a lifecycle basis, shall receive, upon request, an annual financial reward ("annual reward"). Providing the world fleet with the needed incentive.
- 1. Supporting the energy transition in developing countries, in particular SIDS and LDCs, including through deployment of zero or near-zero GHG maritime fuel production facilities and new infrastructure that may be required in ports to expedite the energy transition and adaptation to climate change;
- 2.promoting a just transition for the maritime workforce in developing countries, including training for seafarers;
- 3.supporting capacity-building in developing countries, especially SIDS and LDCs;
  4. addressing disproportionately negative impacts (DNI) on States, of this chapter, on the basis of regular monitoring and evaluation of DNI, taking into account the results of wider revenue distribution and taking account of guidelines adopted by the Organization. DNI shall be defined as (including in

relation to food security impacts). [text to be developed]; ("Disproportionate" means "large in comparison with something else". The co-sponsors suggest that this "something" should refer to both the magnitude of their impacts relative to the impacts on other States, and the capacity of an impacted State to manage their impact)

- 5. addressing environmental protection, adaptation and resilience building, and climate response to the impacts of pollution from international shipping, with differentiated priority to climate vulnerable developing states.]

Addition - ICS and IBIA

Pooling for compliance:

- Ships that "over-comply" with the required GFI – operated by the same or different companies and registered with one or more flag States share their "excess" required GFI with another ship/s in the "pool" that may be unable to comply fully
- Overcompliance: While any "excess" reductions in required GFI achieved by the use of fuels that "over-comply" with the fuel standard might be "carried over" to help compliance by a ship during the following calendar year, and companies with ships which "over-comply" may also benefit from private arrangements under a pooled compliance mechanism, there is no need for the regulations to directly provide rewards to ships for over-compliance with the fuel standard. This is because far greater incentives for the use of ZNZ GHG fuels will be provided by feebates (rewards) as part of the distinct maritime GHG emissions pricing mechanism, to which the proposed GHG Surcharge Fees can be linked.

Belize, Fiji, Kiribati, RMI, Nauru, Solomon Islands, Tonga, Tuvalu, & Vanuatu

New Additions presented in purple, grey, orange, red and green:

ISWG-GHG 17/2/13 - A just and equitable disbursement framework for revenues generated by mid-term measures combinations and associated draft MARPOL Annex VI, chapter 5 text. *(Fiji, Kiribati, Marshall Islands, Nauru, Palau, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu)*

ISWG-GHG 17/2/14 - Specifying the economic measure *(Belize, Fiji, Kiribati, Marshall Islands, Nauru, Palau, Tuvalu, Tonga, Solomon Islands and Vanuatu)*

ISWG-GHG 18/2/20 - Specifying the economic measure – Timeline and working arrangements for the guidelines and charter of the IMO GHG Strategy Implementation Fund
(Belize, Dominica, Fiji, Jamaica, Kiribati, Marshall Islands, Palau, Samoa, Seychelles, Solomon Islands, Tonga, Tuvalu and Vanuatu)

ISWG-GHG- GHG 18/2/5 - Consolidation of the proposals for an economic element of the mid-term measures based on a GHG levy/contribution
(Austria, Bahamas, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Fiji, Finland, France, Georgia, Germany, Greece, Hungary, Ireland, Italy, Jamaica, Japan, Kenya, Latvia, Liberia, Lithuania, Luxembourg, Malta, Marshall Islands, Montenegro, Netherlands (Kingdom of the), Nigeria, Palau, Panama, Poland, Portugal, Republic of Korea, Romania, Seychelles, Slovakia, Slovenia, Solomon Islands, Spain, Sweden, Tonga, Tuvalu, Ukraine, United Kingdom, Vanuatu, European Commission and ICS)

ISWG-GHG- GHG 18/2/6 - Proposed draft amendments to MARPOL Annex VI on revenue disbursement purposes to ensure a just and equitable transition (JET) that leaves no country, and no seafarer, behind
(Belize, Fiji, Jamaica, Marshall Islands, Palau, Seychelles, Solomon Islands, Tonga, Tuvalu, Vanuatu, ICS)

Measure Proposed: GFS combined with emissions pricing mechanism (levy)

Technological Measure: GFS of increasing stringency

Economic Measure:

- Levy- From 2028, levy/contribution shall be set at a rate of [USD 150] per tonne of CO2e emitted on a life cycle basis over a 12-month period from 1 January to 31 December of the preceding calendar year ("reporting period"), subject to a 5-yearly review and ratchet clause
- Implements a polluter pays principle in the sector by establishing a fixed price per tCO2e
- Reward: based on the per t/tCO2e prevented. Each ship using eligible [ZNZ fuels], considered on a lifecycle basis, shall receive, upon request, an annual financial reward ("annual reward"). The modalities and amount of the annual reward shall be determined taking into account guidelines adopted by the Organization.
- Simplified strong penalty for: Underperformance of GHG Fuel Intensity (price set to clearly disincentivize) Both GHG reduction objectives and ensuring investment in new technologies & fuels are contingent on the strength and clarity of the sanction for failing to achieve GFI targets. Insufficient disincentive for underperformance (FONAR loopholes etc) will only undermine investment into the technology and fuel production, leading to a spiral of lack of availability. Reliance on higher cost 'drop in' fuels and/or ship operators resorting to 'pay to pollute' will lead to failure to achieve the 2023 Strategy objectives.
- NO Flexibility: as they are 'equity blind' and reward those with existing strong industrial bases, good access to low-cost/least-risk capital and supportive state enabling environments.

Scope

- Lifecycle Scope: WTW
- Ship size: ships 400GT and above
- Non-compliant ships may attract penalties, which could be financial or operational restrictions, designed to enforce the GFS and the levy requirements. These penalties aim to ensure a level playing field and avoid unfair competition or perverse incentives
- Applies to all ships, with the exception of vessels under 400 GT

Fund

- IMO GHG Strategy Implementation Fund structure:
- support the implementation of the 2023 IMO Strategy
- The MEPC shall oversee the operation of the IMO GHG Strategy Implementation Fund.
- administer the maritime GHG emissions pricing mechanism
- notify each ship of the required annual GHG levy/contribution.
- disburse revenue
- Disbursement may be made through competent international funding entities (the Global Environment Facility, the Green Climate Fund and the Adaptation Fund).
- maintain a database of transfers
- Fund shall have a Board of Governors. The members of the Board shall be appointed by the MEPC and be balanced in terms of geographical and gender-related representation, and with dedicated seats for SIDS and dedicated seats for LDCs.
- IMO GHG Strategy Implementation Fund receives money from:
- Each ship shall provide an annual GHG levy/contribution
- Penalty

The Research, Development and Deployment Sub-Committee of the IMO GHG Strategy Implementation Fund shall support the research, development and deployment (RD&D) of mitigation projects and initiatives in developing countries, especially SIDS and LDCs, including:
.1 projects directly related to the activities of the shipping sector, including the use of ZNZ fuels and other energy;
.2 applied R&D programmes of alternative fuels and innovative technologies; and
.3 related out-of-sector activities, including those relating to ports and coastal infrastructure

- Investment in mitigation requires two basic sub-categories:
- .1 subsidisation of eligible fuels and technologies; and (active)
- .2 reward subsidisation for overperformance when using eligible fuels and technologies by market leaders (feebate). (passive)
- (Active Fund Management: involves a more hands-on, deliberate approach to deciding how the funds are used. In this approach, a designated board or committee actively oversees and directs the allocation of funds based on specific objectives, criteria, or needs. The key characteristic of active management is that it requires ongoing decisions and interventions by the managing body to ensure the funds are being used in a way that aligns with strategic goals. Passive Fund Management: is hands-off, where funds are disbursed according to pre-set rules or formulas without the need for continuous oversight or decision-making by a board or committee. Passive management often involves distributing funds in a way that requires minimal intervention.)

Necessity and urgency to establish the Fund as part of the amendments. The Fund should be legally established in MARPOL Annex VI, and the detail in the amendment needs to cover both high-level description and core provisions for the establishment and operation of the Fund.

Revenue Disbursement

- Each ship using eligible [ZNZs], considered on a lifecycle basis, shall receive, upon request, an annual financial reward ("annual reward"). Providing the world fleet with the needed incentive.
- 1. Supporting the energy transition in developing countries, in particular SIDS and LDCs, including through deployment of zero or near-zero GHG maritime fuel production facilities and new infrastructure that may be required in ports to expedite the energy transition and adaptation to climate change;
- 2.promoting a just transition for the maritime workforce in developing countries, including training for seafarers;
- 3.supporting capacity-building in developing countries, especially SIDS and LDCs;
  4. addressing disproportionately negative impacts (DNI) on States, of this chapter, on the basis of regular monitoring and evaluation of DNI, taking into account the results of wider revenue distribution and taking account of guidelines adopted by the Organization. DNI shall be defined as (including in relation to food security impacts). [text to be developed]; ("Disproportionate" means "large in comparison with something else". The co-sponsors suggest that this "something" should refer to both the magnitude of their impacts relative to the impacts on other States, and the capacity of an impacted State to manage their impact)
- 5. addressing environmental protection, adaptation and resilience building, and climate response to the impacts of pollution from international shipping, with differentiated priority to climate vulnerable developing states.]
- JET:

- 1 the transition should be procedurally fair;
- 2 the transition should be equitable in relation to maritime mitigation;

- 3 the transition should be equitable in responding to climate impacts and
- 4 the transition should be equitable for the labor market.'

Argentina, Brazil, China, Norway, South Africa, UAE and Uruguay

New Additions presented in pink, green, blue, orange and burgundy
ISWG-GHG 17/2/7 - Updates on the International Maritime Sustainable Fuels and Fund (IMSF&F) mechanism and revised draft amendments to MARPOL Annex VI using the structure of the "IMO net-zero framework
(Angola, Argentina, Brazil, China, Ecuador, Norway, South Africa, United Arab Emirates and Uruguay)

ISWG-GHG 18/2/10 - Outline of a possible way forward to bridge the different proposals for economic measure(s)
(India)

ISWG-GHG 18/2/11 - Modifications to the draft amendments to MARPOL Annex VI on the net-zero framework as set out in annex 1 to document MEPC 82/WP.9
(China, South Africa and United Arab Emirates)

ISWG-GHG 18/2/12 - Detailed design proposals for key elements of the International Maritime Sustainable Fuels and Fund (IMSF&F) mechanism
(China, United Arab Emirates, South Africa)

ISWG-GHG 18/2/14 - Proposal to temporarily suspend the implementation of chapter 5 on "Regulations on the IMO net-zero framework" of MARPOL Annex VI for semi-submersible vessels
(China)

Measure Proposed: International Maritime Sustainable Fuels and Fund (IMSF&F) mechanism

Technological Measure: mixed

Economic Measure:
- The measure brings together both technical and economic mechanisms into a single integrated framework.
- The measure combines four main components:
- A GHG intensity-based fuel standard (GFI) that evaluates fuels based on their emissions
- The specific method for calculating GHG intensity uses "TtW Value 2" that accounts for biogenic carbon sources, rather than just measuring all emissions equally
- Specific sustainability requirements
- Flexible compliance mechanisms, including options for pooling and banking
- A system of financial rewards distributed through a fund
  - A fuel standard is set to gradually reduce the GHG intensity of marine fuels
  - Z factor (GFI Reduction factor)
- .1 the GFI reference value (TtW) is proposed at 77.7 gCO2e/MJ; and
- .2 two options for reduction factors (Z factors) covering the period 2027-2050 are provided.
  - Methods for determining GFI targets (Z factors): No “strive” but “at least” targets (derived from the revised strategy) as this is more practically feasible
  - Ships compare their GHG intensity to this standard. If they are below the standard, they generate surplus units (SUs), and if they are above, they incur deficit units (DUs)
  - Ships with surplus units can trade them with ships that have deficit units

- Ships with deficit units can also buy remedial units (RUs) to achieve compliance
- Under-compliant ships also have to transfer a fixed monetary amount to the SSF for each Surplus Unit (SU) transaction to remedy a Deficit Unit (DU). (also in pools) Similarly: SU transfer happens via the IMO GFI Registry in addition to within a compliance pool & a handling fee is applied to any Surplus Unit transfer, including within a compliance pool, through the IMO GFI Registry, or banked for further use & IMO GFI Maritime GHG Pricing System Registry will track all compliance unit transactions and pricing methods are clarified using the Reference Unit Price as a basis. Similarly: 2 additional revenue sources added: handling fees for SU transactions, and contingent supplementary ZNZ incentive contributions that can be activated as needed (a contingent supplementary ZNZ incentive contribution mechanism may be considered. Additional contributions may be collected through charges on all non-ZNZ fuels (in USD/GJ), charges on all unabated fossil fuel consumption including fossil components in biofuel blends (in USD/GJ), or charges on all Deficit Units from under-compliant ships. The need for this mechanism and its potential funding methods will be evaluated during the review by 2030. This would have to be part of a separate convention)
- The Committee determines the price of SUs and RUs before each compliance period begins (see more details in the submission as to how the price should be determined)
- Definition of Reference Unit Price = the basic equilibrium price (in USD/t CO2eq) determined by the Organization to set the Remedial Unit price, Surplus Unit handling fee, and reward level for eligible zero- or near-zero GHG emission technologies, fuels, and/or energy sources.

- Fuels are assessed based on their whole lifecycle GHG emissions and other sustainability factors. Fuels are classified into two main categories:

- *Category S* (Sustainable Fuels): Meet certain GHG intensity and sustainability criteria
- *Category F* (Unsustainable Fuels): Produced from unabated fossil sources

- Within Category S, fuels are further graded (A+, A, B, C) based on their GHG intensity
- Category F fuels may be used under certain conditions until a specific year.
- Only sustainable fuels (Category A+, A, B, C) can generate surplus units.
- Three flexible compliance approaches, namely pooling, banking and fund contribution/reward, are provided for both over-compliant and under-compliant ships
- The updated system removes the broad fuel categories (A-F) and instead allocates for each fuel type individually a WtW correction factor.
- A change to create an economic incentive for ZNZ GHG Emission Technologies: Old System: In case of over compliance: Low WtW emission fuels were rewarded through Surplus Units to be sold/general reward claimed. However, all sustainable fuels were treated equally in terms of rewards. There was no distinction in terms of rewards based on the specific type of sustainable fuel used.
- New System: In case of over compliance, still receive SUs. Further for the adoption of eligible ZNZ GHG emission technologies, fuels, and energy sources, there is a reward.
- The reward will be designed as an incentive to enable such ZNZs to overcome challenges and compete with other alternatives, despite their high prices. It is worth noting that the rewards for eligible ZNZs should be set at a level that helps narrow their cost gap with other compliant options, rather than eliminating the gap completely. The eligibility for claiming ZNZs rewards is limited to ships that have a positive initial compliance balance in implementing the goal-based fuel standard. Under-compliant ships are not allowed to claim ZNZs reward, regardless of whether or not eligible ZNZs were consumed during the reporting period.
- In the updated version, Surplus Units of an over-compliant ship are also allowed to be used for pooling or banking, or to be cancelled on a voluntary basis. However, as specific economic rewards are provided for eligible ZNZs, a general reward for Surplus Units has been eliminated.

- Thus, the reward is now tied specifically to ZNZ fuels and technologies, while other fuels can still generate Surplus Units, but without a reward.
- Meaning for Compliance: Can be reached with any type of "sustainable" fuel.
- ZNZs should include technologies, fuels and energy sources. Due to their different natures, their definitions may vary: for fuels, the WtW GFI thresholds need to gradually decrease from 25% to 3% of the baseline WtW GFI; for energy sources, sustainable electricity (including batteries), wind, solar and nuclear power should be considered ZNZs, taking into account the guidelines to be developed by the Organization; and for technologies, GHG reduction technologies, including onboard carbon capture and storage (OCCS), may qualify as ZNZs, pending guidelines from the Organization.

Scope

- The measure uses a hybrid lifecycle approach: While primarily focused on TTW emissions, it incorporates sustainability criteria to account for differences between fuels when comparing their full WTW emissions versus TTW emissions, particularly considering upstream production emissions.
- The measure can be applied to ships either above 400GT or above 5000 GT

Exemptions:

- Size of ship
- domestic operations (such as sovereignty and jurisdiction), floating platforms, etc.
- port-based exemptions
- Fuel oil non availability report (FONAR)
- Temporarily suspend the implementation for semi-submersible vessels as they are a special type and should be excluded/exempt

Fund

- The Sustainable Shipping Fund (SSF) will be established by the IMO and overseen by a governing board
- The revenue of the SSF will be primarily raised through the sale of Remedial Units to under-compliant ships
- The Fund may also receive monetary voluntary contributions from other sources, such as donations
- "Bridge Proposal": The Fund will additionally receive money from under-compliant ships that have to transfer a fixed monetary amount to the SSF for each Surplus Unit (SU) transaction to remedy a Deficit Unit (DU). (also in pools) Similarly: payments to acquire RUs, handling fees from under-compliant ships for Surplus Unit purchases and from over-compliant ships for Surplus Unit banking.
- The revenues collected will be used as a priority to satisfy reward claims for Surplus Units
- Remaining funds will be allocated to research and development (R&D), technology transfer regarding alternative fuels and innovative technologies, in-sector capacity building, and negative impact mitigation in developing countries while promoting a just and equitable transition
- Clarification: The administration cost of the SSF and SSB will be covered by the annual administration fee of ships paid through the GFI Registry to the SSF.

Revenue Disbursement:

Addition/Clarification: The revenues received will be used as a priority to satisfy reward claims for the uptake of eligible ZNZs. The remaining revenues will be allocated for the following purposes:

.1 programmes and projects to promote applied R&D and technology transfer regarding alternative fuels and innovative technologies;

.2 in-sector capacity-building and investment in port and bunkering infrastructure in developing countries, as well as promoting a just and equitable transition; and

.3 mitigation of negative impacts, in the context of the implementation of the measures, on developing countries, including SIDS and LDCs.

EU, Japan

New Additions presented in orange, green, plum, pink and red:

ISWG-GHG 17/2/2 - Proposal on a combination of a GHG fuel standard and a universal GHG contribution
(Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, Netherlands (Kingdom of the), Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the European Commission)

ISWG-GHG 18/2/1 - Considerations for the level of the reduction factor of the GHG fuel intensity regulatory value
(Japan)

ISWG-GHG- GHG 18/2/2 - Considerations on the equation of attained GHG Fuel Intensity
(Japan)

ISWG-GHG- GHG 18/2/4 - Proposal on the further development of the operational and governance aspects of a fund to be adopted by the entry into force of the basket of mid-term measures
(Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, Netherlands (Kingdom of the), Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the European Commission)

ISWG-GHG- GHG 18/2/5 - Consolidation of the proposals for an economic element of the mid-term measures based on a GHG levy/contribution
(Austria, Bahamas, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Fiji, Finland, France, Georgia, Germany, Greece, Hungary, Ireland, Italy, Jamaica, Japan, Kenya, Latvia, Liberia, Lithuania, Luxembourg, Malta, Marshall Islands, Montenegro, Netherlands (Kingdom of the), Nigeria, Palau, Panama, Poland, Portugal, Republic of Korea, Romania, Seychelles, Slovakia, Slovenia, Solomon Islands, Spain, Sweden, Tonga, Tuvalu, Ukraine, United Kingdom, Vanuatu, European Commission and ICS)

Measure Proposed: Combination of a GHG Fuel Standard with its Flexibility Compliance Mechanism (FCM) ("GFS")

Technological Measures GFS

Economic Measures

- Levy- From 2028, levy/contribution shall be set at a rate of [USD 100] per tonne of CO_2e emitted on a life cycle basis over a 12-month period from 1 January to 31 December of the preceding calendar year ("reporting period").
- Reward: based on the per t/tCO_2e prevented. Each ship using eligible [ZNZ fuels]/[ZNZs], considered on a lifecycle basis, shall receive, upon request, an annual financial reward ("annual reward"). The modalities and amount of the annual reward shall be determined taking into account guidelines adopted by the Organization.
- Suggests values for Z factor (GFI reduction factor): Japan examined the possible Z factor reduction trajectories using some assumptions based on the discussions to date
- Japan supports including the effects of zero-emissions energy sources in the calc for the attained GFI. Energy sources include electricity supplied by onshore power supply and zero-emission energy sources such as wind and solar.

Flexibility Compliance Mechanism (FCM):

- Ships that perform better than the required GFI can receive Surplus Compliance Units (SCUs) based on the difference between the required and attained GFI. These SCUs can be banked or traded to help other ships meet compliance.
- Ships that do not meet the GFIreq can buy Remedial Compliance Units (RCUs) or SCUs from the GFI Registry to achieve compliance. The sale of RCUs generates revenue used for promoting the energy transition in developing states and other purposes related to emission reductions.

Scope

- Types of Ships: 5,000 gross tonnage and above, with a future extension to include ships of 400 gross tonnage and above from a specified calendar year
- Lifecycle Scope: WTW

Exemptions:

- Voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly.
- Ships Below Certain Tonnage - ships below 5,000 gross tonnages are exempt. However, the scope will extend to include ships of 400 gross tonnage and above from a specified future year.
- Ships not propelled by mechanical means, and platforms including FPSOs and FSUs and drilling rigs, regardless of their propulsion.'

Fund

- IMO GHG Strategy Implementation Fund structure:
- support the implementation of the 2023 IMO Strategy
- The MEPC shall oversee the operation of the IMO GHG Strategy Implementation Fund.
- administer the maritime GHG emissions pricing mechanism
- notify each ship of the required annual GHG levy/contribution.
- disburse revenue
- Disbursement may be made through competent international funding entities (the World Bank Country and Lending Groups).
- maintain a database of transfers
- Fund shall have a Board of Governors. The members of the Board shall be appointed by the MEPC and be balanced in terms of geographical and gender-related representation, and with dedicated seats for SIDS and dedicated seats for LDCs.
- IMO GHG Strategy Implementation Fund receives money from:
- Each ship shall provide an annual GHG levy/contribution
- The buying of RUs
- Core provisions which establish the fund need to be agreed now, and after MEPC 83 the TORs should be developed.

The IMO GHG Strategy Implementation Fund shall promote the energy transition of shipping through research [,] [and] development [and innovation] [and deployment], including through support for novel, efficient technologies for fuel production, bunkering technologies, use of zero or near zero energies, use and installation of zero- and near-zero technologies with proven efficiency improvement or GHG emissions reduction, cutting-edge energy efficiency improvements in shipping and the development of GHG reduction solutions for ships

navigating in difficult conditions, and applied R&D programmes of alternative fuels and innovative technologies, deployed equitably on a global basis.]

Revenue Disbursement

- Each ship using eligible [ZNZs], considered on a lifecycle basis, shall receive, upon request, an annual financial reward ("annual reward").
- 1. Supporting the energy transition in developing countries, in particular SIDS and LDCs, including through deployment of zero or near-zero GHG maritime fuel production facilities and new infrastructure that may be required in ports to expedite the energy transition and adaptation to climate change;
- 2.promoting a just transition for the maritime workforce in developing countries, including training for seafarers;
- 3.supporting capacity-building in developing countries, especially SIDS and LDCs;
  4. addressing disproportionately negative impacts (DNI) on States, of this chapter, on the basis of regular monitoring and evaluation of DNI, taking into account the results of wider revenue distribution and taking account of guidelines adopted by the Organization. DNI shall be defined as [text to be developed];
- 5. addressing environmental protection, adaptation and resilience building, and climate response to the impacts of pollution from international shipping, with differentiated priority to climate vulnerable developing states.]
- Revenues received shall be disbursed by the IMO GHG Strategy Implementation Fund exclusively on initiatives that reduce the GHG emissions within the boundaries of the energy system of international shipping.

Additional Proposals:

Republic of Korea - ISWG-GHG 17/2/3

Proposal for fund: IMO Net-zero Fund:
Established a separate legal entity.
Essential to designate an appropriate trustee with expertise in financial intermediary services to handle the large-scale revenue and ensure transparent management. These trustees will manage the fund's income and disbursements, and once the fund approves the designated agencies' projects, it will transfer part of the revenue to these agencies upon request. Regular accounting reports on revenue and expenditures, as well as future plans, should be provided to both the IMO Net-zero Fund and the Organization.

The revenue disbursement is divided into
Active use and Passive use:Passive use refers to the use limited to the implementation of mid-term measures, such as providing incentives for eligible fuels. While Active use refers to more proactive utilization, such as investing in research and development (R&D), technical cooperation and transfer, and capacity building.

The Organization should establish revenue distribution principles by referring to the multilateral funds of UNFCCC, respecting the CBDR principle as a non-party stakeholder in the UN system cooperating on climate change

Indonesia, Philippines, Singapore, Thailand and United Arab Emirates– ISWG-GHG 18/2/18

Proposal for a IMO GFI Registry:
A centralized and trusted repository of GFI data. It will record information such as each ship's attained GFI, compliance surpluses and deficits for each reporting period, the units held by each ship in its account, as well as a transaction log of these units. The Administration of where a ship is flagged to will be able to query into the IMO GFI Registry to check on compliance status, and, in this regard, the IMO GFI Registry will provide a clear, auditable record of all relevant GFI data, and serve as a trusted ledger of each ship's compliance status.

Republic of Korea - ISWG-GHG 18/2/3

Republic of Korea believes that the "Strive" reduction target should serve as a reference, potentially included in relevant guidelines, while only the "Base" reduction target should be incorporated into the amendments to MARPOL Annex V.

Due to uncertainties, the Republic of Korea advocates for setting WtW GFI targets on a decadal basis (for 2030, 2040, and 2050) while reviewing them every five years, in line with the periodic review process of the IMO GHG Strategy. In the short term, annual targets up to 2030 might also be appropriate.

With regard to the levy: Selling RUs does not generate enough revenues, but levy is a significant burden. Imposing a levy of US$ 18.75 per tonne of GHG emissions would generate an estimated fund of approximately US$ 11.90 billion. A levy of US$ 100 per tonne would generate approximately US$ 63.5 billion, while a levy of US$ 150 per tonne would result in approximately US$ 95.25 billion. This would represent the largest single international environmental fund ever proposed. Imposing excessive levies to incentivize a limited number of alternative fuel ships during the early stages of mid-term measures could place significant burdens on the international shipping industry. In the absence of a clear agreement on fund allocation, a minimal levy system should be considered based on a pilot operation.

Republic of Korea - ISWG-GHG 18/2/9

Proposal for a Fund Setup: The Republic of Korea proposes naming the IMO Net-Zero Fund the "International Maritime Climate Fund" (IMCF) and suggests a structure for revenue collection and utilization through systems such as GHG levy contributions and the issuance of Remedial Compliance Units (RCUs).
The IMCF is an independent legal entity under the IMO umbrella. The Organization will provide strategic guidance for the overall operation and objectives of the IMCF under the IMO umbrella. The IMCF will function as a financial mechanism to achieve the 2023 IMO GHG Strategy and objectives. The IMCF submits an annual report to the IMO
Structure: The IMCF will be governed by a Board, which will make key decisions, including approving the budget and activities of the Fund. Then there is also a Secretariat with different tasks, including: Reward Management Division (Passive Use), R&D and Support Projects Division (Active Use), Ethics and Audit Division
Revenue Stream: RCUs, levy

Antigua and Barbuda, Belize, Dominica, Ethiopia, Fiji, Jamaica, Kiribati, Marshall Islands, New Zealand, Palau, Samoa, Seychelles, Singapore, Solomon Islands, Tonga, Tuvalu and Vanuatu - ISWG-GHG 18/2/19

Defines the Goal more
Central is:
- Respond to climate change
- JET

Regulation X
Goal
"Effectively promoting the energy transition of shipping and providing the world fleet with a needed incentive while contributing to a level playing field and a just and equitable transition."

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

www.shippingandoceans.com