

Flexibility of existing proposals for a maritime MBM¹ to mitigate or compensate impact on the most vulnerable

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Introduction

This briefing paper explores and compares flexibility of existing proposals for a maritime MBM to mitigate or compensate the most vulnerable countries for the scheme's cost burden (incidence).

The paper is structured as follows. Following this introduction, Section 1 outlines the existing proposals for a global maritime MBM. Section 2 describes the proposed compensation solution- a rebate mechanism, that can be integrated with certain revenue raising MBMs. Section 3 describes a ship threshold approach to partially eliminate a MBM's impact on some of the most vulnerable developing countries. Section 4 concludes.

1. EXISTING PROPOSALS

It is generally agreed that any MBM for international maritime transport should be global and apply to all ships irrespective of the flag they fly, for legal reasons, and in order to avoid evasions and competitive distortions. Already three-quarters of the global fleet is flagged in developing countries and the remaining quarter could re-flag if faced with additional costs applied only to them, as it is straightforward to change the flag of a ship. Thus all MBM proposals currently being considered by the IMO assume application to all ships. They are (see MEPC 61/INF.2):

1. International Fund for GHG emissions from ships (GHG Fund)
2. Leveraged Incentive Scheme (LIS)
3. Port State Levy (PSL)
4. Ship Efficiency Credit Trading (SECT)
5. Vessel Efficiency System (VES)
6. Emission Trading System (ETS)
7. Rebate Mechanism (RM); comprising RM ad-on and RM integrated (IMERS)

¹ A maritime MBM means a global Market-Based Mechanism or Measure for greenhouse gas (GHG) emissions from international maritime transport, such as a levy on shipping fuel or an Emission Trading System (ETS).

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1.1 Overview of proposals

The following provides a brief overview of the seven proposals.

- 1 An International Fund for Greenhouse Gas emissions from ships (GHG Fund) proposed by Cyprus, Denmark, the Marshall Islands, Nigeria and IPTA (MEPC 60/4/8)** – would establish a global reduction target for international shipping, set by either UNFCCC or IMO. Emissions above the target line would be offset largely by purchasing approved emission reduction credits. The offsetting activities would be financed by a contribution paid by ships on every tonne of bunker fuel purchased. It is envisaged that contributions would be collected through bunker fuel suppliers or via direct payment from shipowners. The contribution rate would be adjusted at regular intervals to ensure that sufficient funds are available to purchase project credits to achieve the agreed target line. Any additional funds remaining would be available for adaptation and mitigation activities via the UNFCCC and R&D and technical co-operation within the IMO framework.
- 2 Leveraged Incentive Scheme (LIS) proposed by Japan (MEPC 60/4/37)** – is designed to target "direct" reduction of CO₂ emission primarily from the shipping sector. The concept of the Leveraged Incentive Scheme is that a part of the GHG Fund contributions, which are collected on marine bunker is refunded to ships meeting or exceeding agreed efficiency benchmarks and labelled as "good performance ships".
- 3 Port State Levy (PSL) proposed by Jamaica (MEPC 60/4/40)** – calls for an IMO global agreement, in which Member States participate by levying a uniform emissions charge on all vessels calling at their respective ports based on the amount of fuel consumed by the respective vessel on its voyage to that port (not bunker suppliers). The proposal is directly aimed at reducing maritime emissions of CO₂ without regard to design, operations, or energy source. The Port State Levy would be structured to achieve the global reduction targets for GHG and could be leveraged in a manner as proposed by Japan to reward vessels exceeding efficiency targets.
- 4 The Ship Efficiency and Credit Trading (SECT) proposed by the United States (MEPC 60/4/12, MEPC 61/5/16)** – is designed to focus emission reduction activities just in the shipping sector. Under SECT, all ships, including those in the existing fleet, would be subject to mandatory energy efficiency standards, rather than a cap on emissions or a surcharge on fuel. As one means of complying with the standard, SECT would establish an efficiency-credit trading programme. The stringency level of these efficiency standards would be based on energy efficiency technology and methods available to ships in the fleet. These standards would become more stringent over time, as new technology and methods are introduced. Similar to the EEDI, these efficiency standards would be based on a reduction from an established baseline and would establish efficiency standards for both new and existing ships. The SECT is designed to achieve relative GHG reductions, i.e. reductions in emissions per tonne mile and not to set an overall target for the sector.
- 5 Vessel Efficiency System (VES) proposal by World Shipping Council (MEPC 60/4/39)** – would establish mandatory efficiency standards for both new and existing ships. Each vessel would be judged against a requirement to improve its

efficiency by X% below the average efficiency (the baseline) for the specific vessel class and size. Standards would be tiered over time with increasing stringency. Both new build and existing ships would be covered. New builds must meet the specified standards or they may not operate. New builds, once completed, are not defined as existing ships. The system applicable to existing ships sunsets when today's fleet turns over. Existing ships may comply by improving their efficiency scores through technical modifications that have been inspected and certified by the Administration or recognized organizations. Existing ships failing to meet the required standard through technical modifications would be subject to a fee applied to each tonne of fuel consumed. The total fee applied (non-compliant ships only) would vary depending upon how far the vessel's efficiency (as measured by the EEDI) falls short of the applicable standard. A more efficient ship would pay a smaller penalty than a less efficient ship that falls short of the standard by a wide margin.

- 6 The global Emission Trading System (ETS) for international shipping proposal by Norway (MEPC 61/4/22), by the United Kingdom (MEPC 60/4/26), and by France (MEPC 60/4/41)** – would set a sector-wide cap on net emissions from international shipping and establish a trading mechanism to facilitate the necessary emission reductions, be they in-sector or out-of-sector. The use of out-of-sector credits allows for further growth of the shipping sector beyond the cap. In addition the auction revenue would be used to provide for adaptation and mitigation (additional emission reductions) through UNFCCC processes and R&D of clean technologies within the maritime sector. A number of allowances (Ship Emission Units) corresponding to the cap would be released into the market each year. It is proposed that the units would be released via a global auctioning process. Ships would be required to surrender one Ship Emission Unit, or one recognized out-of-sector allowance or one recognized out-of-sector project credit, for each tonne of CO₂ they emit.

The Norwegian ETS would apply to all CO₂ emissions from the use of fossil fuels by ships engaged in international trade above a certain size threshold. The proposal also indicates that limited exemptions could be provided for specific voyages to Small Island Developing States.

Two aspects of the UK proposal that differ from the Norwegian ETS proposal are the method of allocating emissions allowances and the approach for setting the emissions cap. The UK proposal suggests that allowances could be allocated to national governments for auctioning. It also suggests the net emission cap would be set with a long term declining trajectory with discrete phases (for example, five to eight years) with an initial introductory or transitional phase of one to two years.

The French proposal sets out additional detail on auction design under a shipping ETS. In all other aspect the proposal is similar to the Norwegian proposal for an international ETS.

- 7 The Rebate Mechanism (RM) proposal by IUCN (MEPC 60/4/55, MEPC 61/5/33)** – focuses on a Rebate Mechanism to compensate developing countries for the financial impact of an MBM. A developing country's rebate would be calculated on the basis of their share of global costs of the MBM, using readily available data on a developing country's share of global imports by value as a proxy for that share (replaced in 2011 by a share of global imports from non-adjacent partners). The proposal demonstrates that, in principle, the Rebate Mechanism could be applied to any maritime MBM which generates revenue such as a levy and an ETS. This generic version is called the RM add-on. The RM has been integrated with the International Maritime Emission Reduction Scheme (IMERS), inter alia, to illustrate how it can be operationalized. This

version is referred to as RM integrated (MEPC 61/INF.2), or IMERS (MEPC 61/5/33). Under the IMERS scheme, a market-driven levy is established on fuel bunkered. The levy would apply to all ships over a predetermined size, engaged in international maritime transport, irrespective of their flag and nationality of the shipowner. The liable entity in the scheme is a ship, uniquely identified by its IMO number. The levy can be linked to a prevailing fee on land transport emissions, or to the rolling average market carbon price, as available. It is set constant though for a quarter, at least 30 days in advance of the start of each quarter (the period may be longer than a quarter, if so agreed). In order to increase investment certainty, the levy is bounded by a predetermined price floor and ceiling established for +20 years. Fuel bunkered in a given quarter must be electronically reported and is subject to payment of the constant levy for that quarter. The levy is obtained centrally, bypassing national coffers, and aggregated providing the scheme's gross revenue. A computer-based system and simple processes are defined for reporting of fuel bunkered, payment of the levy, status check, enforcement, and certification of ships, and disbursement of revenue raised. The RM applies in the first step of the disbursement process. The entire net revenue raised is to be disbursed through existing institutions for (1) adaptation to climate change in developing countries; (2) reduction of emissions, including from deforestation and forest degradation (REDD+); (3) technology R&D, transfer, and transformation in the shipping sector. It is proposed to reserve a significant pool of adaptation funding to the most vulnerable Small Islands Developing States (SIDS) and Least Developed Countries (LDCs). Furthermore, setting of the ship size threshold higher than 400 GT is proposed for an initial period of time.

1.2 Analysis fo the proposals

None of the above proposals, except the Rebate Mechanism (RM), differentiate explicitly between developed and developing countries and are therefore opposed by many developing countries. Developing countries maintain that the UNFCCC principle of common but differentiated responsibilities and respective capabilities (CBDR) must apply to climate change regime in the IMO.

All the above proposals apart from SECT can raise revenue. Some of them consider disbursing the majority of the revenue raised for climate change action in developing countries. Discussions at the IMO and UNFCCC have shown that such an approach is not generally perceived by developing countries as fulfilling the UNFCCC principle of CBDR. It became clear that the heart of the matter is “who really pays” for the MBM.

Assuming a global application of an MBM, the cost incurred by the shipping industry will be mostly passed on to consumers in both developed and developing countries. Depending on local competition for the imported goods, portion of the cost may also be passed on to producers (exporters). Some developing countries will therefore carry a share of the burden of the MBM, unless every developing country gains more than the total cost burden to its economy. In this context, arguably, none of the above proposals so far, apart from the RM, truly incorporates the principle of CBDR, regardless of their revenue raising potential.

Consider an example where the majority of the MBM revenue raised is spent on purchasing emission credits from the Clean Development Mechanism (CDM) in developing countries, in order to offset maritime emissions growth. The GHG Fund is an example of such an approach. In this scenario, many developing countries would in fact carry a share of the MBM burden as they would receive less than their cost incurred. The reason is that an overwhelming

majority of CDM projects are concentrated in just a few countries.¹ Many developing countries, especially smaller ones, would therefore be net contributors to the generated funds, rather than being their beneficiaries. The funds would go to the larger, often more advanced developing countries. This is at odds with both the equity and the CBDR principle. It is also against the UNFCCC obligations and commitments of developed countries to provide climate financing.

Broadening the revenue disbursement to other categories, such as adaptation and forestry, is unlikely to resolve the equity issue. As recent negotiations suggest, the opposition of developing countries to raising financing from all countries is based on fundamental principles, and thus is likely to remain strong. Even though some countries or their groups may become net MBM beneficiaries, others would not. The opposition from poor countries that anticipate a significant cost burden, and no benefits, is likely to remain strong.

1.3 Complexity of excluding developing countries

In theory, it could be more efficient to exclude developing countries from participation in a MBM altogether so as to comply with the CBDR and avoid the complexity associated with compensating these countries for the cost burden that falls on them. This would require differentiating the application of an MBM based on final destination of goods. This option was proposed in the second generation of the IMERS proposal (Stochniol 2009a), and was thoroughly studied. Ships transporting goods to developed countries would be covered, while ships transporting goods to developing countries would not. Ships transporting goods to both developed and developing countries would be partially covered. Such an approach would eliminate, from the outset, any impact on developing countries.

However, the approach based on the final destination of goods although relatively simple for tankers and dry bulk carriers proved complex for ships carrying multiple goods, particularly for container ships. It would require obtaining a verifiable share of goods transported to developed countries by each ship or company worldwide. Given the tens of thousands of ships operating worldwide, collecting and validating such information would require significant administrative efforts. This complexity was recognized also by various experts and negotiators from developing countries, and the proposal was not formally tabled at the IMO.

2. SOLUTION

2.1 Rebate mechanism (RM)

In order to comply with the principles of the UNFCCC, the application of a maritime MBM has to be differentiated. Developing countries could recover the cost of the MBM through an agreed rebate mechanism, thus ensuring at the least no economic disbenefit to any developing country, and a positive net benefit to any developing country that received climate change assistance. Furthermore, most vulnerable countries should benefit the most through additional means, such as the disbursement of net financing raised.

Under the proposed rebate mechanism (RM), each developing country would be entitled to obtain an unconditional payment (rebate) equal to the attributed burden of its participation in the maritime MBM.² The amount of the rebate would be calculated from the global MBM costs using a simple country-level “attribution key”, annually. A country’s share of global imports from non-adjacent countries is the proposed “attribution key”, given that relevant data is readily available.³ This approach was found optimal to exclude data on imports between countries that share a land border, which typically relates to land transport.

Under the proposed RM, a developing country could decide to forego its rebate, or a part of it, and be internationally recognized for such action. This provides additional flexibility to reflect the different national circumstances of developing countries.⁴ Developed countries are not entitled to any rebates, and are automatically credited for the amount of financing raised through the MBM, based on the same attribution key, namely a country's share of global imports. Consequently, the net revenue raised after rebates have been issued, would come from consumers in developed countries only, complying therefore with the principles and provisions of the UNFCCC.

The proposed RM does not specify how the net revenue raised should be used. However, since the revenue is generated from an international activity, it should be used in its entirety for international purposes rather than to contribute to national budgets. The net revenue could be split between supporting developing countries in implementing climate change action and assisting the global shipping sector in accelerating reductions of its growing emissions through technological advances. The disbursement of this net revenue could be managed by the operating entity of the financial mechanism of the UNFCCC, according to relevant rules and provisions. This could be the Green Climate Fund (GCF) established in the Cancun Agreements (UNFCCC 2010). Thus, developing countries would be beneficiaries of the revenue generated by the MBM, with the more vulnerable countries benefiting the most. The shipping sector should also benefit potentially through a maritime funding window in GCF, or a new global Maritime Technology Fund, or similar, which should be established given the need to invest in clean technology development and transfer in the maritime sector.

The RM can therefore apply, in principle, to any maritime MBM which generates revenue, such as a contribution or a levy on fuel, or an emission trading scheme. The mechanism cannot apply to an MBM that does not generate revenue, such as an efficiency-based scheme.

In summary, the disbursement of the MBM revenue is proposed to comprise two steps:

1. The cost incurred by a developing country participating in the MBM is paid back (rebated) to this country, unconditionally.
2. The remaining revenue (net revenue), is disbursed through the Green Climate Fund (with a view to address the climate adaptation and mitigation needs of developing countries, and clean technology development and transfer in the maritime sector).

The ultimate method of disbursing the net revenue would be agreed by the UNFCCC and IMO Parties.

2.2 Integration conditions

In principle the proposed RM could apply to any MBM, providing it generates enough gross revenue to cover the rebate needs. As stated in the original proposal (MEPC 60/4/55), given that developing countries import approximately a third of goods worldwide by value (UNCTAD 2010), the gross revenue of an MBM that can provide rebates for developing countries must be greater than 30% of the instrument's global cost burden (assuming a uniform application; before any benefits are taken into account). Based on the 'optimal' attribution key proposed in IMO 2011, the above condition may need to be changed to 40%, or another appropriate amount. However, given that some developing countries may pursue the option of foregoing all or part of their rebates, it is still viable to use the 30% as an illustrative integration condition.⁵

As this is the only condition, any MBM based on a levy or a GHG contribution can directly use the proposed RM, as its cost burden equals the gross revenue raised.

For a MBM based on emissions trading, such as cap-and-trade, the integration depends on its design. For instance, the total economic cost of a cap-and-trade measure is the sum of (1) the cost of emission allowances distributed to the maritime sector and (2) the cost of emission allowances and credits purchased from other sectors. As the revenue in a cap-and-trade system is typically raised through emission allowance auctioning, only schemes that auction at least enough emission allowances to cover 30% of the impact of the scheme could apply the proposed rebate mechanism. For any scheme that assumes non-uniform application, for instance applying different charges based on the efficiency of ships, integration of the rebate mechanism would be more difficult. The cost burden for a given country would for such schemes depend on the efficiency of ships serving the country, and thus its rebate cannot be calculated easily.

2.3 Integration with MBM proposals

This section considers the various MBMs being considered at the IMO with a view to assessing the possibility of integrating the RM into these proposals. As introduced earlier, these include: GHG Fund, LIS, PSL, SECT, VES, ETS, and RM. Given that the IMO is in the process of developing a potential MBM, these proposals should be seen as subject to changes and improvements, not as options set in stone. The RM has been submitted to the IMO by the International Union for Conservation of Nature (IUCN) as two options: the RM add-on which could be added or integrated into certain MBM proposals that raise revenue, and the RM integrated which is the IMERS proposal (see MEPC 60/4/55, and MEPC 61/5/33).

All proposals except SECT anticipate that a MBM will generate revenue, and require a Fund to disburse it. All the following proposals GHG Fund, ETS, PSL, and LIS would raise revenue from all participating ships, in a uniform manner (see MEPC 61/INF.2 for more details). Thus RM add-on could apply to each of them, providing sufficient revenue is generated to cover the rebates.

The applicability of the RM to the MBMs being considered at the IMO is illustrated in Figure 1. The RM add-on could be easily integrated with ETS, GHG Fund, PSL, and LIS. The only proposal thus far that incorporates the RM is the IMERS scheme (RM integrated), as described in MEPC 61/5/33, and evaluated in MEPC 61/INF.2.

The RM add-on cannot apply to SECT, given that this scheme does not raise revenue at all. Applying the RM add-on to VES would be complex, as VES would only raise revenue from the non-compliant, existing ships. Only existing ships failing to meet the required standard through technical modifications would be subject to a fee applied to each tonne of fuel consumed. Thus the cost burden to countries would depend where the non-compliant, fee paying ships operate. As a result, compensation based on a simple rebate key, such as a country's share of global imports, cannot apply. A much more complex rebate key would be required.

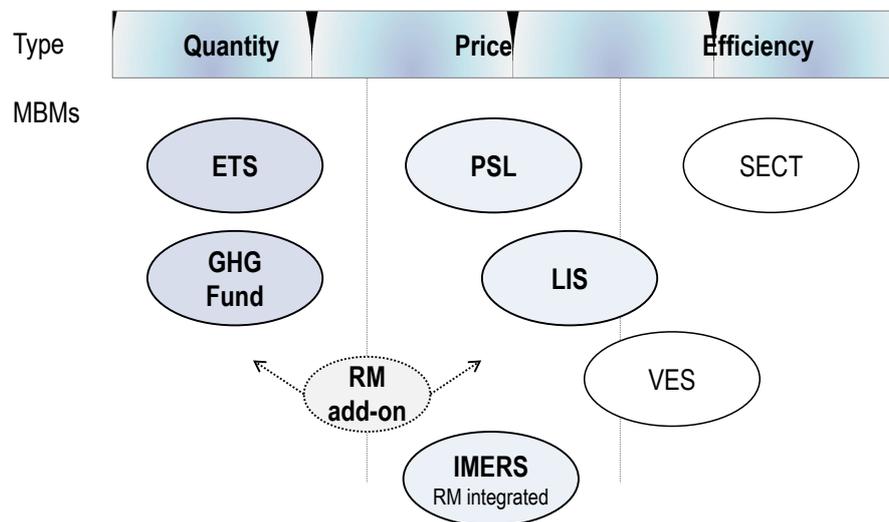


Figure 1 *Applicability of rebate mechanism to various MBM (author's analysis)*

MBM legend:

ETS	Emission Trading System
GHG Fund	International Fund for GHG emissions from ships
LIS	Leveraged Incentive Scheme
PSL	Port State Levy
RM	Rebate Mechanism; add-on, and IMERS (RM integrated)
SECT	Ship Efficiency Credit Trading
VES	Vessel Efficiency System

To further clarify and generalize the findings, MBMs are categorized in Figure 1 by the dominant characteristic or the type of MBM, reflecting their different designs. These are:

- Quantity;
- Price;
- Efficiency.

The quantity proposals require a cap or target for total quantity of GHG emissions from international maritime transport. The price proposals require a levy or a contribution (on ship fuel or GHG emissions). The efficiency proposals require efficiency targets for existing ships.

Figure 1 illustrates only one possible categorization, albeit the dominant ones, as certain proposals employ features of a different type, or types. For instance, the GHG Fund proposal is categorized as a quantity measure, but some may see it as a price measure, given that it is based on GHG contribution per tonne of fuel bunkered. However, in this paper it is categorized as a quantity measure as it is the cap on emissions that is established first, that subsequently drives the level of GHG contribution. LIS partially belongs to the efficiency type, as it requires a ship energy efficiency score for a refund to be granted to each of the most efficient ships. VES partially belongs to the price category, as the level of penalty on fuel for ships that do not comply with the efficiency standard needs to be set, and penalties need to be collected. The positioning of these proposals between the different types aims to illustrate their hybrid features.

Thus, Figure 1 shows that generally the RM can apply to quantity and price measures, but not to measures based on efficiency. This relates to the need to (1) generate revenue and (2) the

scheme being applied in a uniform manner across the fleet, irrespective of ship efficiency, age, and so on.

3. SHIP THRESHOLD APPROACH

One potential option to partially eliminate impact on the most vulnerable developing countries, including SIDS, is to limit the application scope of MBM. The threshold for applying a MBM could be set at a ship size level that is higher than 400 gross tonnage (GT), for instance at 4,000 GT, for an initial period of time. This would practically exclude the majority of all ships serving the remote SIDS, as their ports typically can receive only smaller ships (Faber and Rensma 2008). However, this would not eliminate all impacts as some goods may be first shipped on large ships, subject to the MBM, and only carried on small ships, not subject to the MBM, on the final leg to the small port. If this approach was combined with the rebate mechanism as described above, questions could arise whether a developing country should be entitled to the rebate, even if the ships serving that country were not subject to the MBM.

Increasing the application threshold to 4,000 GT (as an example) will accelerate though the global implementation, given that it will significantly reduce the number of ships subject to the instrument without necessarily having a major effect on emissions – it is estimated that the total emission coverage would only be reduced by 9%. Therefore, the initial coverage of emissions from international shipping would remain relatively high at 91%, when compared with the emissions coverage for ships of 400 GT and above. Yet the number of ships subject to MBM would be nearly halved in this initial period, given that the total number of ships over 400 GT and over 4,000 GT in 2010 was approximately 43,700 and 24,300, respectively (for details see MEPC 61/INF.2, Table 7-1).

This approach can apply to any of the schemes being considered under the auspices of the IMO.

CONCLUSIONS

The revenue raising proposals for a maritime MBM can compensate the impact of the MBM on the most vulnerable through a Rebate Mechanism (RM). Furthermore, the most vulnerable should benefit from such schemes through climate financing raised. Schemes that do not raise revenue do not offer such flexibility. The RM can apply to quantity based schemes (GHG Fund, and ETS), and price based schemes (PSL, LIS, and IMERS) being considered under the auspices of the International Maritime Organization (IMO). The RM is has so far been integrated with IMERS only.

Each of the proposed MBMs being considered, could potentially mitigate or reduce the impact on countries served by small ships by setting a ship size threshold above 400 gross tonnage (GT), for instance at 4,000 GT. Many of such countries are the most vulnerable, but not all the most vulnerable countries are served by small ships.

The rebate mechanism and the size threshold can be applied at the same time, but only to the revenue raising MBMs.

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