

UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

Note by the International Maritime Organization

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Agenda item 3.4 Finance

CLIMATE FINANCE AND DEVELOPMENT OF MARKET-BASED MEASURES FOR INTERNATIONAL SHIPPING UNDER IMO

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1 Greenhouse gases from international shipping are modest but steadily growing apace with increased shipping activity resulting from expanding globalization and world trade. IMO, in July 2011, adopted mandatory technical and operational energy efficiency measures, and is currently working on Market-Based Measures.

Adoption of mandatory technical and operational measures in July 2011

2 Mandatory measures to reduce greenhouse gas (GHG) emissions from international shipping were adopted by IMO in July 2011, representing the first ever mandatory global GHG reduction regime for an international industry sector. The adoption of mandatory reduction measures for all ships from 2013 and onwards will lead to significant emission reductions as a result of reductions in fuel consumption, and also a significant consequent cost saving for the shipping industry. By 2020, up to 200 million tonnes of annual CO₂ reductions are estimated from the introduction of the Energy Efficiency Design Index (EEDI) for new ships and the Ship Energy Efficiency Management Plan (SEEMP) for all ships in operation, a figure that, by 2030, will increase to 420 million tonnes in accordance with a study commissioned by the IMO Secretariat.

3 Aside from the new MARPOL amendments, it has also been recognised by governments represented in IMO that technical and operational measures would not be, in the longer term, sufficient to meet the overall reduction objectives indicated by scientific research – particularly in view of the growth projections for world trade and, as a consequence, of shipping. IMO has, therefore, concluded that a Market-Based Measure (MBM) is also needed, as part of a comprehensive package of measures for the effective regulation of GHG emissions from international shipping.

Market-Based Measures

Purpose of Market-Based Measures

4 An MBM would place a price on GHG emissions from international maritime transport. An MBM could thereby serve two main purposes: being an incentive for the industry to invest in more fuel efficient ships and to operate them more energy efficiently, and

off-setting (in other sectors) of growing ship emissions. In addition, MBMs could generate considerable funds that could be used for mitigation and adaptation actions in developing countries.

5 IMO's Marine Environment Protection Committee (MEPC) agreed with the findings of the Second IMO GHG Study 2009 that technical and operational measures would not be sufficient to satisfactorily reduce the amount of GHG emissions from international shipping needed to meet the overall objectives indicated by science (IPCC FAR), and in view of the growth projections of world trade. In addition to identifying a considerable reduction potential, the Second IMO GHG Study 2009 concluded that MBMs were cost effective policy instruments with high environmental effectiveness. It was agreed by majority at MEPC 59 in July 2009 that an MBM is needed as part of a comprehensive package of control measure for effective regulation of GHG emissions from international shipping. A few delegations recommended that IMO should concentrate its work on elaboration of technical and operational reduction measures only. See also paragraphs 12 and 13 below on an IMO intersessional meeting held in March 2011 where the need and purpose of an MBM for international shipping under IMO was further considered.

Summary assessment of policy options (Second IMO GHG Study 2009)

| Evaluation criteria | Technical policy options | Operational policy options | | | Market-based instruments | |
|---|---|----------------------------|----------------|----------------------|--------------------------|------------------------|
| | Mandatory EEDI limit for new ships | Mandatory SEMP | Voluntary SEMP | Mandatory EEOI limit | METS | International GHG Fund |
| Environmental effectiveness | Long-term: moderate | Low | Low | High | Very high | Very high |
| Cost-effectiveness | Moderate | Unclear | Unclear | Good | Very good | Very good |
| Incentive to technological change | High, but limited to technical measures | Low | Low | High | High | High |
| Practical feasibility of implementation | High | High | High | Low | Moderate | Moderate |

Proposed Market-Based Measures

6 In recent sessions, the Committee has been considering MBMs proposals from governments and observer organizations. The MBMs proposals currently under review range from proposals for contribution schemes for all CO₂ emissions from international shipping (to be collected by fuel oil suppliers and transferred to a global fund); or only emissions from ships not meeting the EEDI requirement; via emission trading systems, to schemes based on the ship's actual efficiency, both by design and operation. Among the measures are also proposals for rebate mechanisms and other ways to accommodate the difference in socioeconomic capability between developing and developed States, as well as other suggestions on how the special needs and circumstances of developing countries can be taken account of.

7 Some of the proposed MBM schemes would reward efficient ships and ship operators by recycling parts of the financial contribution to the most efficient ones based on benchmarking. Other schemes would drive investments in more energy efficient technologies and improvements in operations by setting compulsory efficiency standards for all vessels (new and existing) and the trading of efficiency credits. Several of the proposed mechanisms – the contributions schemes (levy) inherently and the trading schemes through auctioning – would generate funds, the greater part of which would be used for climate change purposes in developing countries. For a further description of the proposed measures examined by IMO's MBM Expert Group, refer to a summary of the proposals in the Annex.

8 At MEPC 59, the Committee noted that a large number of delegations had spoken in favor of an international GHG fund.

Expert Group – feasibility study and impact assessment

9 In line with the MEPC 59 work plan, MEPC 60 called for an Expert Group (MBM-EG) to undertake a feasibility study and impact assessment of the proposed measures. The MBM-EG was made up of experts nominated by Member Governments and organizations, but each expert served in their personal capacity. The MBM-EG was tasked to evaluate the various proposals with the aim of assessing the extent to which each proposed measure could assist in reducing GHG emissions from international shipping.

10 The results of the MBM-EG were presented in a report to MEPC 61, in which the EG noted that the evaluations of the measures had been complicated by the different levels of maturity of the proposals and that all proposals required further elaboration and development to enable a full assessment of all possible impacts in a comparable analysis. Furthermore, the MBM-EG concluded that all proposals addressed reduction of GHG emissions from shipping, although the proposed means of doing so differed with some proposals focusing on in-sector reductions and others, utilizing also reductions in other sectors. Some of the proposals went beyond mitigation and proposed a mechanism that would provide substantial financial contribution to address the adverse effects of climate change. Moreover, the EG found that all proposals could be implemented, notwithstanding the challenges associated with the introduction of new measures and possible negative impacts such as increases in freight costs. Some countries would be negatively affected more than others by these impacts. Some proposals tried to mitigate such negative impacts. The full report is available at:

<http://www.imo.org/OurWork/Environment/PollutionPrevention/AirPollution/Documents/INF-2.pdf>

Working Group on GHG Emissions from Ships and Next Steps

11 The MBM-EG Report was intended to enable the Committee to indicate, which MBM should be further evaluated. However, despite the comprehensive and balanced MBM-EG Report no majority view prevailed. The Committee therefore agreed that an intersessional meeting of IMO's Working Group on GHG from Ships should be held in March 2011.

12 The intersessional meeting made steady progress in considering the development of suitable MBMs. It held an extensive exchange of views on issues related to, inter alia, the desirability of MBMs providing: certainty in emission reductions or carbon price; revenues for mitigation, adaptation and capacity building activities in developing countries; incentives for technological and operational improvements in shipping; and offsetting opportunities. Based on such policy considerations, the Working Group then formulated advice to MEPC 62, in accordance with its Terms of Reference, related to: the grouping of the MBMs; the strengths and weaknesses of the groups; their relation to relevant international conventions; and the aforementioned possible impacts.

13 Due to time constraints, MEPC 62, in July 2011, was unable to address the issue of MBMs and the advice so formulated by the intersessional meeting will now assist MEPC 63 to determine, in February/March 2012, which MBMs to bring forward as a possible mandatory IMO instrument.

14 It is expected that, apart from further debates on the need and purpose of an MBM for international shipping as well as further development of the proposed schemes including draft legal text, a main issue will be further impact assessments as recommended by the Expert Group and the intersessional Working Group. The impact assessment will analyze in detail the possible impacts on import and export prices, and thereby on consumers and industries in developing countries, as well as ways to mitigate such negative impacts.

Potential to generate funds for climate financing

15 One of the milestones reached at the Cancún Conference relates to long-term financing, with developed countries having committed to the goal of jointly mobilizing US\$100 billion per year by 2020 to address the needs of developing countries. A significant share of the new multilateral funding is to flow through the Green Climate Fund. Whilst the funding sources are not yet identified, it has been recognized that these funds will have to come from a wide variety of sources, including alternative sources, and note has been taken of the report of the High-level Advisory Group on Climate Change Financing, which considered the option of generating revenue through, *inter alia*, the application of MBMs to international maritime transport.

16 As is apparent from the table below, which was prepared by the MBM-EG and included in its report to MEPC, the majority of the proposed MBMs currently under review have the potential to generate proceeds. If so decided by IMO Members, these could be used to co-finance mitigation and adaptation actions and could, amongst others, be one potential source for the Green Climate Fund to address the needs for climate change actions in developing countries.

Potential of MBM Proposal to generate funds

| | GHG Fund | Leveraged Incentive Scheme (LIS) | Port State Levy (PSL) | Ship Efficiency and Credit Trading (SECT) | Vessels Efficiency System (VES) | Emission Trading Scheme (ETS) (Norway, France) | Emission Trading Scheme (ETS) (UK) | Bahamas | Rebate Mechanism (RM) |
|--------------------------------|----------|----------------------------------|-----------------------|---|---------------------------------|--|------------------------------------|---------|-----------------------|
| Remaining proceeds (\$billion) | \$4-14 | \$10-87 | \$40-118 | \$0 | \$5-18 | \$28-87 | \$0 ⁵ | 0 | \$17-23 ⁶ |

17 At MEPC 59 in July 2009, the Committee had already noted that a general preference prevailed within the Committee that a greater part of the revenues generated by an MBM under the auspices of IMO should be used for climate change purposes in developing countries through existing or new funding mechanisms under the UNFCCC or other international organization.

18 The IMO Secretariat endorses the view (of Mr. Ban Ki-moon) that making funds available to developing countries for mitigation and adaptation purposes is an urgent matter to support actions on climate change. Mobilizing funds for such purposes may also facilitate enhanced progress in the UNFCCC negotiations.

19 The IMO Secretariat notes the finding of the High-Level Advisory Group on Climate Change Financing, which identified carbon pricing of international transport as an important potential source for climate financing (and mitigation) that could contribute substantially towards mobilizing US\$100 billion per year by 2020.

20 However, in any attempt to raise climate financing, the shipping industry should not become liable to “double taxation” (once through the UNFCCC efforts and once through IMO efforts) and that international shipping should only be asked to contribute in proportion to its degree of responsibility, which, according to IMO’s Second Greenhouse Gas Study of 2009, represents 2.7% of global anthropogenic GHG emissions.

ANNEX

OVERVIEW OF THE MARKET BASED MEASURES PROPOSALS

IMO has been considering proposals from governments and observer organizations for Market-Based Measures (MBM). The MBM proposals continue to be further developed by their proponents and some proposals have been merged with others. This annex provides a brief overview of the ten MBM proposals analyzed by the Expert Group on Feasibility Study and Impact Assessment of possible Market-Based Measures (MBM-EG).

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) to improve the energy efficiency of ships based on the International GHG Fund 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 labeled as "good performance ships".

3 Achieving reduction in greenhouse gas emissions from ships through Port State arrangements utilizing the ship traffic, energy and environment model, STEEM (PSL) proposal by Jamaica (MEPC 60/4/40) – an IMO global agreement, Member States participate in 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 United States proposal to reduce greenhouse gas emissions from international shipping, the Ship Efficiency and Credit Trading (SECT) (MEPC 60/4/12) – 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) – 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.

7 Global Emissions Trading System (ETS) for international shipping proposal by the United Kingdom (MEPC 60/4/26) – is very similar in most respects to the global ETS proposal by Norway. 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.

8 Further elements for the development of an Emissions Trading System (ETS) for International Shipping proposal by France (MEPC 60/4/41) – 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.

9 Market-Based Instruments: a penalty on trade and development proposal by the Bahamas (MEPC 60/4/10) – does not set explicit standards or reductions to be achieved in the shipping sector or out-of-sector for GHG reductions. The proposal clearly sets forth that the imposition of any costs should be proportionate to the contribution by international shipping to global CO₂ emissions. Bahamas' Focal Point has indicated that it is assuming that mandatory technical and operational measures would be implemented such as the EEDI. The proposal would apply to all ships engaged in both domestic and international maritime transport as fuel prices impact all market segments and trades.

10 **A Rebate Mechanism (RM) for a market-based instrument for international shipping proposal by IUCN (MEPC 60/4/55)** – focuses on a Rebate Mechanism to compensate developing countries for the financial impact of a 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 (or another metric such as value-distance if data becomes available). The proposal indicates that, in principle, the Rebate Mechanism could be applied to any maritime MBM which generates revenue such as a levy or an ETS. In order to evaluate the proposal, the Rebate Mechanism has been assessed integrated with a MBM (see MEPC 60/4/55).
