

**Note by the International Maritime Organization to the thirty-fourth session of the
Subsidiary Body for Scientific and Technical Advice (SBSTA 34)**

**Agenda item 6(b) - Emissions from fuel used for international aviation and
maritime transport**

Progress made on technical, operational and Market-Based Measures within the IMO

20 April 2011

SUMMARY

The Marine Environment Protection Committee (MEPC) of the International Maritime Organization (IMO) has put down a significant amount of work in developing possible strategies and measures to enhance the energy efficiency, and thereby reducing the associated greenhouse gas (GHG) emissions from international shipping. The work is divided in three distinct elements: technical measures which will mainly be relevant for new ships; operational measures which will apply to all ships in operation, newly built or approaching the end of their commercial life; and lastly, the Market-Based Measures (MBMs) which would serve as an incentive by setting a price on the sector's carbon emissions and also may provide for offsetting and climate change financing.

MEPC 61 (September 2010) considered means by which the technical and operational measures could be introduced in the Organization's regulatory regime to make mandatory the Energy Efficiency Design Index (EEDI) and the Ship Energy Efficiency Management Plan (SEEMP), both of which have been disseminated for voluntary use since July 2009. Subsequently to the meeting, nine Member Governments formally requested the Secretary-General to circulate draft amendments to MARPOL Annex VI, which will be considered by MEPC 62 (July 2011) for possible adoption.

MEPC 61 also held an extensive debate on how to progress the development of suitable MBMs for international shipping, following the submission of a comprehensive report by an Expert Group. The Expert Group had carried out a feasibility study and impact assessment of possible MBMs submitted by governments and observer organizations. The work of the Group was intended to enable the MEPC to indicate, preferably at MEPC 61, which MBM to evaluate further. As no majority view prevailed, MEPC 61 agreed that an intersessional meeting of its Working Group on Greenhouse Gas Emissions from Ships should be held in March 2011. The Working Group made steady progress in considering the development of suitable MBMs and formulated advice to MEPC 62. The advice will now assist MEPC 62 to determine in July 2011, which MBMs to bring forward as a possible mandatory IMO instrument, so that MEPC can report progress to the twenty-seventh session of the IMO Assembly.

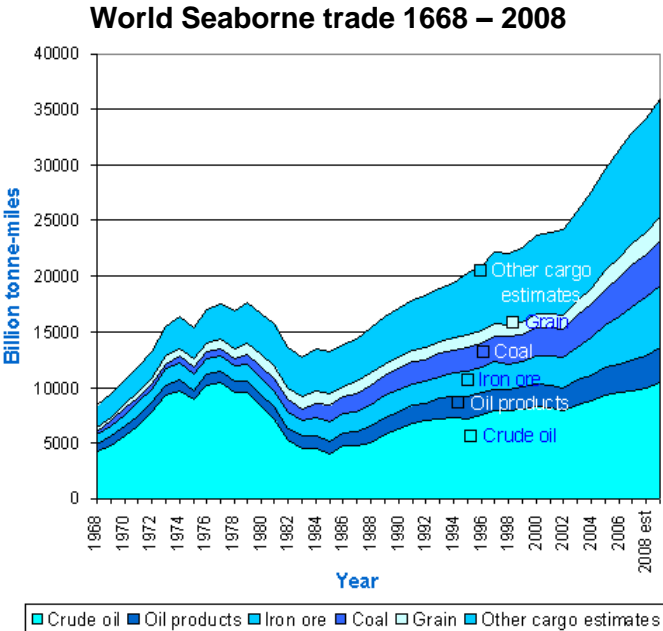
Introduction

1 Due to its close connection to global commerce, international shipping plays a vital role in the facilitation of world trade as the most cost-effective and energy-efficient mode of mass transport, making a significant contribution to global prosperity in both developing and developed countries.

2 As shipping is a global industry and ships are competing in a single global market, it must be regulated at the global level for any control regime to be effective and to maintain a level playing field for all ships irrespective of flag (nationality) or ownership. In other words, the global character of shipping requires global regulation that applies universally to all ships.

3 The International Maritime Organization (IMO) was established by governments as a specialized agency under the United Nations to provide machinery for intergovernmental cooperation in the field of regulation of ships engaged in international trade. IMO is responsible for the global regulation of all facets pertaining to international shipping and has a key role in ensuring that lives at sea are not put at risk and that the environment is not polluted by ships' operations – as summed up in IMO's mission statement: **Safe, Secure and Efficient Shipping on Clean Oceans.**

4 IMO's role is primarily to develop and enact international legislation, which normally applies to the ship itself, while the Contracting Governments assume the responsibility for implementation and enforcement. When an IMO instrument has entered into force, countries that have ratified it can apply it, not only to ships of their own flag, but also to all other ships as a condition of entering their ports or internal waters, regardless of flag. This is an important principle, commonly referred to as the principle of "no more favourable treatment". Flag States are responsible for implementing and enforcing legislation on ships in their registries.



Source: Fearnley's Review 2009

Work on control of greenhouse gas emissions from international shipping

5 International maritime transport is the most energy efficient mode of mass transport and only a modest contributor to global CO₂ emissions (2.7% in 2007) while carrying 90% of world trade by tonne-mile. Nevertheless, a global approach for further improvements in energy efficiency and emission reduction is needed as sea transport is predicted to continue growing significantly in line with world trade. IMO is regarded as the sole competent international organization with a global mandate to regulate the reduction or limitation of greenhouse gas (GHG) emissions from shipping.

6 Work on the prevention of air pollution and control of GHG emissions from ships started within IMO in the late 1980s. The first regulatory steps were out phasing of ozone depleting substances both as refrigerant gases and in fire-fighting systems and later, prevention of air pollution in the form of oil cargo vapours and exhaust gases were targeted by, *inter alia*, adopting limits for nitrogen oxides and sulphur oxides in ship exhaust gases. In recent years the focus has been on improvement in energy efficiency and on control of GHG emissions from ships engaged in international trade.

7 IMO's work on GHG emissions was triggered by the 1997 MARPOL Conference's resolution 8 on "CO₂ emissions from ships" requiring IMO to *inter alia* undertake a study on GHG emissions from ships and to consider feasible GHG emission reduction strategies. The first IMO Study on GHG emissions from ships was presented to MEPC in June 2000. In July 2009, at MEPC 59, the second IMO GHG Study was presented.

8 IMO's GHG work has been further guided by Assembly Resolution A.963(23) on IMO Policies and Practices Related to the Reduction of Greenhouse Gas Emissions from Ships, which was adopted in December 2003. The resolution urges MEPC to identify and develop the mechanisms needed to limit or reduce GHG emissions from international shipping. As requested by the resolution, MEPC in its fifty-fifth session (MEPC 55), approved in October 2006, a work plan with timetable to direct the identification and development of the needed emission reduction mechanisms. The work plan culminated at MEPC 59 in July 2009 and called for the consideration of technical, operational and MBMs for the limitation or reduction of GHG emissions from international shipping as of MEPC 57. A second work plan for the further consideration of MBMs was agreed upon at MEPC 59. This work plan will culminate in July 2011 at MEPC 62.

Technical and operational measures

9 A significant amount of work on technical and operational measures has been carried out in accordance with the first work plan and at MEPC 59 the Committee approved to circulate Interim Guidelines on the Method of Calculation of the Energy Efficiency Design Index for New Ships (EEDI), the Interim Guidelines for Voluntary Verification of Energy Efficiency Design Index, the Guidance for the Development of a Ship Energy Efficiency Management Plan (SEEMP) and the Guidelines for Voluntary Use of the Energy Efficiency Operation Indicator (EEOI). These were initially intended for trial purposes on a voluntary basis.

10 The most important technical measure is the EEDI that will require a minimum energy efficiency level per capacity mile (e.g. tonne mile) for different ship type and size segments. With the level being tightened incrementally every five years, the EEDI will stimulate continued technical development of all the components influencing the fuel efficiency of a ship.

11 On the operational side, the SEEMP has been developed to assist the international shipping industry in achieving cost-effective efficiency improvements in their operations using the EEOI as a monitoring tool and benchmark.

12 Having considered means by which technical and operational measures could be introduced in the Organization's regulatory regime, MEPC 61 noted the desire of some States party to MARPOL Annex VI – *Regulations for the prevention of air pollution from ships*, to request the Secretary-General to circulate proposed amendments to that Annex, to make mandatory, for new ships, EEDI and the SEEMP.

13 Subsequently to MEPC 61, nine Member Governments, all of which are parties to MARPOL Annex VI, representing all regions of the World and both developing and developed countries, formally requested the Secretary General to circulate the draft amendments to MARPOL Annex VI. The draft amendments will be considered by the next MEPC session, in July 2011, with a view to adoption under MARPOL Annex VI. Some States do not support the circulation of the proposed amendments.

14 For a detailed description of the technical and operational energy efficiency measures for ships agreed by MEPC 59, the EEDI, the SEEMP and the EEOI, as well as their purpose, effect and status, please refer to IMO's website (www.imo.org) or refer to a detailed description set out in annex 1 to IMO's submission to SBSTA 33 which can be found in document FCCC/SBSTA/2010/MISC.14.

Market-Based Measures

15 Development of the technical and operational measures is a very important step in ensuring that the global shipping industry has the necessary mechanisms to reduce its GHG emissions. However, the MEPC has at several sessions, recognized that these measures would not be sufficient to satisfactorily reduce the amount of GHG emissions from international shipping in view of the growth projections of world trade. In July 2009, MEPC 59 agreed by overwhelming majority that an MBM is needed as part of a comprehensive package of measures for the regulation of GHG emissions from international shipping.

16 An MBM would serve two main purposes:

- .1 providing an economic incentive for the maritime industry to invest in more fuel-efficient ships and technologies and to operate ships in a more energy-efficient manner (in-sector reductions); and
- .2 off-setting in other sectors of growing ship emissions (out-of-sector reduction).

17 In recent sessions, MEPC has been considering a number of MBM proposals from governments and observer organizations. The MBM 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 actual ship's efficiency both by design and operation. Among the measures are also proposals for rebate mechanisms and other ways to accommodate the difference in the socioeconomic capability between developing and developed states, as well as other suggestions on how the special needs and circumstances of developing countries can be accommodated. Some of the proposed 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, refer to a summary of the proposals set out as in annex 2 to document FCCC/SBSTA/2010/MISC.14.

18 MEPC 59 noted that there was a general preference for the greater part of any funds generated by a market-based instrument under the auspices of IMO, to be used for climate change purposes in developing countries through existing or new funding mechanisms under the UNFCCC or other international organizations (such as IMO or organizations established under its auspices).

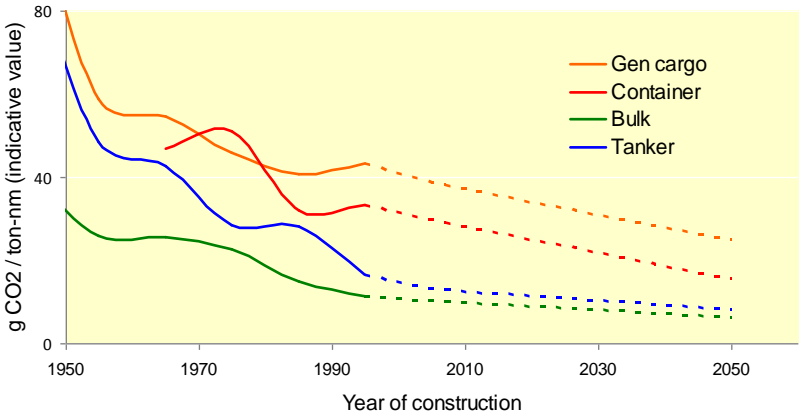
19 In line with the MEPC 59 work plan, MEPC 60 called for an Expert Group (EG) to undertake a feasibility study and impact assessment of the proposed measures. The EG was tasked to evaluate the various proposals with the aim to assess the extent to which each proposed measure could assist in reducing GHG emissions from international shipping, giving priority to the maritime sectors of developing countries, least developed countries (LDCs) and Small Island Developing States (SIDS).

20 The results of the EG were presented in a report to MEPC 61 to enable the Committee to indicate, which MBM to evaluate further. The Executive Summary of the EG Report is set out as annex 2 to document FCCC/SBSTA/2010/MISC.14. As no majority view prevailed at MEPC 61, the Committee agreed that an intersessional meeting of IMO's Working Group on Greenhouse Gas Emissions from Ships should be held in March 2011. The Working Group made steady progress in considering the development of suitable MBMs and formulated advice to MEPC 62 in July 2011. The advice will now assist MEPC 62 to determine which MBMs to bring forward as a possible mandatory IMO instrument, so that the MEPC can report progress to the twenty-seventh session of the Assembly.

Efficiency improvements and reduction target for international shipping

21 Parallel to the development of technical, operational and MBMs, MEPC has considered the issue of establishing a reduction target for international shipping. The aim is to conclude the debate on reduction target at MEPC 62. MEPC is considering whether the international maritime sector should be subject to an explicit emission ceiling (cap) or a reduction target comprising the entire world fleet of merchant vessels. The paramount questions are: by which international organization (e.g. IMO or UNFCCC) should such a cap or reduction target be established and on what criteria, the need for reductions or technical capability. Other questions arising in this context are: by which methodology should the cap/target be set and maintained, the relation to other transport modes (e.g. civil international aviation and road transport), how should they be regulated internationally, and how much of future *carbon space* an industry that moves 90% of world trade and underpins the global economy and sustainable development in the entire world should be allocated.

Baseline efficiency improvement in historic perspective



Baseline improvements in efficiency and indicated historic improvements

Source: Second IMO GHG Study 2009

IMO's Integrated Technical Cooperation Programme

22 As previously indicated, IMO adopts international shipping regulations but it is the responsibility of Member Governments to implement those regulations in the world fleet. IMO recognises that not all of its Members have the same capacity to fulfil their obligations as parties to the various conventions, often because they lack resources and expertise. IMO's Integrated Technical Co-operation Programme aims to redress this resource imbalance by assisting governments that lack the resources needed to improve their ability to comply with international rules and standards relating to maritime safety and the prevention and control of marine pollution from ships, giving priority to technical assistance programmes that focus on human resources development and institutional capacity-building.

The way ahead post-COP 17

23 The UNFCCC principle of common but differentiated responsibilities (CBDR) is one agreed for the sharing of burdens between States and to place obligations for reductions in emissions principally on countries with historic responsibility for the current and projected climate effects. However, with most ships registered in developing country registers, historic emission responsibilities have another meaning for the global shipping industry compared with land-based industrial sources of GHG emissions.

24 There is no precedent in any of the fifty-two IMO international treaty instruments currently in existence where measures are applied selectively to ships according to their flag. On the other hand, there are several international environmental treaties which have a differentiated approach, such as the Montreal Protocol (on substances that deplete the ozone layer) and the Basel Convention (on transboundary movement of waste) yet, when IMO successfully dealt with the same issues at the request of the international community, the principle of a differentiated approach (according to flag) was not taken on board.

25 Recognizing the fundamental importance of the principle of CBDR under the UNFCCC regime - consequent with its own philosophy of assisting developing countries - and at the same time conscious of its international obligation, enshrined in its constitutive Convention, to regulate ships without discrimination on account of the flag they fly, IMO and its Member Governments are working hard to address the special needs of developing countries and to satisfy the CBDR principle. Creative and innovative means are under consideration, which would see substantial funds, obtained from carbon offsetting or trading measures (market-based mechanisms) applied by international shipping, being dedicated to climate change mitigation and adaptation actions in developing countries and may also include other ways to secure that a control regime for international shipping does not have unwanted implications for developing countries.

Conclusions

26 Being fully aware of the ultimate objective of the UNFCCC, which is to achieve stabilization of GHG concentrations at a level that prevents dangerous interference in the global climate system, IMO is seeking a solution where a GHG control regime for international shipping, once enacted, will deliver real emission reductions and, at the same time, will contribute financially towards the wider efforts to combat climate change in developing countries. The interests of mankind and the global climate would be best served if the Parties to the UNFCCC, decided to continue entrusting IMO as the relevant United Nations Specialized Agency, with the development and enacting of the global regulatory regime needed to limit or reduce GHG emissions from international shipping, based on the above premises.
