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Agenda item 11(d)
Emissions from fuel used for international aviation and maritime transport

IMO’S WORK TO ADDRESS GHG EMISSIONS FROM INTERNATIONAL SHIPPING IN 2012

SUMMARY

IMO’s Marine Environment Protection Committee (MEPC) has been considering as an important part of its agenda actions to address greenhouse gas (GHG) emission from ships engaged in international trade. MEPC 63 in February/March 2012 and MEPC 64 in October 2012 each had the participation of more than 900 delegates from over 90 Member States, several United Nations bodies, intergovernmental organizations and over 40 non-governmental organizations with consultative status with IMO.

MEPC 63 adopted important guidelines aimed at supporting implementation of the mandatory measures to increase energy efficiency and reduce GHG emissions from international shipping, paving the way for the regulations on EEDI and SEEMP to be smoothly implemented by Administrations and industry upon their entry into force on 1 January 2013.

MEPC 63 also continued its discussion on Market-Based Measures for GHG emissions from international shipping and MEPC 64, noting that uncertainty exists in the estimates and projections of emissions from international shipping, agreed on the need for an update study of the GHG emissions estimate to base its future decisions.

IMO is now focusing its efforts on technical co-operation and capacity building to ensure smooth and effective implementation and enforcement of the new regulations worldwide and has been undertaking a series of workshops in all regions of the world on implementation of the measures to address GHG emissions from international shipping.

Introduction

1 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 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.
The global character of shipping has resulted in the adoption of global regulation that applies universally to all ships irrespective of the country of ship registration, in line with the basic principle of non-discrimination set out in IMO’s constitutive Convention. The global nature of shipping is demonstrated with the following table which identifies the fleet statistics for annex 1 and non-annex 1 countries. In accordance with IHS Fairplay’s database\(^1\), as per 1 July 2012, the distribution by flag of the world merchant fleet of ships above 100GT was as follows:

<table>
<thead>
<tr>
<th>Flag Type</th>
<th>Number of ships</th>
<th>GT</th>
<th>DW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annex I flag States</td>
<td>16,692 (30.5%)</td>
<td>258,851,019</td>
<td>354,798,310</td>
</tr>
<tr>
<td>Non-Annex I flag States</td>
<td>38,112 (69.5%)</td>
<td>757,789,972</td>
<td>1,169,762,562</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>54,804</strong></td>
<td><strong>1,016,640,991</strong></td>
<td><strong>1,524,560,872</strong></td>
</tr>
</tbody>
</table>

**Work on control of GHG emissions from international shipping**

Measures to improve energy efficiency of international shipping were adopted by Parties to Annex VI of the Convention on the Prevention of Pollution from Ships (MARPOL) at MEPC 62 in July 2011. The *Regulations for energy efficiency of ships*, apply to internationally trading ships of 400 gross tonnage and above, and make mandatory the Energy Efficiency Design Index (EEDI) for new ships, and the Ship Energy Efficiency Management Plan (SEEMP) for all ships. The measures will enter into force on 1 January 2013. For comprehensive information on the breakthrough adoption of mandatory technical and operational measures, please refer to IMO’s submission to SBSTA 35 (FCCC/SBSTA/2011/MISC.9), as well as IMO’s website: www.imo.org.

These mandatory measures address ship types responsible for 70% of GHG emissions from international shipping. MEPC 63 also agreed an updated work plan for the development of further guidelines and the development of energy efficiency frameworks for those ships not covered by the current EEDI regulations.

The EEDI is a non-prescriptive, performance-based mechanism that leaves the choice of technologies to use in a specific ship design to the industry. So long as the required energy-efficiency level is attained, ship designers and builders are free to use the most cost-efficient solutions for the ship to comply with the regulations.

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\(^1\) Calculating conditions:

- As a general rules, non-propelled ships, ships of less than 100 gross tonnage, pleasure craft, naval auxiliaries, the US Reserve Fleet, and ships restricted to harbour service or river/canal service are not included in the IHSF’s world fleet statistics.

- Merchant fleets – cargo carrying ships, in the world fleet statistics published by IHSF were used in the above calculation. Cargo carrying ships include gas carriers, oil and chemical tankers, bulk carriers, general cargo ships, container ships, refrigerated cargo carriers, ro-ro cargo ships, and passenger ships.

- Merchant fleets – ships of miscellaneous activities, in the world fleet statistics published by IHSF were excluded. Ships of miscellaneous activities include fishing vessels, offshore supply vessels, research vessels, towing/pushing vessels, dredging vessels, and other miscellaneous purpose ships.
All ships of 400 gross tonnes and above engaged in international trade will be required to implement and maintain a SEEMP which establishes a mechanism for operators to improve the energy efficiency of ships. This should be achieved by monitoring the energy efficiency performance of a ship’s transportation work and at regular intervals considering new technologies and practices to improve energy efficiency.

Four important guidelines intended to assist in the implementation of the mandatory regulations on Energy Efficiency for Ships in MARPOL Annex VI have been adopted as follows:

1. Resolution MEPC.212(63) – 2012 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships;
2. Resolution MEPC.213(63) – 2012 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP);
3. Resolution MEPC.214(63) – 2012 Guidelines on survey and certification of the Energy Efficiency Design Index (EEDI); and

MEPC 64 approved amendments to these important guidelines that support implementation of the mandatory measures to increase energy efficiency and reduce emissions of greenhouse gases (GHGs) from international shipping, paving the way for the regulations on EEDI and SEEMP to be smoothly implemented by Administrations and industry upon entry into force on 1 January 2013.

Technical co-operation and transfer of technology

Regulation 23 of chapter 4 of MARPOL Annex VI on Promotion of technical co-operation and transfer of technology relating to the improvement of energy efficiency of ships requires Administrations, in co-operation with the Organization and other international bodies, to promote and provide, as appropriate, support directly or through IMO to Member States, especially developing States that request technical assistance. It also requires the Administration of a Party to MARPOL Annex VI to co-operate actively with other Parties, subject to its national laws, regulations and policies, to promote the development and transfer of technology and exchange of information to States which request technical assistance, particularly developing States.

Linked to the implementation of energy efficiency measures is the development of a draft MEPC resolution on the Promotion of technical co-operation and transfer of technology relating to the improvement of energy efficiency of ships, which was further considered at MEPC 64. Significant progress with the draft resolution text was made and an interim agreement text, that will provide the basis for finalization of the Resolution at MEPC 65 (May 2013), was drafted.

Work on Market-Based Measures (MBMs) for international shipping

MEPC 63 continued its consideration of proposed MBMs, which would complement the technical and operational measures already adopted. The MBM proposals under review range from a contribution or levy on all CO2 emissions from international shipping or only from those ships not meeting the EEDI requirement, via emission trading systems, to schemes based on a ship’s actual efficiency, both by design (EEDI) and operation (SEEMP), some of which were further elaborated at MEPC 64. Further consideration of all MBM proposals is expected at MEPC 65.
13 MEPC 63 agreed on the need to undertake an impact assessment of the MBM proposals with focus on possible impacts on consumers and industries in developing countries, in general, and in particular, least developed countries, small islands developing States and remotely located developing countries with long trading distances, and considered in detail the methodology and criteria it should be based on. A consolidated draft Terms of Reference for the impact assessment will be considered further by MEPC 65 in May 2013.

14 MEPC 64 noted that uncertainty exists in the estimates and projections of emissions from international shipping and agreed that further work should take place to provide the Committee with reliable and up-to-date information to base its decisions. The Committee, in principle, endorsed a draft outline (document MEPC 64/5/5) for an update study of the GHG emissions estimate and agreed that an expert workshop be held in 2013 to further consider the methodology and assumptions to be used in the update.

15 An updated GHG inventory is considered necessary as the current estimate, contained in the Second IMO GHG Study (2009), does not take account of the economic downturn experienced globally since 2008. The update would be a technical exercise, building on the methodology developed under the Second IMO GHG Study 2009 and based on available data on fleet composition and size as well as on other technical ship-particular data. The inventory would include current global emissions of GHGs and relevant substances emitted from ships of 100 GT and above, engaged in international transport.

**Technical assistance related to improvement of energy efficiency in shipping**

16 The Vice-Chairman of MEPC undertook in 2009, in accordance with relevant IMO provisions, a preliminary assessment of the capacity building needs related to the then proposed new chapter 4 of MARPOL Annex VI, which made the following observations and recommendations:

   .1 it will be necessary to update national legislation and developing countries may need technical assistance to do this;
   .2 there will be a need to train seafarers in use of new technologies;
   .3 there will be a need to train flag and port State control officers to ensure effective and uniform implementation and enforcement; and
   .4 that it is necessary to instil in the industry an energy efficiency culture both onboard ships and in the land-based organizations.

17 It was suggested in the preliminary assessment that IMO’s Integrated Technical Cooperation Programme (ITCP) should allocate funding for the recommended training and that such activities should be implemented before the entry into force of the amendments. IMO allocated US $400,000 for the 2012/2013 biennium and has developed training courses and material in response to the identified needs as set out below:

   .1 **Awareness raising of energy efficiency and CO₂ emissions from international shipping:** Regional and national workshops to raise awareness of GHG emissions from ships and their link to climate change, and in particular on the mandatory technical and operational measures in Chapter 4 of MARPOL Annex VI.

   .2 **Energy Efficient Ship Design:** Regional and national workshops to enable participants to identify the elements influencing the energy efficiency of a given ship design and to use relevant tools for calculation of a ship’s EEDI value.
.3 **Energy Efficient Ship Operations:** Regional and national workshops Aimed at training personnel on full and effective implementation and optimization of operational energy efficiency measures on board ships.

.4 **Enforcement by port States related to energy efficiency and GHG emissions under MARPOL Annex VI:** Regional workshops for port State control officers to raise awareness of the MARPOL Annex VI requirements on energy efficiency and to enhance their global and uniform implementation and enforcement.

18 A comprehensive portfolio of training material has been produced under each of the abovementioned activities and a train-the-trainer course is being developed. In addition to funding through IMO's technical cooperation programme (ITCP), IMO in April 2011, signed an agreement with the Korean International Cooperation Agency (KOICA) for implementation of a project on "Building Capacities in East Asian countries to address GHG emissions from Ships". A total of 12 workshops and training courses have been implemented this year in **Bulgaria, Indonesia, Malaysia, Philippines, Thailand, Uruguay, and Vietnam** and IMO is seeking additional funding from various sources to scale up the activities.

19 In this context, and as part of the UN’s commitment to developing Sustainable Development Goals, IMO is also currently developing sustainable development goals for shipping and the maritime industries focusing on eight pillars:

.1 safety culture and environment stewardship;
.2 **energy efficiency**;
.3 new technology and innovation;
.4 maritime education and training;
.5 maritime security and anti-piracy actions;
.6 maritime traffic management;
.7 maritime infrastructure development; and
.8 adoption and implementation of global standards by IMO.

**Summary**

20 Although international maritime transport is the most energy efficient mode of mass transport and only a modest contributor to worldwide CO₂ emissions (2.7% in 2007), a global approach for further improvements in energy efficiency and emission reduction is considered necessary as sea transport is predicted to continue growing significantly in pace with expected future growth in world trade.

21 IMO has developed and adopted a framework of technical and operational measures that will serve as mandatory performance standards for increased energy efficiency in international shipping. The framework builds on IMO’s enforcement and control provisions (flag and port State controls) and includes also ship management aspects such as monitoring, verification and reporting, as well as guidelines for effective implementation.

22 In view of projections for future growth in world trade and the overall GHG emission reductions needed to meet the two degrees target, IMO and its Member Governments, are considering a possible market-based measure that could enable international shipping to contribute to this goal.

23 IMO, as the global regulator of international shipping, will continue its endeavours to reduce environmental impacts from international maritime transport, a vital industry to world trade and sustainable development, and keep relevant bodies of the UNFCCC informed of its progress.
24 It is for the reasons outlined above, that IMO participates in COP 18/CMP 8 and SBSTA 37 expecting that, as the Kyoto Conference did fifteen years ago, the global community will continue to place its confidence on the Organization for an effective contribution, from the shipping point of view, to the objectives this Conference pursues. IMO will endeavour to do its duty in pursuing the mandate of its Assembly and Marine Environment Protection Committee and within any target or timeframe the present Conference may decide.