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**SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE**

**Twenty-eighth session**

**Bonn, 4–13 June 2008**

**Item 7 (b) of the provisional agenda**

**Methodological issues under the Convention:**

**Emissions from fuel used for international aviation and maritime transport**

## **Information provided by the International Maritime Organization**

### **Submission from an intergovernmental organization**

1. The secretariat has received a submission from the International Maritime Organization containing information on emissions from fuel used for international maritime transport.
2. In accordance with the procedure for miscellaneous documents, this submission is attached and reproduced\* in the language in which it was received and without formal editing.

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\* This submission has been electronically imported in order to make it available on electronic systems, including the World Wide Web. The secretariat has made every effort to ensure the correct reproduction of the text as submitted.

SUBMISSION FROM THE INTERNATIONAL MARITIME ORGANIZATION  
UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE  
SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE

28<sup>th</sup> session - 4 to 13 June 2008  
Bonn, Germany  
Agenda Item 7.(b)

**Emissions from fuel used for international aviation and maritime transport**

**Information by the International Maritime Organization (IMO)**

**Background**

1 Work on the prevention of air pollution and control of greenhouse gases emissions from ships engaged in international trade started within IMO in the late 1980s. The first steps were outphasing of ozone depleting substances both as refrigerant gases and in fire fighting systems, later prevention of air pollution in form of cargo vapours and exhaust gas were targeted by, *inter alia*, adoption of strict limits for nitrogen oxides and sulphur oxides in ship exhaust. In recent years the focus has been control of greenhouse gas (GHG) emissions from ships. IMO as UN's specialized shipping agency plays a key role in ensuring that lives at sea are not put at risk and that the environment is not polluted by international shipping - as summed up in IMO's mission statement: **Safe, Secure and Efficient Shipping on Clean Oceans.**

2 Although to date no mandatory GHG instrument for international shipping has been adopted, IMO has given extensive consideration to the matter and is currently working in accordance with an ambitious work plan, due to culminate with adoption of a binding instrument for all ships in 2009.

3 Shipping is probably the most international of all the world's industries, carrying up to 90% of global trade by weight in a cost and energy efficient way as well as cleanly and safely around the world. The ownership and management chain surrounding ship operation can embrace many countries and ships in international trade spend their economic life moving between different jurisdictions, often far from the country of ownership or registry. It should be noted that an overwhelming portion (77% of the tonnage by Dead Weight) of all merchant vessels engaged in international trade is registered in non-Annex I countries.

**Shipping and sustainable development**

4 Shipping is a very positive force in sustainable development, making a massive contribution to global prosperity with only a marginal negative impact on the global environment. Both the poor and the rich benefit from seaborne trade. Moreover, due to the nature of shipping, developing countries can and do become major participants in the industry itself and, by so doing generate income and create national wealth. However, the significant increase in global trade and international seaborne transport over the last decades (500% growth over the past 40 years) has also brought negative consequences, as all human and industrial activity does, through increased emissions of air pollutants and greenhouse gases.

## **IMO's GHG related work**

5 The IMO Assembly adopted, in December 2003, **Resolution A.963(23) on "IMO Policies and Practices related to the Reduction of Greenhouse Gas Emissions from Ships"**, urging the Marine Environment Protection Committee to identify and develop the mechanisms needed to achieve limitation or reduction of GHG emissions from international shipping and to consider the methodological aspects related to reporting. The Assembly resolution requests the IMO Secretariat to continue co-operating with the Secretariats of UNFCCC and the International Civil Aviation Organization.

### **IMO Study on Greenhouse Gas Emissions from Ships**

6 This Study, the most comprehensive assessment to date of the contribution made by international shipping to climate change, published in 2000. The Study estimated that ships in 1996 contributed about 1.8% of the world's total CO<sub>2</sub> emissions and clearly stated that there is no other mode of transport with a better CO<sub>2</sub> record.

7 The 2000 IMO GHG Study is being updated by an international consortium of renowned research institutes to facilitate future decisions. According to Sir Nicholas Stern's study of 2006, shipping represented one tenth of the transport sector as a whole. Other studies and IMO's preliminary findings suggest that the shipping sector's share of the global CO<sub>2</sub> emissions in 2007, due to the significant increase in world trade, is higher than previously thought. However, this will not be confirmed before the results of the updated Study are presented to IMO in the latter part of 2008 (see also paragraph 22 below).

### **Latest GHG considerations within IMO**

8 The fifty-seventh session of the Marine Environment Protection Committee (MEPC 57) was held in London, from 31 March to 4 April 2008, with a fully laden agenda where prevention of air pollution and control of greenhouse gases from ships were the paramount issues.

9 MEPC 57 considered follow-up actions to resolution A.963(23) on "IMO policies and practices related to reduction of greenhouse gas emissions from ships", including progress made in line with the "Work plan to identify and develop the mechanisms needed to achieve the limitation or reduction of CO<sub>2</sub> emissions from international shipping" adopted by MEPC 55 in October 2006.

10 The Secretary-General highlighted the need for IMO and the maritime community as a whole to act in concert with, and contribute to, the wider international efforts aimed at swift and substantive action to combat climate change under the UNFCCC process, by proactively addressing the principles and objectives enshrined in the roadmap agreed at the Bali Conference out of genuine concern for the atmospheric environment. He stressed the importance for the Committee to ensure that the complex challenges associated with the limitation and control of greenhouse gas emissions from shipping were properly understood by the international community and that IMO should continue to show leadership, not only by moving in parallel, but also keeping one step ahead of the agreed UNFCCC process.

### ***Report of the Intersessional Correspondence Group***

11 MEPC 57 considered the report of the intersessional Correspondence Group on GHG Related Issues, which was instructed to discuss possible approaches on technical, operational and market-based measures to address GHG emissions from ships. The report contained observations that all measures should be properly designed and be efficient, effective, and target-based. With regard to suggested

voluntary measures, it was pointed out that, as stand-alone measures, they might not result in immediate and tangible outcomes. The report made a distinction between short- and longer-term reduction options, by giving a summary of each, and describing their advantages and disadvantages.

### ***Fundamental principles for future regulations of GHG emissions from ships***

12 MEPC 57 acknowledged the importance of developing fundamental principles as a basis for future regulations of GHG emissions from ships. Some delegations preferred that any measures to be adopted by IMO should only be applicable to Annex I Parties to the UNFCCC and its Kyoto Protocol in accordance with the 'common but differentiated responsibility'.

13 In his intervention, the Secretary-General emphasized that the Committee should debate the issues thoroughly so that, in the end, balanced decisions would be made – an approach that only IMO, with its global membership and global mandate, could make on a global issue of global dimensions. He was of the view that the Committee should address the issue from IMO's global mandate and competence. He queried what service would be rendered to the environment if the application of measures to eliminate or reduce greenhouse gas emissions was required of a developed country with a limited number of ships under its flag when developing countries with a large number of ships under their flag would not be obliged to comply with the same measures.

14 MEPC 57 decided, by overwhelming majority, to take the principles listed below as its reference for further debate on GHG emissions from international shipping and also for further reflection when the nature and form of the measures to be taken were clearer. A coherent and comprehensive future IMO framework should therefore be:

- .1 effective in contributing to the reduction of total global greenhouse gas emissions;
- .2 binding and equally applicable to all flag States in order to avoid evasion;
- .3 cost-effective;
- .4 able to limit, or at least, effectively minimize competitive distortion;
- .5 based on sustainable environmental development without penalizing global trade and growth;
- .6 based on a goal-based approach and not prescribe specific methods;
- .7 supportive of promoting and facilitating technical innovation and R&D in the entire shipping sector;
- .8 accommodating to leading technologies in the field of energy efficiency; and
- .9 practical, transparent, fraud free and easy to administer.

15 A number of delegations expressed reservations on the principle stated in paragraph 14.2 above. The Chairman proposed to carefully reflect on the contested principles in the intersessional period and the intention of the reflection would be to reach consensus on the issue of the principles at the next session of the Committee. MEPC 57 accepted the proposal of the Chairman and encouraged Member States to submit their views to that session.

### ***Outcome of the UNFCCC Conference in Bali, December 2007***

16 MEPC 57 agreed that it was very important that all parties involved in the UNFCCC process are fully briefed of the work being done by IMO to tackle GHG emissions from international shipping. The Secretariat, therefore, was requested to prepare and present progress reports on the Committee's achievements to the relevant UNFCCC subsidiary bodies at their sessions during 2008, as well as attending the meetings.

### ***The Secretary-General's proposal to expedite IMO's work on GHG emissions***

17 MEPC 57 considered a proposal by the Secretary-General to expedite IMO's work on GHG emissions. In introducing his proposal, the Secretary-General underlined the importance and urgency attached universally to the limitation and control of greenhouse gas emissions from all sources - including international shipping, as well as the need for IMO to act in concert with the wider international efforts - seeking the development and adoption of a global agreement by December 2009 and the coming into force of the new regime by 2012.

18 MEPC 57 welcomed the proposal to expedite IMO's work on GHG emissions from ships and agreed it would give more time for thorough discussion of all proposals prior to MEPC 58.

### ***Intersessional GHG meeting***

19 MEPC 57 approved Terms of Reference for an intersessional meeting of the Working Group on GHG Emissions from Ships, to be held in Oslo, Norway from Monday, 23 June to Friday, 27 June 2008. Recognizing the need to address GHG emissions from the maritime sector, in co-operation with the UNFCCC, and taking into account the conclusions of MEPC 57 on the reduction of greenhouse gas emissions from ships, the first intersessional meeting of the Working Group on GHG Emissions from Ships is instructed further to address market-based, operational and technical measures identified by the MEPC 57 and, in a non-prioritized order:

- .1 develop a mandatory CO<sub>2</sub> Design Index for new ships and submit it to MEPC 58 for approval;
- .2 review the existing CO<sub>2</sub> operational index guidelines (MEPC/Circ.471) with a view to finalization at MEPC 58 and, in particular:
  - .1 develop a methodology for a CO<sub>2</sub> baseline in terms of efficiency; and
  - .2 consider the purpose of the CO<sub>2</sub> operational indexing scheme;
- .3 further develop mechanisms with GHG reduction potential for international shipping with a view to selecting the most promising measures for consideration at MEPC 58, *inter alia*:
  - .1 global levy/hybrid mechanism;
  - .2 Emissions Trading Schemes (ETS) and/or Clean Development Mechanism (CDM); and

- .3 best practices on the range of measures as identified by MEPC 57 and how they can be implemented by ship builders, operators, charterers, ports and other relevant partners to make all possible efforts to reduce GHG emissions, with the aim of developing a resolution as appropriate;
- .4 consider the level of reductions that can be achieved, address the design, implementation, cost benefit, capacity building and regulatory/legal aspects as well as the impacts for the shipping industry, the flag and port States and other stakeholders as appropriate, associated with each of these options; and
- .5 present a written report to MEPC 58.

21 The Secretary-General encouraged wide participation at the Oslo meeting as this meeting would be vital in keeping with the Committee's agreement to expedite the GHG work. He also recommended that the meeting in Oslo be chaired by the Committee's Chairman, Mr. Andreas Chrysostomou (Cyprus), with assistance from Mr. Bin Okamura (Japan) Mr. Chrysostomou indicated his preparedness to chair the Oslo meeting and the Committee agreed to this arrangement.

#### ***Progress reports on the update of the 2000 IMO GHG Study***

22 MEPC 57 noted that, in accordance with the Terms of Reference approved by MEPC 56, a Steering Committee had been established and had met twice under the Chairmanship of Ms. Petra Bethge (Germany). The contract for the update has been awarded to an international consortium of research institutions, co-ordinated by MARINTEK of Norway. The updating had been divided into two phases:

- .1 Phase 1, covering a CO<sub>2</sub> emission inventory from international shipping and future emission scenarios, will be reported to IMO by August 2008 for consideration by MEPC 58 in October 2008; and
- .2 Phase 2, also covering greenhouse gases other than CO<sub>2</sub> and other relevant substances in accordance with the methodology adopted by UNFCCC, as well as the identification and consideration of future reduction potentials by technical, operational and market-based measures, will be submitted to IMO by February 2009 for consideration by MEPC 59.

#### ***GHG module in GISIS***

23 MEPC 57 noted with appreciation that the GHG module was now available in GISIS (Global Integrated Shipping Information System) and encouraged Member States and others to use it, although no data was still available for public users. The large collection of CO<sub>2</sub> indexing data received through submissions to the Committee will, following agreements with the submitting Governments, be entered into the database (MEPC.1/Circ.589).

#### ***Re-establishment of the Correspondence Group on GHG Related Issues***

24 MEPC 57 re-established the Intersessional Correspondence Group on GHG Related Issues co-ordinated by Australia and the Netherlands and instructed it as follows:

“Taking into consideration available relevant information, the Intersessional Correspondence Group on Greenhouse Gas Emissions from Ships is instructed to:

- .1 prepare detailed proposals on the measures identified in the Correspondence Group report (MEPC 57/4/5; MEPC 57/4/5/Add.1), which have not been identified for further consideration by the GHG Working Group at its intersessional meeting in Oslo, Norway; and
- .2 present an interim report to MEPC 58 with a final report to be presented to MEPC 59”; and

25 MEPC 57 urged Member States and organizations to actively participate in the work of the Correspondence Group, to submit papers to the focal points for work prior to the intersessional meeting in Oslo and to that meeting itself, on the measures to be discussed in their respective terms of reference, including, but not limited to, design, implementation, cost-benefit, mitigation potential, capacity-building and regulatory/legal aspects.

### **Maritime transport and sustainable development**

27 There is no doubt that shipping **is a clean, green, environmentally-friendly and very energy-efficient mode of transport**. Overall, it is only a small contributor to the total volume of atmospheric emissions. Nevertheless, significant reductions in harmful emissions from ships and increases in fuel efficiency have been achieved over the past decades through enhancements in the efficiency of engine and propulsion systems and improved hull design. Larger ships and a more rational utilization of individual vessels have also contributed significantly to reducing the amount of energy needed to transport a given unit of cargo.

28 What is often overlooked in any discussion about overall levels of GHG emissions from shipping is that the total amount of **shipping activity is not governed by shipping itself, but by global demand for shipborne trade**. And not only is this high, but it continues to grow. The international shipping industry is the life blood of the global economy. Without shipping, it would simply not be possible to conduct intercontinental trade, to transport raw materials in bulk or to enable the import and export of affordable food and manufactured goods.

29 IMO will continue its endeavours to reduce any environmental impacts from international shipping, a transport industry that is vital to world trade and sustainable development.

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