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PREVENTION OF AIR POLLUTION FROM SHIPS

Benefits and possible adverse impacts of market-based instruments

Submitted by World Wide Fund for Nature (WWF)

SUMMARY

Executive summary:	This document addresses some concerns raised at the first Intersessional Meeting of the Working Group on Greenhouse Gas Emissions from Ships in June 2008, regarding market-based instruments and outlines new analysis carried out for WWF
Strategic direction:	7.3
High-level action:	7.3.1
Planned output:	7.3.1.3
Action to be taken:	Paragraph 17
Related document:	MEPC 58/4

1 This document comments on document MEPC 58/4 (Secretariat) and is submitted in accordance with the provisions of paragraph 4.10.5 of the revised Guidelines on the organization and method of work of MSC and MEPC and their subsidiary bodies (MSC-MEPC.1/Circ.2).

Background and objective

2 At the first Intersessional Meeting of the Working Group on Greenhouse Gas Emissions (GHG) from Ships in Oslo, Norway, it was not possible to bridge the principles of the IMO of providing global and uniform rules while delivering on the differentiated principles embodied in the UNFCCC and the Kyoto Protocol (MEPC 58/4, section 5). Questions were also raised regarding possible adverse socio-economic impacts of a market-based instrument for shipping emissions.

3 This document attempts to address some of the questions and concerns raised is Oslo, with particular focus on possible adverse impacts on developing countries. It is based on a recent analysis carried out by CE Delft, commissioned by WWF-United Kingdom.

Differentiated benefits

4 WWF supports the development of market-based instruments (MBI) to reduce or mitigate GHG emissions from international shipping as one element in a suite of measures, including *inter alia* a CO_2 design index for new ships, a CO_2 operational index for existing ships, and guidance on best practices. WWF believes that a market-based instrument would complement other measures by providing the necessary incentive for their implementation.

5 WWF has, as yet, no preference between an Emissions Trading Scheme for shipping, a global levy, or any of the hybrid schemes that have been proposed so far to the MEPC. Any MBI should, however, cover all ships regardless of the ship flag and nationality of the shipowner. Furthermore, the revenues raised should be recycled to developing nations, *such that all groups of developing countries are net beneficiaries from the scheme.*

6 In Oslo, all the delegations that spoke on the issue supported that revenues aggregated through any economic instrument should mainly be used for mitigation and adaptation measures in developing countries, together with transfer of technology and capacity-building (MEPC 58/4, paragraph 5.16).

7 The analysis carried out confirms that a creative MBI covering all ships can deliver significant and differentiated benefits:

.1 it could raise between $10 billion and $45 billion annually;

.2 this revenue should be channelled towards a mixture of adaptation, technology transfer, and emission mitigation projects including forestry (REDD), and CDM/JI projects; and

.3 all non-Annex I parties to the UNFCCC would benefit from such a policy, by between 2 and 15 times their costs.

8 One scheme has demonstrated that high level of benefits could be achieved for all groups of developing countries, as illustrated in the table below (see Appendix 1 for details):

Country group	Share of revenue payment	Share of revenue receipts
Developed Countries	**59%**	**5%**
Economies in Transition (without Russia)	**2%**	**3%**
BRIC	**16%**	**30%**
Least Developed Countries (LDCs)	**1%**	**15%**
Small Island Developing States (SIDS)	**1%**	**4%**
Other Developing Countries	**22%**	**44%**

9 Developed countries would pay the lion's share of costs but receive only little from the funds. In contrast, all other country groups receive more than their costs. The LDCs and SIDS would benefit most from the scheme due to the significant adaptation financing allocated for them. In contrast, the BRIC countries (Brazil, Russia, India China) will benefit mostly from the CDM/JI investments and funding for Reduced Emissions from Deforestation and Degradation (REDD).

The impact on cost of imports, demand for shipping, food prices, and shipyards

10 The effect of imposing a carbon price on shipping was estimated as (maximum):

.1 increase in costs of imports by less than 1%;

.2 slow down in the growth in demand for shipping by between 1-2%, against a forecast growth of 3% per annum;

.3 increase in food prices by little more than half of one percent for islands most dependent on imports by sea; and

.4 increase in demand for shipyard services.

Key assumption: \$30 applied to every tonne of shipping CO_2 (details in Appendix 2).

11 It should be noted that these values are the maximum likely values, for two reasons:

.1 Calculations presented assume a charge or emission allowance auctioning is applied to all emissions from ships. Under several proposed schemes, ships would only pay for a proportion of emissions, depending on the emission reduction goal. The goal, and therefore the cost of the scheme, is negotiable; and

.2 Any reduction in exports is likely to be lower than the reduction in transport, as a share of the transport reduction will result from logistics improvements and other measures to reduce emissions, as listed in MEPC 58/4, paragraph 6.2.

12 Islands with the highest food imports relative to their GDP were identified, as these are likely to be those most affected by a rise in the cost of shipping. Other island States are likely to suffer lower average food price increases as they are less dependent on imports.

13 By differentiating the emission costs on routes to the developing countries, and/or exempting imports of subsistence food the impact could be further reduced. This will simultaneously strengthen the fulfilment of the UNFCCC principle of common but differentiated responsibilities and respective capabilities. The potential adverse impacts on developing countries will be accordingly reduced, and in some cases eliminated entirely.

14 Although the topic has received little attention to date, including maritime transport in a climate policy is likely to result in an increased demand for ships with lower CO_2 emissions, either by modifying existing ships or replacing them with new ships. As a consequence, a positive effect on demand for shipyard services located in Asia is expected.

15 See annex to this document for additional details. The complete report is available at www.ce.nl

Proposal

16 WWF, takes the view that benefits of and ways to address potential adverse effects of market-based instruments should be further discussed in a MEPC working group.

Action requested of the Committee

17 The Committee is invited to consider the information provided, in particular the proposal in paragraph 16 and take action as appropriate

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ANNEX

DISTRIBUTION OF REVENUES AND COST IMPLICATIONS

Possible distribution of revenues raised from a shipping MBI

1 One proposal that gives a detailed account of how revenues could be spent is the International Maritime Emissions Reduction Scheme or IMERS (Stochniol, 2008)[1].

2 The total revenue collected by IMERS depends on its parameters, especially the notional emission reduction goal, carbon price and emission growth. In an example given by Stochniol (2008), for a levy of US$ 27 per tonne of fuel, the receipts would be approximately US$ 10 billion per annum. (In other proposals, where all permits are auctioned, this figure is in the order of US$ 30-45 billion per annum.) Revenues would be divided as in the following table:

Total revenue	**42%**	**Adaptation**	**32%**	**LDCs**
			8%	**SIDs**
			60%	**Other developing countries and EITs**
	42%	**Mitigation**	**50%**	**REDD**
			50%	**JI/CDM**
	16%	**Technology**	**50%**	**Short-term technology transfer**
			50%	**Long-term R&D**

Cost of imports, impact on food prices, and demand for shipping

3 Fuel costs typically constitute between 30% and 60% of the overall transport costs (RA and CE, 2008)[2]. At a fuel price of around US$ 700 per tonne (the level of July 2008), a carbon price of US$ 30 per tonne of CO_2 would add 13% to fuel costs and 4-8% on total transport costs. At a fuel price of around US$ 450 per tonne (the price level of January 2008)[3], the same carbon price would add 6-12% to total transport costs.

4 Transport costs in turn make up only a small fraction of the total costs. UNCTAD (2007)[4] estimates total freight costs (for all modes of transport) to be 5.9% of the value of imports; the share is lower in developed countries (4.8 %) and higher in developing countries (7.7%, ranging from 4.4% in America to 10% in Africa).

5 Based on the estimates above, an increase in transport costs between 4 and 8% and a share of transport costs in value of 4 to 10%, it can be estimated that the increase in costs of import is less than 1% on average.

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1 Stochniol, André, 2008, Architecture for Mitigation, Adaptation and Technology Transformation for International Transport: "Global and Differentiated", Paper for Harvard Project on International Climate Agreements, London.

2 Resource Analysis and CE, 2008, "analysis of the impacts on Flandres or policy measures for international maritime transport in the fields of climate and acidifying emissions", Report to the Flemish Administration.

3 Both prices quoted on www.bunkerworld.com for IFO380 in Rotterdam.

4 UNCTAD, 2007: Review of Maritime Transport, New York, Geneva.

6 Emissions associated with food imports have been estimated bottom-up using figures from the UN Food and Agriculture Organization. The increase in the costs of food imports from a range of carbon prices being imposed on all shipping emissions is presented in the table below:[5]

Country	Increase in costs of food imports (% of food import values)		
	US$ 10 / tonne of CO_2	US$ 30 / tonne of CO_2	US$ 50 / tonne of CO_2
Sao Tome and Principe	0.12-0.21%	0.37-0.62%	0.62-1.03%
Cape Verde	0.06-0.10%	0.18-0.30%	0.30-0.50%
Tonga	0.11-0.18%	0.33-0.55%	0.55-0.91%
Dominica	0.04-0.06%	0.11-0.18%	0.18-0.30%
Samoa	0.11-0.18%	0.32-0.53%	0.53-0.88%
Saint Lucia	0.01-0.02%	0.03-0.06%	0.06-0.09%

7 The analysis carried out confirmed scarce information on price elasticity of maritime transport. Assuming an elasticity of -0.25, the 4-8% rise in transport costs could result in a reduction in maritime transport of 1-2% relative to a baseline which is forecasted to grow at over 3% per year (MARINTEK *et al*., 2008)[6].

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[5] Full calculations are set out in Annex A of CE Delft's report *Left on the High Seas: Global Climate Policies for International Transport*, available at www.ce.nl

[6] MARINTEK, CE Delft, Dalian Maritime University, Deutsches Zentrum für Luft- und Raumfahrt e.V., DNV, Energy and Environmental Research Associates, Lloyd's Register-Fairplay, Mokpo National Maritime University (MNMU), National Maritime Research Institute (Japan), Ocean Policy Research Foundation (OPRF), 2008, Updated Study on Greenhouse Gas Emissions from Ships, phase 1 report.