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PREVENTION OF AIR POLLUTION FROM SHIPS

Comments on BLG 12 and Options for SO_x Reductions from Shipping

Submitted by the Friends of the Earth International (FOEI)

SUMMARY

Executive summary:	This document comments on discussions at BLG 12 relating to the global and the global/regional options for reductions of sulphur in marine fuel. This document was produced by a coalition of environmental NGOs[1].
Strategic direction:	7.3
High-level action:	7.3.1
Planned output:	7.3.1.1
Action to be taken:	Paragraph 13
Related documents:	BLG 10/14/13; BLG 11/5/5, BLG 11/5/6, BLG 11/INF.3; BLG-WGAP 1/2/11; BLG 12/6/1, BLG 12/6/9, BLG 12/INF.10, BLG 12/WP.6; MEPC 53/4/1; MEPC 57/4/15 and MEPC 57/4/23

1 This document provides comments on document MEPC 57/4/23 and is submitted in accordance with paragraph 4.10.5 of the Committees' Guidelines (MSC-MEPC.1/Circ.1) and the relaxed deadline for comments documents on the air pollution item to MEPC 57 with prior authorization of the MEPC Chairman following consultations with the Secretariat in line with paragraph 4.12 of the Committees' Guidelines.

Introduction

2 This document comments on certain matters discussed at BLG 12 relating to the reduction of sulphur in marine fuel.

3 BLG 12 agreed to present to MEPC three options for reduction of SO_x emissions from ships (BLG 12/WP.6, paragraphs 6.5 to 6.7). The first two of these options are:

Option 1 – Global
1.00% sulphur fuel standard applied globally in [2012]; and
0.50% fuel standard applied globally in [2015].

[1] Clean Air Task Force, European Federation for Transport and Environment, North Sea Foundation, Seas at Risk, Swedish NGO Secretariat on Acid Rain and Bellona.

Option 2 – Global/Regional
Global fuel cap remains unchanged at 4.5%; and
Emission Control Areas require 0.10% fuel standard in [2012].

4 A substantial amount of information has recently been submitted to BLG and MEPC regarding the reduction of SO_x emissions from ships. These include information on the cost of emission reductions (e.g., MEPC 57/4), as well as the benefits (e.g., BLG 12/6/9, MEPC 57/4/15) of scenarios that are very similar to Options 1 and 2 above.[2]

5 Together, this information supports adoption of SO_x reduction measures at least as stringent as Option 1 or Option 2.

Costs and other impacts of substantial SO_x reductions

6 MEPC 57/4, the report of the Secretary-General's Scientific Group of Experts, evaluating different fuel options, estimated (using industry figures and models) that the amount of incremental investment required of the refining industry by 2020 to produce marine fuel to meet the requirements of Option 1 (global distillate at 0.5% sulphur) would be US$ 126 billion (paragraph 103). The amount of incremental refining investment needed to meet Option 2 (0.1% sulphur in limited areas equal to 15% of global demand) was estimated at US$ 28.6 billion (paragraph 98).

7 According to Platts, as of September 2007, the 10 largest oil companies made over US$ 180 billion in annual profits.[3] Earnings at the largest company, ExxonMobil Corp, alone were over US$40 billion in 2007, capital spending was almost $21 billion, and distribution to shareholders topped US$35 billion.[4] Clearly, the oil industry has the capability to make the investments necessary to comply with either Option 1 or Option 2. Of course, the industry will recover that investment through higher prices for distillate marine fuel.

8 MEPC 57/4 also estimates the incremental amount of CO_2 emissions resulting from implementation of Options 1 and 2. First of all, an industry model projects that the global refining industry will emits an additional 28 million tons of CO_2 in 2020 to produce the fuel required to meet Option 2, and an additional 93 million tons to meet Option 1 (paragraph 106). However, burning distillate marine fuel with less sulphur content will actually result in less CO_2 emissions than burning HFO. MEPC 57/4 estimated the CO_2 emission reduction in 2020 at 37 million tons for Option 2, and 58 million tons for Option 1 (paragraph 33). Thus, combining the impacts at the refinery and the ships, implementation of Option 2 (global/regional) will result in DECREASED CO_2 emissions, while Option 1 will result in only a slight increase (35 mt from a base case total of over 2600 mt). Moreover, MEPC 57/4 points out that the industry model likely overstated the amount of distillate and the CO_2 refinery increment (paragraphs 90.3, 90.4, 90.5 and 90.6). Thus, the implementation of either Option 1 or Option 2 cannot be said to result in any meaningful net increase in global CO_2 emissions.

Benefits of substantial SO_x reductions

9 Recent scientific work has examined the human health effects of shipping emissions – specifically, global premature mortality resulting from primary and secondary particulate

[2] We note that Options 1 and 2 as formulated by BLG 12 are not identical to the options examined in BLG 12/6/1 or in BLG 12/6/9; MEPC 57/4/15, but they are similar.
[3] *See* http://www.platts.com/top250/index.xml.
[4] *See* http://www.businesswire.com/portal/site/exxonmobil/index.jsp?ndmViewId=news_view&ndmConfigId=1001.

emissions from ships. That work estimated that air pollution from ocean-going ships is responsible for about 60,000 premature deaths each year globally, projected to increase with global trade by 40% by 2012.[5] Follow-up work examined the reductions in premature mortality resulting from two control scenarios that are similar to Options 1 and 2 described above.[6] That work estimates that implementation in 2012 of either Option 1 (0.5% S fuel content used worldwide) or Option 2 (0.1% S fuel content within a 200 mile SECA from all of the world's coastlines) will reduce shipping–related global premature mortality from over 80,000 deaths in 2012 by 50-60%.

10 Many benefits of reduced emissions cannot be quantified in monetary terms. However, in order to evaluate the benefits of its regulatory programs, the US EPA has quantified a number of benefits from reduced particulate emissions in the US. Using EPA's figure for the value of a statistical life, the annual cost to society of the 60,000 or so annual deaths caused by shipping in 2002 is over US$300 billion per year.[7] Of course, there are other likely health impacts from shipping emissions that were not estimated by the work discussed above, such as non-fatal heart attacks, lung disease, asthma, hospital visits and lost work days, as well as a variety of environmental impacts.[8]

11 Using the same US EPA methodology, societal benefits of the emission reductions estimated for the two control scenarios examined in the follow-up work discussed in MEPC 57/4/15 are in the range of US$225 – 275 billion per year. Thus, a single year of benefits from implementing Option 1 or Option 2 discussed above will exceed the entire refinery incremental investment estimated by the petroleum industry to be necessary from now until 2020 to provide the fuel to implement those options.

Conclusion

12 In summary, the cost to society of no action to reduce SO_x emissions from ships is much higher than the cost of implementing either Option 1 or Option 2, and the benefits flowing from each SO_x control option far exceed the costs.

Action requested of the Committee

13 The Committee is invited to consider the above information and to adopt stringent limitations for air pollution from ships.

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5 Corbett, J.J., Winebrake, J.J., Green, E.H., Kasibhatla, P., Eyring, V., and Lauer, A., "Mortality from Ship Emissions: A Global Assessment," *Environmental Sci. Technol*, American Chemical Society, 42(24), p. 8512–8518, Dec 15, 2007. It is available on the Internet at: http://pubs.acs.org/cgi-bin/sample.cgi/esthag/2007/41/i24/html/es071686z.html.

6 MEPC 57/4/15.

7 *See, e g.*, US EPA (2004), Regulatory Impact Analysis, "Control of Emissions from Nonroad Diesel Engines," May 2004, EPA420-R-04-007, at pp. 9-21-22, 29-34, Table 9-7, available on the Internet at: http://epa.gov/nonroad-diesel/2004fr/420r04007.pdf.
See also, Viscusi, WK; Aldy, JE (2003), "The value of a statistical life: a critical review of market estimates throughout the world," *Journal of Risk and Uncertainty*, v.27, no. 1.

8 *See, e.g.*, MEPC 53/4/1 and BLG 11/5/27, and sources cited therein.