INTERNATIONAL MARITIME ORGANIZATION

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MARINE ENVIRONMENT PROTECTION COMMITTEE
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Agenda item 4

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PREVENTION OF AIR POLLUTION FROM SHIPS

Study related to reduction of SOx emissions

Submitted by Japan

SUMMARY

Executive summary:	This document provides the result of a study related to SOx emission in Japan
Strategic direction:	7.3
High-level Action:	7.3.1
Planned output:	7.3.1.1
Action to be taken:	Paragraph 6
Related documents:	BLG 12/6/1 and BLG12/INF.11

Introduction

1 This document provides some brief results of a JPEC (Japan Petroleum Energy Center) Study (supported by the Ministry of Economy, Trade and Industry) on the impacts for the oil supply industry in Japan and related environmental challenges. The information might be valuable for the discussion related to the revision of MARPOL Annex VI when considering SOx emission control areas, future limits on sulphur content in fuel oil and related implementation dates.

Supply of marine fuel

2 Reduction of sulphur content in petroleum products should be discussed considering cost and capability of the supply side.

JPEC studied the cost of low sulphur fuel production in Japan for the following two cases:

Case 1:	To reduce sulphur content of residual marine fuel to 0.5% S by 2015	
	Estimated investment*)	6,000 million $
	Cost rise of low sulphur residual fuel	273 $/ton.
Case 2:	To switch residual marine fuel to distillate fuel at 0.5% S (in case residue oil is prohibited)	
	Estimated investment**)	6,790 million $
	Cost rise of distillate fuel	363 $/ton

*) Estimated amount of fuel is 8.4Mt/Y.
**) Estimated amount of fuel is 8.2Mt/Y.

3 It takes from five to ten years to construct new refinery units, taking into account initial planning, preparation of the processing site, design of the unit and environmental assessment. The date of introduction of more stringent regulations should be carefully considered, taking into account fuel supply capacity. Insufficient supply of marine fuel will cause shortage of bunker, rise of bunker prices and give significant impact for the shipping industry.

Relation to other environmental problems

4 Production of low sulphur fuel through heavy oil cracking and deep desulphurization in the refineries will cause additional energy consumption and CO_2 emission. According to JPEC's estimation, switching from residual fuel to distillate fuel (8.2 million tons) of 0.5% sulphur content will generate an additional 3.1 million tons of CO_2 emissions and 0.5% increase in energy consumption as compared with expected original operation in the refineries in 2015.

5 Furthermore, considerable amount of sulphur inevitably will be produced as a by-product in desulphurization operations and coke in cracking operations by refineries. This will give serious impacts on the oil industry on how to dispose of the extra sulphur and coke. It is estimated that, in case that the sulphur component in 200 million tons of marine fuel oil is reduced from 4.5% to 0.5%, an additional 8 million tons of sulphur disposal will occur globally. It is also expected that an additional 1.4 million tons of coke will be generated in Japan alone. It must therefore be carefully considered to find a suitable solution for disposal of additional sulphur and coke.

Action requested of the Committee

6 The Committee is invited to consider the above and take action as appropriate.