E

MARINE ENVIRONMENT PROTECTION COMMITTEE
61st session
Agenda item 4

MEPC 61/4
16 February 2010
Original: ENGLISH

PREVENTION OF AIR POLLUTION FROM SHIPS

Sulphur monitoring for 2009

Note by the Secretariat

SUMMARY

Executive summary:	This document presents the results of sulphur monitoring for 2009
Strategic direction:	7.3
High-level action:	7.3.1
Planned output:	7.3.1.1
Action to be taken:	Paragraph 15
Related documents:	MEPC 57/4/24; MEPC 59/4/1; resolution MEPC.82(43) and resolution MEPC.183(59)

General

1 In accordance with regulation 14(2) of MARPOL Annex VI and Guidelines for monitoring the worldwide average sulphur content of residual fuel oils supplied for use onboard ships adopted by resolution MEPC.82(43) (existing Guidelines), the results of the sulphur monitoring should be presented to a subsequent session of the Committee every year (in this case, MEPC 61).

2 MEPC 59, in October 2008, adopted the 2009 Guidelines for monitoring the worldwide average sulphur content of residual fuel oils supplied for use on board ships by resolution MEPC.183(59) (revised Guidelines), in which the calculation formula for the average sulphur content has been revised on a mass of fuel basis as opposed to a sample number basis as in the existing Guidelines.

3 Calculation of the figure for the average worldwide sulphur content in residual fuel oil for a given year is based on data made available by the providers of sampling and testing services as mentioned in paragraph 7 of the existing Guidelines and in paragraph 12 of the revised Guidelines. The method of calculation is described in paragraph 4.2 of the existing Guidelines and in paragraph 6 of the revised Guidelines.

4 Although the revised guideline becomes effective in 2010, the data providers have kindly provided the sulphur data for 2009 on both a sample number basis and a mass of fuel

basis. Therefore the sulphur monitoring for 2009 was calculated and presented in accordance with both methodologies.

Sulphur data on a sample number basis

5 As shown in annex 1 to this document, the average sulphur content of the tested residual fuel oil on a sample number basis has decreased since 2008 by 0.02 percentage points from 2.37% to 2.35%. As the bunkered quantity per bunkering has decreased, the explanation may be that ships take on board smaller quantities of low-sulphur fuel oil for consumption within Emission Control Areas for sulphur oxides (ECA-SO_x). The significant increase in low sulphur samples (see paragraph 7) may indicate that low-sulphur fuel oil is tested more frequently to secure compliance. Both these factors may lead to an increased number of low sulphur samples and thereby a lower average sulphur level in the Sulphur Monitoring Programme than the actual global sulphur level.

Distribution of samples

6 A graphical representation of the distribution, as mentioned in paragraph 4.2 of the existing Guidelines, with a breakdown of the data provided per increment of 0.5% of sulphur, is shown in annex 1 to this document.

7 The distribution of samples shows that 26.3% of the samples are below 1.5% sulphur content, in contrast to last year's 24.1% and earlier years when this figure has been between 7 and 9%. The distribution also shows that the figure for sulphur content between 1.5 – 2.0% is less than the figure for sulphur content between 1.0 – 1.5%.

8 Just 62 out of the 106,503 samples (0.06%) exceed 4.5% m/m sulphur. It should also be noted that none of the data providers report samples containing more than 5% sulphur.

Calculation of rolling average

9 The Guidelines provide for the calculation of a rolling average of the sulphur content for a three-year period. The sulphur content of residual fuel being measured for 2007, 2008 and 2009 now presents the ninth consecutive rolling average. The first rolling average was based on sulphur data for 1999, 2000 and 2001 and is also the reference value.

10 The three year rolling average for 2007 to 2009 is now 2.38%. The previous three-year rolling average for 2006 to 2008 was 2.46% (MEPC 59/4). The reference value mentioned in paragraph 5 of the existing Guidelines is 2.70%.

11 As stipulated in paragraph 6 of the existing Guidelines, if in any given year the three-year rolling average exceeds the reference value by 0.2%, MEPC should consider the need for further measures to reduce SO_x emissions from ships. This has not happened over 2009. The Guidelines also stipulate that MEPC should continually review this excess value (now 0.2%) once the reference value has been set.

Sulphur data on a mass of fuel basis

12 As shown in annex 2 to this document, the Secretariat has also received sulphur data based on actual quantities; this figure is 2.60% and shows a higher global average value than that calculated on the basis of the number of samples which is 2.35%.

Distribution of samples

13 A graphical representation of the distribution, as mentioned in paragraph 8 of the revised Guidelines, with a breakdown of the data provided per increment of 0.5% of sulphur, is shown in annex 2 to this document.

14 The distribution of samples shows that 13.5% of the samples are below 1.5% sulphur content, in contrast to the percentage on a sample number basis, which is 26.3% (see paragraph 7).

Action requested of the Committee

15 The Committee is invited to note the outcome of the monitoring of the worldwide average sulphur content of residual fuel oils supplied for use on board ships through 2009, and take action as appropriate.

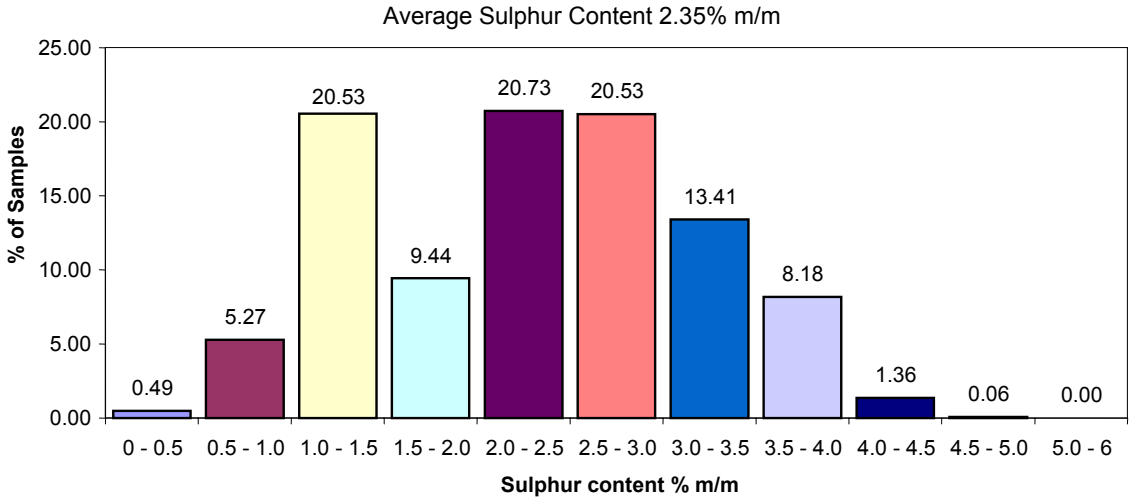
***

ANNEX 1

AVERAGE SULPHUR CONTENT FOR 2009 ON SAMPLE NUMBER BASIS

Total number of samples tested : 106,503
Corresponding quantity of residual fuel oil : 94,323,860 tonnes
Calculated average sulphur content : 2.35% m/m
Distribution per increment of 0.5% S m/m : as per graphical representation

Sulphur Distribution of 106,503 samples



Sulphur monitoring programme 1999 – 2009

Year	Document reference	Corresponding quantity of residual fuel oil (tonnes)	Number of samples tested	Tonnes per bunkering	Average sulphur content
1999	MEPC 45/INF.12	47,000,000 tonnes	53,000	886	2.7%
2000	MEPC 47/INF.2	49,000,000 tonnes	54,000	907	2.7%
2001	MEPC 48/INF.4	56,000,000 tonnes	62,000	903	2.7%
2002	MEPC 49/4/1	59,000,000 tonnes	63,000	936	2.6%
2003	MEPC 52/4/8	67,395,141 tonnes	66,958	1006	2.7%
2004	MEPC 53/4	74,408,066 tonnes	66,312	1122	2.7%
2005	MEPC 55/4/1	82,436,438 tonnes	79,592	1035	2.7%
2006	MEPC 56/4	86,857,565 tonnes	86,117	1008	2.59%
2007	MEPC 57/4/24	92,757,373 tonnes	97,172	954	2.42%
2008	MEPC 59/4	97,600,555 tonnes	106,925	913	2.37%
2009	**MEPC 61/4**	**94,323,860 tonnes**	**106,503**	**886**	**2.35%**

Three-year rolling average

Year	Average sulphur content	Three-year rolling average - Years used	Three-year rolling average
1999	2.7%		
2000	2.7%		
2001	2.7%	1999, 2000 and 2001	2.70%*
2002	2.6%	2000, 2001 and 2002	2.67%
2003	2.7%	2001, 2002 and 2003	2.67%
2004	2.7%	2002, 2003 and 2004	2.67%
2005	2.7%	2003, 2004 and 2005	2.70%
2006	2.59%	2004, 2005 and 2006	2.66%
2007	2.42%	2005, 2006 and 2007	2.57%
2008	2.37%	2006, 2007 and 2008	2.46%
2009	**2.35%**	**2007, 2008 and 2009**	**2.38%**

***** Reference value

***

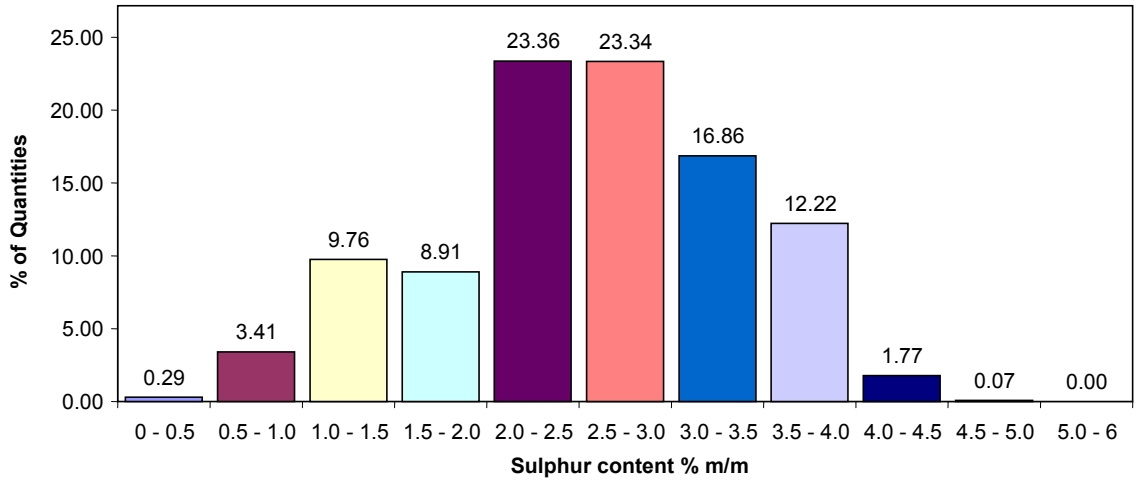
ANNEX 2

AVERAGE SULPHUR CONTENT FOR 2009 ON A MASS OF FUEL BASIS

Total number of samples tested : 106,503
Corresponding quantity of residual fuel oil : 94,323,860 tonnes
Calculated average sulphur content : 2.60% m/m
Distribution per increment of 0.5% S m/m : as per graphical representation

Sulphur Distribution of 94,323,860 tonnes

Average Sulphur Content 2.60% m/m



Sulphur monitoring programme 2009

Year	Document reference	Corresponding quantity of residual fuel oil (tonnes)	Number of samples tested	Tonnes per bunkering	Average sulphur content
2009	**MEPC 61/4**	**94,323,860 tonnes**	**106,503**	**886**	**2.60%**

Three-year rolling average

Year	Average sulphur content	Three-year rolling average - Years used	Three-year rolling average
to be determined in 2012			