

INTERSESSIONAL MEETING OF THE  
WORKING GROUP ON REDUCTION OF  
GHG EMISSIONS FROM SHIPS  
1st session  
Agenda item 2

ISWG-GHG 1/2/13  
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**CONSIDERATION OF HOW TO PROGRESS THE MATTER OF  
REDUCTION OF GHG EMISSIONS FROM SHIPS**

**The level of ambition of the comprehensive IMO Strategy on reduction of GHG  
emissions from ships**

**Submitted by Antigua and Barbuda, Belgium, Denmark, France, Germany, Kiribati,  
the Marshall Islands, Solomon Islands, Sweden, Tonga, Tuvalu, IAPH and ICHCA**

**SUMMARY**

*Executive summary:* In line with the objectives of the Paris Agreement, a global emissions pathway is needed for international shipping in which emissions start declining as soon as possible and reduce towards zero in the second half of this century. A quantified pathway is a necessary future element of the Initial IMO Strategy because it allows an evaluation of the development of emissions as well as an assessment of the short-, mid- and long-term measures relative to the global level of ambition.

*Strategic direction:* 7.3

*High-level action:* 7.3.2

*Output:* 7.3.2.1

*Action to be taken:* Paragraph 22

*Related documents:* MEPC 68/5/1; MEPC 69/7/2; MEPC 70/7/6, MEPC 70/7/13, MEPC 70/18/Add.1 and MEPC 71/7/7

**Introduction**

1 MEPC 70 approved the *Roadmap for developing a comprehensive IMO strategy on the reduction of GHG emissions from ships*. It contains a work plan that will result in the adoption of an initial IMO Strategy at MEPC 72 (spring 2018) and the adoption of a revised IMO Strategy at MEPC 80 (spring 2023).

2 This document proposes that in order to assess and select, as required, and measure the effectiveness of short-, mid- and long-term emission reduction measures, it will be necessary to establish an overarching objective of the strategy. The co-sponsors consider that this can be done by agreeing a global level of ambition by which the international shipping sector should reduce its greenhouse gas emissions.

3 A global level of ambition has to be in alignment with global climate policy. COP 21 of the UNFCCC approved the Paris Agreement which entered into force on 4 November 2016. To date 144 countries have ratified the Paris Agreement. Parties to the Paris Agreement have agreed on an emissions pathway to reduce global greenhouse gas emissions.

4 This document proposes ways to set a level of ambition for the international shipping sector in the initial IMO Strategy that is in line with the Paris Agreement. It first analyses the level of ambition of the Paris Agreement, then argues why a level of ambition should be an element of the Initial Strategy, and finally proposes how the level of ambition could be defined.

### Level of ambition in the Paris Agreement for global emissions

5 In order to limit the global average temperature increase to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C, the Paris Agreement aims for:

"global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty" (Article 4.1).

6 Figure 1 shows a graphic representation of this pathway.

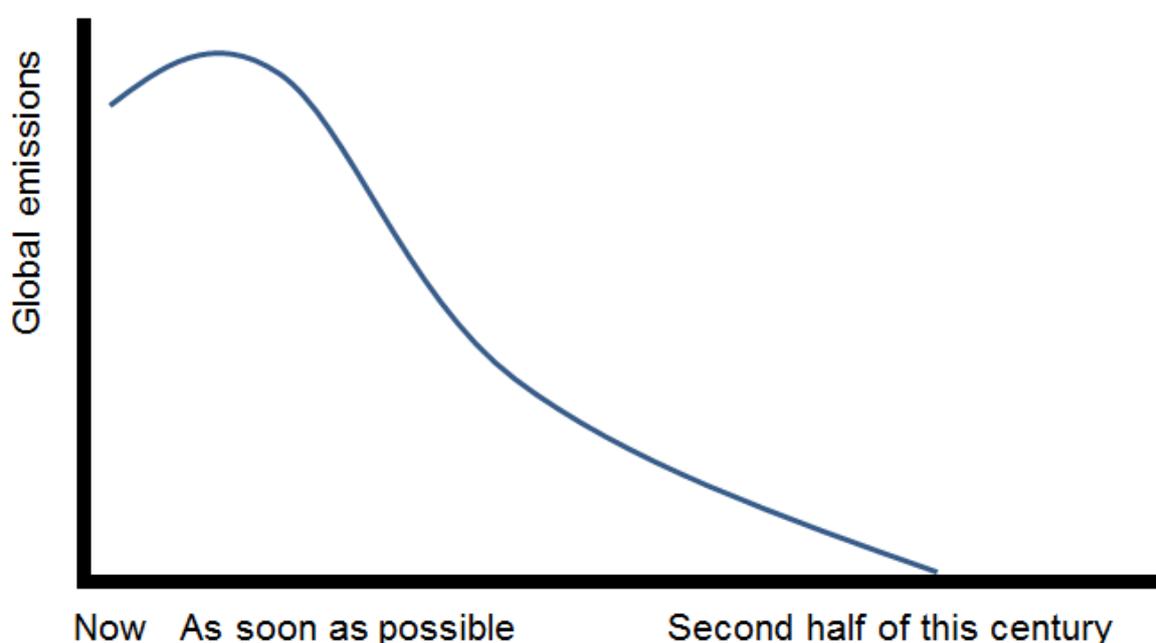


Figure 1: Emissions pathway aimed for in the Paris Agreement (own diagram)

7 The Paris Agreement itself does not quantify when global peaking should occur, at what level the annual emissions should peak or how fast emissions should decline after the peak. However, it can in principle be quantified by setting a global emissions pathway, i.e. a time-dependent level of emissions.

8 A quantification of a global emissions pathway that is commensurate with the Paris Agreement temperature goal is the so-called RCP2.6 scenario developed for the IPCC prior to the adoption of the Paris Agreement (RCP is short for Representative Concentration Pathway and the figure stands for the radiative forcing in  $W/m^2$  in 2100 that will cause the warming of the atmosphere). There are other RCPs but only RCP2.6 is likely to keep the global average temperature increase to below  $2^{\circ}C$  as the mean projected temperature increase is  $1.6^{\circ}C$  in 2100. RCP2.6 is not policy prescriptive; it shows a way in which the goal of the Paris Agreement can be achieved.

9 In RCP2.6,  $CO_2$  emissions will start to decline shortly after 2020 and become negative in the second half of the century (see figure 2). One of the reasons why  $CO_2$  emissions will have to become negative is because emissions of some other GHGs cannot technically be reduced to zero.

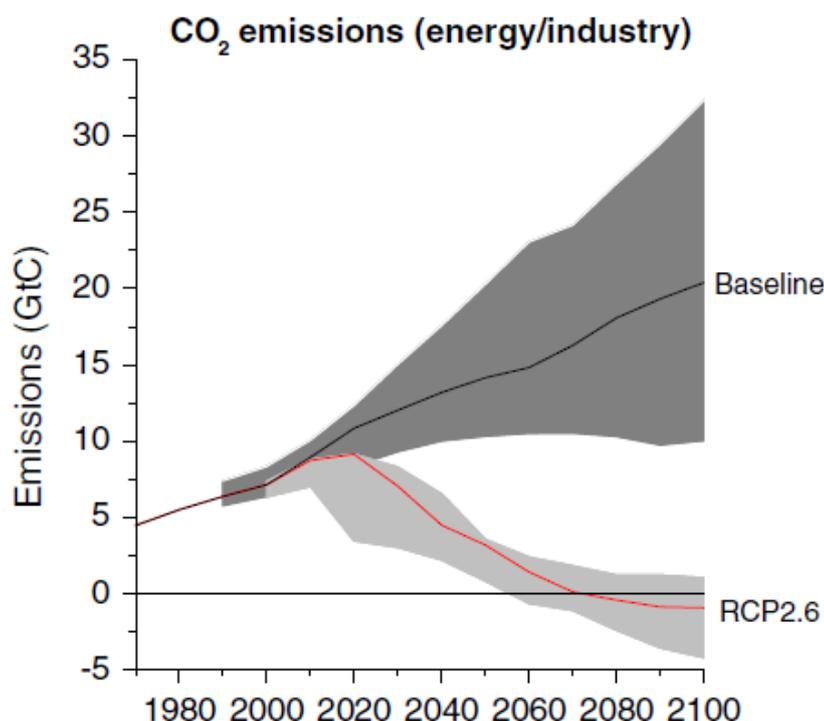


Figure 2: Global emissions pathway RCP2.6. Source: Van Vuuren et al. 2017

10 It should be noted that RCP2.6 is a global emissions pathway which does not differentiate between countries or sectors.

#### Level of ambition in the IMO Strategy on reduction of GHG emissions from ships

11 The co-sponsors of this document are of the opinion that a global level of ambition is an essential element of the Initial Strategy. Without a clearly defined global level of ambition, it is not possible to assess whether the development of GHG emissions is in line with the IMO Strategy. Moreover, the level of ambition can provide a basis for the selection of short-, mid- and long-term further measures.

12 Because of the international nature of the shipping sector, global rather than regional or national emission pathways are required. Regional or national emission pathways could lead to a myriad of policy instruments that would increase the complexity and the administrative burden and reduce the incentive for emissions abatement and the rewards for innovation. Without a global level of ambition, policy instruments could result in a distortion of the competitive market and a loss of climate effectiveness.

13 Hence, a global level of ambition for shipping will need to be defined for the Initial IMO GHG Strategy.

### **The interaction between IMO and UNFCCC levels of ambition**

14 Parties to the Paris Agreement implement it through nationally determined contributions (NDCs), which describe the contribution they will make towards achieving the overall objectives of the Agreement. The contribution can be an economy-wide absolute emission reduction target, a target for the emissions intensity of an economy, a reduction target relative to a business as usual baseline or another kind of mitigation effort. NDCs will be regularly updated and strengthened. Emissions of international shipping have not been included in NDCs.

15 Since the Paris Agreement aims to reduce global emissions, i.e. both emissions included in NDCs and those not included, NDCs and shipping emissions are interrelated. Any pathway for shipping that differs from the global pathway would change the effort required of countries or other sectors. Of course, there may be valid reasons to deviate from the global emissions pathway, e.g. because of considerations of sustainable development, early action, abatement costs, and technical opportunities, but it should be kept in mind that this would require a redistribution of the global effort in order to reach the temperature goal of the Paris Agreement.

16 Although the shipping emissions pathway does not necessarily have to mimic the global pathway as described in the Paris Agreement, it should contain two elements of it in order to be able to contribute to the global temperature goal:

- .1 emissions have to start declining soon; and
- .2 in the second half of the century, emissions have to decline towards zero.

The reasons are that gradual adjustments are less costly than sudden reductions and that a long-term goal provides clear investment, research and development aims.

17 The sponsors of this submission agree that shipping should contribute to emissions reductions in line with the temperature goal of the Paris Agreement, which means that the cumulative emissions should not exceed a certain share of the cumulative global emissions under the emissions pathway.

18 Several proposals have been made in the literature with regard to the principles on the basis of which the emissions of shipping could be determined in relation to the global emissions pathway, including Smith et al. 2016; Cames et al. 2015; Bows-Larkin 2015; ICS 2016, as follows:

- .1 proportionate to the current share of emissions;
- .2 proportionate to the emission reduction effort of other sectors;
- .3 proportionate to the emission reduction effort of all or a set of countries; or

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- .4 higher or lower than any of the above based on an analysis that it is easier, cheaper, more costly or harder for the shipping sector to reduce emissions, and presuming that the deviation from the shipping sector is balanced by other sectors or NDCs.

19 Whichever option is chosen, further work will have to be done to provide a quantitative parameterization for an emissions pathway for international shipping. This can take into account:

- .1 business as usual emission projections, e.g. from the Third IMO GHG Study 2014; and
- .2 analyses of emission reduction opportunities and associated costs and benefits.

20 An emissions pathway in which emissions will start declining sooner rather than later will have technological and operational consequences for shipping. More efficient ship designs and improvements for existing ships will be required. The operational efficiency will have to be improved, e.g. by slow steaming or improvements of logistical chains. In addition, there may be a need for increased use of sustainable low carbon fuels. Many of these developments require technological development which may take time to complete. Inclusion of a pathway in the Initial IMO Strategy will help guide this development.

## Conclusion

21 In order to contribute to the objectives of the Paris Agreement, a global emissions pathway is needed for international shipping in which emissions start declining as soon as possible and reduce towards zero in the second half of this century. Furthermore, a quantified pathway is a necessary element of the Initial IMO Strategy because it allows an evaluation of the development of emissions as well as an assessment of the short-, mid- and long-term measures relative to the global level of ambition.

## Action requested of the Working Group

22 The Working Group is invited to consider the information provided above and take action as follows:

- .1 agree that a quantified global emissions pathway for shipping should be set as the level of ambition of the Initial IMO Strategy and in line with the Paris Agreement;
  - .2 agree on the general shape of the emissions pathway: emissions should start declining as soon as possible and reduce towards zero in the second half of this century, with a view to agreeing on the quantification of the pathway at MEPC 72; and
  - .3 invite submissions on the quantification of emission pathways to the next meeting of the Intersessional Working Group on Reduction of GHG Emissions from Ships.
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