

CO2 emission reduction targets for international shipping - Considerations

The 59th session of Marine Environment Protection Committee (MEPC59) agreed a work plan for further consideration of market-based measures in July and the topics of reduction levels for potential market-based measures should be revisited at MEPC60 in March 2010. Before MEPC60, the 15th session of Conference of Parties (COP15) of UNFCCC will meet in Copenhagen in December and the target for reducing CO2 emission from the international shipping is on the agenda. We, the Japanese Shipowners' Association, are very much concerned to the decision at COP15.

1) Risk of top-down target setting

Four options were proposed in the negotiating text of COP15 (FCCC/AW GL CA/2009/INF.1 as shown in Appendix 1).

Option 1 is that UNFCCC sets qualitative targets for the international shipping in general description, such as GHG emission reduction from ships should be at least as ambitious as other sectors, and orders IMO to set specific targets and develop the mechanism.

Option 2 is that UNFCCC itself sets specific, numerical targets for international shipping and orders IMO to develop the mechanism.

Option 3 is a repeat of the existing Kyoto Protocol, i.e. the international shipping remains outside of the protocol.

Option 4 is that UNFCCC itself should negotiate new convention for the international shipping, i.e. UNFCCC itself sets specific targets and its measures for the international shipping.

Text of Option 2 says "Global reduction targets for such emissions from aviation and marine bunker fuels shall be set as equal to, respectively, {X per cent} and {Y per cent} below {year XXXX} levels in the commitment period {20XX to 20XX}." Text of Option 4 is similar to Option 2.

Option 2 was proposed by EU. "X", "Y" and "20XX" shall be decided to complete the text at the meeting of the Ministers of Environment in EU countries in the end of October, however, European Commission proposed that the target for the international shipping should be below 2005 level by

2020 and significantly below 1990 levels by 2050. CO2 emission from the international shipping was 795 million tons in 2005 and 468 million tons in 1990.

We studied financial impacts on the international shipping if such a capping was imposed. It is shown in page 7, Appendix 2.

This study is based on IPCC scenario and IMO-GHG-Study.

3rd column from the right, BAU (business as usual), indicates the predictions of CO2 emission from the international shipping if the efficiency of ships were not improved. On A1B scenario (high growth scenario, balance of fossil/non-fossil energy. 3.3% growth rate of seaborne trade), CO2 emission would be 1.3 billion tons in 2020 and 4.8 billion tons in 2050. On B2 scenario (regional integration scenario. 2.1% growth rate of seaborne trade), CO2 emission would be 1.1 billion tons in 2020 and 3.0 billion tons in 2050. Again, this is the case if no improvements of ships efficiency.

We conducted detailed case studies on the prospect of energy efficiency improvements for new ships, i.e. how much improvement can be possible by when. The effects of modifying principal particulars of ships and utilizing new technologies were taken into consideration. Also the cost of new technologies was concerned. The result was shown in Appendix 3 on page 8. We understand this prospect is quite ambitious and utmost efforts of the shipping industry are required to achieve it.

In case that efficiency improvements for new ships in Appendix 3 are achieved in addition to a 15% speed reduction for container ships and a 10% speed reduction for other ships, CO2 emission could be reduced by about 50% as shown in 4th column in Appendix 2, i.e. on A1B scenario 1.1 billion tons in 2020 and 2.4 billion tons in 2050, and on B2 scenario 0.9 billion tons in 2020 and 1.5 billion tons in 2050.

The capping proposed by European Commission is below 795 million tons by 2020 and 468 million tons by 2050 as shown in 5th column in Appendix 2.

Then, the shipping industry shall be obliged to purchase 143 ~ 278 million tons of emission credits from other sectors in 2020, and 1.0 ~ 1.9 billion tons of credits in 2050. It is hard to predict price of the credits, however, if it

were in the range of US\$ 50 ~ 100 per CO2 ton, the shipping industry would have to pay US\$ 7 ~ 28 billion in 2020, and US\$ 51 ~ 190 billion in 2050. No matter what you achieved utmost improvement of ships efficiency, and the improvement is much higher than other sectors, shipping companies still have to buy emission credits from other sectors.

2) Flexible and practical approach of target setting

We, the Japanese Shipowners' Association, would like to propose flexible and practical approach of target setting as shown in Appendix 4 on page 8.

First, we draw emission curve on business as usual. Then we consider the target levels of efficiency improvement that are technically and operationally achievable, and develop the total CO2 emission curves based on the efficiency targets, taking into account of different scenarios for economic growth. This methodology is in line with IMO's nine fundamental principles for future GHG reduction from ships, in particular, environmentally sustainable without negative impact on global trade and growth.

The amount of CO2 emission is determined by the level of activity and its efficiency. In order to reduce CO2 emission, regulatory framework should be aiming to reduction of the activity and/or improvement of its efficiency.

The activities of land industries in developed countries are stable and predictable. In addition, the activities are restrained by being imposed a CO2 cap. Therefore, the volume of imports and exports of developed countries is already controlled. Even without capping on the level of activities of the shipping, total amount of CO2 emission from the trade of developed countries will decrease substantially as long as regulatory framework aiming to efficiency improvement works well.

Future demand of seaborne transportation will be expanded according to economic growth in developing countries. Imposing capping on the activities of the international shipping to control the supply will result in restraint on economic growth of developing countries. This is against principles of UNFCCC who do not apply national quota of CO2 emission to developing countries in order to support their take-off. The shipping industry should help their environmentally sustainable development by

improvement of ship's efficiency, instead of capping on CO2 emission from the international shipping as if the shipping sector were one of developed countries.

IMO need to agree mandatory measures to address GHG emissions from the international shipping as soon as possible, otherwise solutions will be forced by someone else. It is not time to discuss the issue which developing countries never agree to.

3) Conclusion

We oppose option 2 and option 4 which propose the specific targets for the shipping shall be set at the Copenhagen Conference in a hasty manner as a result of political consideration. The Copenhagen Conference should continue entrusting IMO with the regulation of shipping. It was imperative to involve the Ministers of your countries that attend the Copenhagen Conference.

The shipping is the most environment-friendly mode of transportation, however, there is high potential of the efficiency improvement of ships and the industry is required to do their utmost efforts to improve the efficiency. Regulatory framework for the international shipping should encourage the industry to do their best in the context of "the efforts and achievement are well rewarded" for environmentally sustainable development, instead of penalizing the industry by forcing us to purchase emission credits from other sectors.

Annex**Revised negotiating text (Extract)****III. Enhanced action on mitigation****D. Cooperative sectoral approaches and sector-specific actions¹***International bunker fuels*

135. [All sectors of the economy [, in particular those of Annex I Parties,] should contribute to limiting emissions, including international maritime shipping and aviation. [Multilateral collaborative action would be the most appropriate means to address emissions from international aviation and the maritime transport sector, the International Civil Aviation Organization and the International Maritime Organization dealing with this issue should prevent the adoption of trade restrictions and take into account the special economic conditions of developing countries and the principles of equity and of common but differentiated responsibilities and capabilities.] [Global][Sectoral approaches could address emissions that cannot be attributed to any particular economy, and multilateral collaborative action by all Parties would be the most appropriate means to address emissions from international aviation and the maritime transport sector.]]

Alternative to paragraph 135:

[Those developed country Parties that are not Parties to the Kyoto Protocol shall undertake measures within the context of their national appropriate mitigation commitments to reduce emissions from international aviation and international maritime transport.

Developing country Parties may undertake actions to reduce emissions from international aviation and international maritime transport within the context of nationally appropriate mitigation actions.]

136. [Option 1]

The International Maritime Organization shall be encouraged to continue without delay its activities for the development of policies and measures to reduce GHG emissions, and specifically:

(a) [To achieve, through the use of its policies and mechanisms, total GHG emission reductions which are at least as ambitious as the total GHG emission reductions under the Convention;]

[To establish an ambitious global goal for the reduction or limitation of greenhouse gas emissions from ships to be achieved through the implementation of its policies and measures.]

(b) To report regularly to the COP {and its subsidiary bodies as appropriate} on relevant activities, emission estimates and achievements in this respect;

(c) To report to the COP {at its seventeenth session} on policies, established measures, measures under development, and expected emission reductions resulting from these measures.]

Alternative to paragraph 136 [in the form of a draft decision by the COP]:

[Reduction of greenhouse gas emissions from international shipping

The Conference of the Parties,

[Being aware of the role of the IMO established in the IMO Convention, the UN Charter and UNCLOS....]

Recognizing that in order to achieve a necessary two degree scenario, global greenhouse gas emissions should follow a pathway that includes a peak year no later than 2015 and results in emission reductions of 50- 85per cent by 2050, in accordance with findings in the 4th Assessment Report of the IPCC,

Welcomes the report presented by the Secretary General of the International Maritime Organization (IMO) on policies and activities related to reduction of Greenhouse Gas Emissions from international shipping,

¹ The Bali Action Plan, in its paragraph 1 (b) (iv), calls for the consideration of enhanced national/international action on mitigation of climate change, including, inter alia, cooperative sectoral approaches and sector-specific actions, in order to enhance implementation of Article 4, paragraph 1(c), of the Convention.

FCCC/AWGLCA/2009/INF.1

Recognizing the role of the International Maritime Organization in developing global actions to limit or reduce greenhouse gas (GHG) emissions from international shipping,

Recognizing further that the IMO has undertaken a comprehensive assessment of the total greenhouse gas emissions from international shipping, and that these emissions constitutes a significant share of the global anthropogenic emissions,

Recognizing the need to develop a long-term goal as well as intermediate targets for emission reductions from the maritime sector, in order to facilitate transformation to a low carbon economy,

Being aware that the IMO activity has identified technical and operational measures which can contribute significantly to emission reductions,

Encourages the IMO to continue without delay the ongoing activities to develop policies and measures to reduce GHG emissions, and in doing so invites the IMO to:

1. achieve, through the use of its policies and mechanisms, total GHG emission reductions which are at least as ambitious as the total GHG reductions to be achieved by the UNFCCC Copenhagen agreement,
2. report regularly to COP [and its subsidiary bodies as appropriate] on relevant activities, emission estimates and achievements in this respect, and especially
3. report to COP [17] on IMO policies, established measures, measures under development, and expected emission reductions resulting from these measures, and

Requests the Secretariat of the UNFCCC to continue co-operating with the Secretariat of the International Maritime Organization.]

137. Option 2

Parties shall take the necessary action to reduce emissions of GHGs not controlled by the Montreal Protocol from aviation and marine bunker fuels.

[Global reduction targets for such emissions from aviation and marine bunker fuels shall be set as equal to, respectively, {X per cent} and {Y per cent} below {year XXXX} levels in the commitment period {20XX to 20XX}. Units from existing and potential new flexibility mechanisms may contribute towards achieving these targets.]

Parties shall work through the International Civil Aviation Organization and the International Maritime Organization to enable effective international agreements to achieve these targets to be approved by 2011. Such agreements should not lead to competitive distortions or carbon leakage. Parties shall assess progress in the implementation of this work, and take action to advance it, as appropriate.]

138. Option 3

[Taking into account the interests of developing countries,][All Parties][Developed country Parties][Parties][Annex I Parties] shall pursue limitation or reduction of emissions of GHGs not controlled by the Montreal Protocol from aviation and marine bunker fuels, working through the International Civil Aviation Organization and the International Maritime Organization, respectively.]

138.1 Option 4

[The Parties should pursue a collective reduction of [X per cent] below [year XXXX] for emissions of anthropogenic greenhouse gases not controlled by the Montreal Protocol from international aviation bunker fuels and [Y per cent] below [year XXXX] levels for emissions of anthropogenic greenhouse gases not controlled by the Montreal Protocol from international marine bunker fuels in the commitment period [20XX to 20XX].]

The Parties should commence negotiations on two global sectoral agreements to address, respectively, international aviation and maritime emissions in 2010 with a view to concluding by COP-17 in 2011, taking into account work already done in ICAO and IMO.

Appendix 2 : Outward Flow from the International Shipping

	Scenario	CO2 emission from the international shipping		Capping proposed by EC ***	Emission Credits to be purchased	Outward flow from the international shipping to other sectors (U\$/CO2 ton)	
		BAU **	With all possible reduction measures **			U\$ 50	U\$ 100
		Mill ton	Mill ton				
2020	A1B	1,260	1,073	795	278	U\$ 14 bill	U\$ 28 bill
	B2	1,100	938	795	143	U\$ 7 bill	U\$ 14 bill
2050	A1B	4,817	2,363	468	1,895	U\$ 95 bill	U\$ 190 bill
	B2	2,957	1,486	468	1,018	U\$ 51 bill	U\$ 102 bill

Remarks : IMO-GHG-Study estimates that CO2 emission in 2050 is 2,681 Mt in case of business as usual on A1B scenario, where 44% of market-driven improvement of ships efficiency is already included.

Sources : ** MEPC59/4/35, *** MEPC 59 INF. 10

Appendix 3 : Potential Improvements of Ship’s Efficiency for New Ships

Delivery	2015-2019	2020-2024	2025-2029	2030-2034	2035-2039
Bulker	25%	40%	45%	50%	50%
Tanker	35%	40%	55%	55%	55%
VLCC	40%	50%	60%	60%	60%
Container	35%	45%	55%	65%	70%

Source : MEPC59/4/35

Appendix 4 : Flexible and Practical Approach of Target Setting

