

HELCOM RECOMMENDATION 28E/13

Adopted 15 November 2007
having regard to Article 20, Paragraph 1 b) and Annex II
of the Helsinki Convention

INTRODUCING ECONOMIC INCENTIVES AS A COMPLEMENT TO EXISTING REGULATIONS TO REDUCE EMISSIONS FROM SHIPS

THE COMMISSION,

BEING AWARE that pollution from shipping has negative impacts on the sensitive marine environment of the Baltic Sea,

ACKNOWLEDGING that, although there has been general substantial progress achieved in improving the protection of the marine environment of the Baltic Sea and in reducing the airborne emissions from shipping in particular, there is still a need for further emission reduction,

ACKNOWLEDGING the importance of a review of Annex VI to MARPOL 73/78 and other international measures to reduce emissions from ships,

STRESSING the need for introducing new and effective solutions to curb emissions from shipping,

RECOGNISING the need to evaluate and implement additional alternatives to the existing regulatory measures to reduce emissions from shipping,

RECALLING Annex II to the Helsinki Convention **AND NOTING** that the promotion and use of Best Environmental Practice and Best Available Technology can be triggered by the application of economic instruments to activities, products and emissions in the Baltic Sea Area and may constitute an effective means to reduce emissions from shipping,

NOTING FURTHER that economic incentives can serve as complements to regulatory measures and thereby may lead to a larger reduction of pollution compared to that achieved by traditional regulations and can stimulate technological improvements and innovations as well as achievement of environmental results at lower costs,

BEING CONVINCED that sub-regional co-operation is of crucial importance also when the desire is to effectively use economic instruments,

RECOMMENDS that the Contracting Parties investigate and, when appropriate, introduce feasible and effective economic instruments as a possible complement to existing regulations to further reduce air pollution from shipping,

RECOMMENDS FURTHER that the Contracting Parties take into consideration the attached **Guidelines** when introducing economic incentives schemes to reduce emissions from ships.

Guidelines for introducing economic incentive schemes as a possible complement to existing regulations to reduce emissions from ships in the Baltic Sea Area

These guidelines are intended to give advice to the Contracting Parties to the Helsinki Convention to introduce incentive schemes to reduce air pollution from ships calling upon Baltic Sea ports.

1. Introduction

The shipping sector is not regulated as extensively as land-based sources and, as a result, in contrast to the expected progress in reducing emissions from land-based sources, shipping emissions of NO_x and SO_x are expected to continue to increase. Due to the international nature of shipping, the measures adopted at the national or regional level can only have limited impact on emissions from shipping in the specific region. All Contracting States must therefore take active part in global actions initiated within the IMO to substantially reduce emissions from ships. These measures form the international baseline upon which there often is room for regions or nations to introduce non-discriminatory economic incentives to further reduce pollution from ships within their jurisdiction.

2. Definitions of Economic Incentives

Economic incentives defined broadly are instruments that use financial means to motivate actors to reduce health and environmental risks posed by their facilities, processes, or products. These incentives provide monetary rewards for those polluting less and impose costs of various types for those polluting more, thus supplying the necessary motivation of change to polluters. This approach provides an opportunity to address sources of pollution at an overall cost that is lower than traditional forms of regulation as well as providing a reason for polluters to improve in addition to existing regulatory requirements.

3. Existing financial instruments

Economic instruments to encourage environmentally friendly or quality shipping have been introduced in some countries and ports around the world to encourage ship owners to reduce their atmospheric emissions. These include differentiated port and fairway dues, differentiated taxation of marine fuels and differentiated tonnage taxes. However, those measures when taken only on a national level might have a limited effect on the overall emissions from shipping. To achieve a substantial emission reduction, a much broader incentive scheme, a common Baltic or European system of economic incentives, is needed. The system should be flexible in order to permit national and local differences to be catered for. However, it does not need to be necessarily restricted by the peculiarities of Contracting States' national institutional arrangements concerning shipping dues. Environmentally differentiated fairway dues or other incentive schemes limited to ships calling at Baltic Sea ports can be introduced without conflict to the right of innocent passage provided by 1982 United Nations Convention on the Law of the Seas (Article 26).

4. Proposed financial structure for introducing economic incentives

All countries around the Baltic Sea have some kind of financial system that enables provision of services to shipping, infrastructure investments, dredging, lighthouse and fairway maintenance, icebreaking, hydrological surveys, etc. Taking into consideration the diversity of financial systems applied in the Baltic Sea countries and to allow some flexibility in introducing economic incentives, this proposal allows the Contracting Parties to consider the introduction of economic incentives to reduce emissions from shipping in addition to local financial systems. There are three options for introducing economic incentives that Contracting Parties may choose between:

- to introduce a system of environmentally differentiated fairway dues;
- to modify an existing charging system to allow environmental differentiation of dues;
- to add an emission fee with subsequent differentiation on top of their present system.

There are, however, some requirements that should be followed regardless of which incentive scheme is considered or subject to be implemented. An incentive scheme should have the following prerequisites:

- It should offer the best possible protection of the environment;
- It should cover all important aspects (management, design/equipment, ship operation);
- Emission charges are suitable for ships of all flags, 400 GT and above, visiting Baltic ports;
- The system should be reliable and easy to implement;
- Evidence of compliance should be simple;
- Expenses for the operators of the system should be low.

It is important that the level of charge is accurately set. This would create a zero-sum game for the industry as a whole. Since ferry traffic is responsible for mainstream emissions in ports* these ships would need to be actively involved in the incentives schemes. The dues levied per unit of the vessel's gross tonnage might be differentiated with the introduction of lower levels for passenger vessels and cruise liners if so desired. When introducing an incentive scheme, the following measures should be considered:

- to establish levels for NOx and SOx emissions (or to lower the existing ones) based on which rebate schemes for NOx and SOx will be developed;
- to decide a minimum fee based on gross tonnage or installed engine power (might differ for different categories of ships);
- to decide on number of calls subject to dues (for instance, five calls per calendar month for Ro/Pax and passenger ferries and two calls for other vessels);
- to consider a revenue-neutrality resulting in higher dues for more polluting ships and rebates for ships that invest in emission abatement technologies depending on achieved results.

The following rebate schemes for reducing NOx and SOx emissions might be used.

Nitrogen oxide discount

The Contracting Parties might consider an entrance reduction limit for discounts as 10 g per kWh. The scale extends below 0.5 g/kWh. The lowest limit set up to 0.5 g/kWh would provide a stronger incentive to include auxiliary engines in measures to cut NOx emissions. The table below constitutes an example of how the dues after discount per unit of the vessel's gross tonnage could be applied.

Emission level, gram NOx/kWh	Ro-Pax and passenger vessels, €	Cruise vessels, €	Oil tankers, €	Other vessels, €
0 – 0.50	0.064	0.042	0.107	0.096
0.51 – 1.00	0.075	0.053	0.118	0.107
1.01 – 2.00	0.096	0.059	0.139	0.123
2.01 – 3.00	0.116	0.064	0.159	0.142
3.01 – 4.00	0.125	0.069	0.168	0.152
4.01 – 5.00	0.135	0.075	0.178	0.162
5.01 – 6.00	0.145	0.080	0.188	0.172
6.01 – 7.00	0.154	0.085	0.197	0.182
7.01 – 8.00	0.164	0.091	0.207	0.191
8.01 – 9.00	0.174	0.096	0.217	0.20
9.01- 10.00	0.183	0.102	0.226	0.21
10.01 -	0.193	0.107	0.236	0.22

* Ferry and Ro-Ro traffic is responsible for about 75 % of energy consumption of ships calling upon Swedish ports

Monitoring, reporting and control

Currently it is not possible to continuously measure the exact amount of different pollutants being emitted from individual ships. Until the monitoring technologies are developed and available, emissions will have to be estimated. The calculation can make use of data on the amount of NO_x and SO_x that is released by vessel's main engines for each kilowatt-hour at 75% of utilised engine capacity.

MARPOL Annex VI sets limits on emissions of NO_x from diesel engines. The NO_x Technical Code stipulates how this shall be done. The method in the Code can also be used to establish emission levels below the mandatory value.

Measurements of the emission levels from individual vessels shall be conducted by an accredited control laboratory (authorised authority) according to ISO 8178 and the provisions of the NO_x Technical Code. The laboratory issues a survey report and a NO_x attestation. The Maritime Administration or the recognised organisation (classification society) acting on behalf of that Administration issues the NO_x Certificate. Certificates issued by the Administration of a Contracting State shall be recognised by another Contracting State.

The survey report shall specify which measures are taken onboard the ship to continuously reduce NO_x emissions as well as information on how the monitoring and verification shall proceed.

NO_x certificate

Based on the conducted survey report that shows that the abatement technology is installed and that the calculated weighted emission of NO_x is less than 10 g/kWh, the accredited laboratory may issue a NO_x reduction attestation. This attestation shall demonstrate the NO_x emission level measured and adjusted for ambient factors and recalculated to nitrogen dioxide (NO₂/kWh) in grams with two decimals at 75% power output and steady-state running conditions for main engines (ME) and 50% for auxiliary engines (AE).

Sulphur-related dues and discount

According to Directive 1999/32/EG relating to a reduction in the sulphur content of certain liquid fuels or marine gas oil (MGO) may not be used in EU territorial waters if their sulphur content exceeds 0.2%. Directive 2005/33/EC amending the Directive 1999/32/EG requires from 1 January 2010 a maximum limit of 0.1% sulphur by weight for marine fuels used by inland waterways vessels and ships at berth in Community ports. The directive does not cover heavy fuel oil (HFO) or the fuel in the bunker tanks of ships passing the border between EU and non-EU countries. The economic incentives (environmental differentiation of fairway or other dues aimed at providing an incentive for vessels to use low-sulphur bunker fuel oil) must now be adjusted to prevailing rules. Although most vessels that utilise marine fuel covered by the directive are obliged to use bunker fuel oil with a sulphur content less than 0.2 percent by weight, these vessels should be given a certain discount, as there might otherwise be a risk for their switch to HFO. Moreover, a certain stimulus should be given to vessels not covered by the directive.

The table below shows an example of the sulphur-related dues calculated per unit of the vessel's gross tonnage that might be introduced for all types of ships.

Sulphur content, percent by weight	Ro-Pax and passenger vessels, €	Other vessels, €
0 – 0.2	0	0
0.21 – 0.5	0.032	0.021
0.51 – 1.0	0.064	0.042
1.01 -	0.064	0.064

The significance of passenger vessels in curbing sulphur emissions to the atmosphere corresponds to the difference in the incentive structure vis-à-vis other vessels, as shown in the table.

SOx emissions, Sulphur attestations and certificates for abatement technology

The emission of sulphur from ships is proportional to the sulphur content of the bunker fuel oil if no abatement technologies are applied. According to MARPOL Annex VI, ships have to carry a Bunker Delivery Note (BDN), which provides information on the sulphur content of the fuel. In order to be qualified for deduction, the ship owner has to fill in a sulphur attestation stating the continuous operation on low-sulphur fuel verified by BDN and samples.

If an abatement technology to reduce emissions of SO_x is applied, the Maritime Administration or recognised organisation acting on behalf of that Administration shall conduct a survey report specifying which measures are taken onboard the ship to continuously reduce SO_x emissions. The survey report shall also contain information on how the monitoring, control and verification shall proceed. If the installation is approved, the Maritime Administration will issue a certificate. Certificates issued by the Administration of a Contracting State shall be recognised by another Contracting State.