FINLAND

Proposal on navigation in ice conditions in the context of emissions trading

This paper presents a proposal how to take into account sailing in ice conditions in emissions trading for maritime transport. The aim of the proposed method is to **establish a level playing field between ships that navigate in ice conditions and other ships while ensuring that the emissions trading continues to steer all ships, including ice-classed ships to reduce emissions**. Thus, the proposal addresses solely the extra emissions produced due to the specific requirements for ships belonging to the Finnish-Swedish ice classes IA and IA Super or equivalent ice classes and the extra engine power required for safe navigation in ice conditions.

The paper contains the following sections:

Brief description of the proposal

We propose the directive to include **a flag-neutral, permanently applied method to take into account additional emissions related to navigation in ice conditions and additional emissions of ice-classed ships when sailing in open water.** This proposal applies to the ice-classed ships, which belong to the merchant fleet. To ensure safe navigation in ice conditions, the winter navigation system in the Baltic Sea area requires that ships entering the ports have a certain ice class. The proposal does not address ice breakers as ice breakers are not included in the scope of the Commission's proposal.

The aim of the method is to readjust the amount of allowances surrendered by regulated entities (shipping companies) with ice-classed ships belonging to the highest ice classes (Finnish-Swedish ice class IA or IA Super or equivalent) and ice-classed ships sailing in ice conditions. The amount of allowances surrendered are proposed to be **readjusted to a level that corresponds to the emissions from an otherwise similar, non-ice classed ship that sails in open water only**. Thus the shipping companies would continue to be required to purchase emission allowances for all their voyages.

The regulated entities would be obliged to report all their emissions, but surrender emission allowances for the adjusted amount of emissions. This method would ensure within the emissions trading scheme a level playing field for ice-classed ships/ships sailing in ice conditions and ships designed to sail only in open water. Those emissions allowances that are not required to be surrendered due to sailing in ice conditions, would be cancelled. This is in line with the procedures to be applied according to the Commission's proposal for the years 2023-2026 when emissions trading is gradually introduced in maritime transport.

The method to calculate the readjusted amount of allowances that need to be surrendered is based on two elements:

1. The additional fuel consumption of ice-classed ships, when sailing in ice conditions, to be taken into account in the ETS for maritime transport by **deducting the additional emissions caused by sailing in ice conditions**, from the total emissions of these voyages. This would allow to take into account the large variation in ice conditions between years and routes that ships sailing in ice conditions meet.[1]
2. Due to technical reasons (design of the ship), **a constantly applicable 5% reduction of the annual emissions from voyages** of a ship belonging to the highest Finnish-Swedish **ice classes IA or IA Super or equivalent ice classes[2]** to take into account the additional fuel consumption of ice-classed ships, on average, compared to ships designed to sail only in open water. This proposal is based on information provided in Annex 3.

The regulated entities should provide the required data in case they wish to benefit from this method. **The existing MRV regulation gives a basis for providing the required data. In addition, the EC proposal includes a provision to empower the Commission to adopt delegated acts to amend Annexes I and II of the MRV Regulation** with the aim to take into account the revision of the emissions trading directive. This provision[3] can be used to address technical details.

Some changes may be required in the Commission Implementing Regulation (EU) 2016/1927 on templates for monitoring plans, emissions reports and documents of compliance pursuant to Regulation (EU) 2015/757 of the European Parliament and of the Council on monitoring, reporting and verification of carbon dioxide emissions from maritime transport.

The specific requirements for ice classed ships should be taken into account in the emissions trading to be in line with the international regulation on maritime transport. In the IMO context, the technical properties of ice classed ships are taken into account in the regulations concerning the technical energy efficiency (EEDI) of new ships, see resolution MEPC.308(73) and also in the regulations concerning the technical energy efficiency of existing ships (EEXI), see resolution MEPC.328(76). Correction factors due to technical reasons are also planned for the approved regulation on carbon intensity, for further details see MEPC 76/7/4 and MEPC 76/7/5. In addition, Estonia, Finland, the Russian Federation and Sweden and have also submitted a paper to the IMO on taking into account the voyages in ice conditions in the approved regulation on carbon intensity (CII), see MEPC 76/7/21 and MEPC 76/INF.67.

Inclusion of specific methods to take into account sailing in ice conditions in several policy measures does not in general lead to inappropriate overlapping impacts. Ice

[1] If validation of claimed actual sailing in ice conditions is needed, this should be based on Baltic states METOCEAN published ice charts (SMHI (Swedish Meterological and Hydrological Institute, FMI Finnish Meteorological Institute, etc.)

[2] For further information on approximate correspondence between ice classes, see HELCOM Recommendation 25/7, see www.helcom.fi

[3] Article 3 of the Commission's proposal that amending Article 5 paragraph 2 of the MRV Regulation: "in Article 5, paragraph 2 is replaced by the following: "2. The Commission is empowered to adopt delegated acts in accordance with Article 23 to amend the methods set out in Annex I and the rules set out in Annex II, in order to take into account revisions of Directive 2003/87/EC, relevant international rules as well as international and European standards."

class ships and sailing in ice conditions increases the costs of several types of emission reduction measures and the combined costs will further deteriorate the level playing field. This applies also for the policy measures of the Fit for 55 package.

The Commission's impact assessment estimates that impacts of applying emissions trading to maritime transport are negligible to the economy. However, the economic impacts are not modelled either on the member state or sea area level, which leaves regional differences uncovered.

Reasoning - why do we need a specific approach to sailing in ice conditions?

Emissions trading will increase the existing cost difference in maritime transport

Fuel consumption of ice-classed ships is higher than fuel consumption of ships of similar size designed for sailing in open water only and, consequently, they produce more CO_2 emissions. It is also worth of noting that ice-classed ships produce more emissions both in open water and when navigating in ice conditions. More engine power is required to navigate in ice conditions. Ice-classed ships produce more emission also in open water, because their design is not optimized for sailing in open water but is adjusted for navigation in ice.

For the above mentioned reasons, **winter navigation increases the costs of maritime transport especially in the northern parts of the Baltic Sea wherein ships need to be constructed to ensure safe navigation in ice conditions**. The costs of navigation in ice conditions decrease the competitiveness of the countries that are dependent on maritime transport, especially during the ice covered period. The impact is the highest for those parts of the shipping routes, which have prevailing ice conditions for several winter months, e.g. Bay of Bothnia, eastern Gulf of Finland and Gulf of Riga.

Navigation in ice conditions increases the fuel costs and capital cost that are ship's two most significant cost components. For example, fuel costs constituted 40–67% for all ships engaged in Finland's foreign trade[4]. In addition, sailing in ice conditions increases system costs that include for example costs associated with investment and operational costs of ice breakers.

The difference in costs of maritime transport within the EU will be further increased by the planned introduction of emissions trading for maritime transport, unless a level playing field will be specifically guaranteed between the ice classed and other ships.

More information about the capital and system costs associated with ice classed ships and sailing in ice conditions is provided in Annex 4.

Additional fuel use and costs of emissions trading

The additional costs that winter navigation causes in emissions trading are directly proportional to the increase in the use of fuel. As explained above, both the design of the ice class vessel and navigating in ice increase the fuel use.

[4] The Finnish Transport Infrastructure Agency 2019. The unit costs of vessel traffic 2018

Additional fuel use caused by sailing in ice conditions

The ice coverage varies in the Baltic Sea area, implying that the Northern most areas are most affected. Gulf of Finland, Gulf of Bothnia and Gulf of Riga are normally affected by ice every year while other areas are affected less often. A larger share of the nautical miles travelled in these areas are sailed in ice conditions annually. **In the routes most impacted by ice, the increase in fuel consumption when sailing in ice conditions is even 20-60% higher than in open water.** This implies especially high costs of maritime transport for transport of goods and passengers in these areas. In the Bay of Bothnia ice exists typically up to five months every year.

According to a study by the Finnish Meteorological Institute (FMI), on average, sailing in ice conditions increased the total annual fuel consumption of ships (5000 gross tonnage or above) sailing in ice conditions by about 8 % in the Baltic Sea area during years 2009 – 2019[5]. The total annual average increase of fuel consumption for ships sailing in ice conditions ranged from 2 % in 2019 to 15 % in 2013. Between 2009 and 2019, the average percentage of ships sailing in ice conditions ranged from 21 % in 2015 to 42 % in 2010 due to varying ice extent.

As explained above, the variation in ice conditions and duration of ice navigation season between regions is very wide, thereby making differences in economical impact even within the Baltic Sea region significant. The fuel consumption when navigating in ice conditions has been estimated by the Finnish Meteorological Institute (FMI) assuming that ships follow an icebreaker, which is often not the case, as the number of icebreakers is limited and they can only provide assistance to merchant vessels for safety shipping.

Adoption of the described method in emissions trading for navigation in ice conditions would produce new and more accurate information on the impact of navigation in ice conditions on fuel consumption.

Annex 5 includes an example on how sailing in ice conditions impacts ships' fuel use.

Additional fuel use caused by the design of the ice-class ships

On the average, ice-classed ships, when sailing in open water, consume about 2-5 % more fuel than ships designed for sailing in open water only. The lower figure 2% represents the increase in fuel consumption in open water for lower Finnish-Swedish ice classes IC and IB or equivalent ice classes, and the higher figure 5% represents the increase in fuel consumption in open water for higher ice classes IA and IA Super or equivalent ice-classes.

The reason for the larger fuel consumption in open water is that the hull form and the propeller of ice-classed ships are less optimal for the operation in open water, as they must be suited for the operation in ice conditions, too. In addition, it is not possible to install all new innovative options like vane wheels, which reduce fuel consumption, to ice-classed ships, because those devices would break or get stuck of ice floes when operating in ice conditions.

[5] Finnish Meteorological Institute 2021. Effect of sea ice on fuel consumption and carbon intensity of shipping in the Baltic Sea area in 2009 - 2019

Due to increased lightweight caused by the ice strengthening, ice-classed ships have a smaller capacity, i.e. deadweight, compared to their displacement than ships of a similar displacement designed for sailing in open water only. Thus, they transport less freight per voyage than similar ships designed to operate only in open water.

Annex 3 gives more detailed reasoning for the proposal to apply a constant 5% reduction on the annual emissions from voyages of ships having an Finnish-Swedish ice class IA or IA Super or equivalent ice class.

ANNEX 1

Proposal to amend the Emissions Trading Directive

We propose the text in red to be added to the Emissions Trading Directive

Article 1 of the EC proposal 14.7.2021

(15) Article 12 is amended as follows:

(c) paragraph 3 is replaced by the following:

"3. The Member States, administering Member States and administering authorities in respect of a shipping company shall ensure that, by 30 April each year:
(a) the operator of each installation surrenders a number of allowances that is equal to the total emissions from that installation during the preceding calendar year as verified in accordance with Article 15;
(b) each aircraft operator surrenders a number of allowances that is equal to its total emissions during the preceding calendar year, as verified in accordance with Article 15;
(c) each shipping company surrenders a number of allowances equal to its total emissions during the preceding calendar year, as verified in accordance with Article 3gc. Shipping companies may surrender fewer allowances on the basis of ships' ice class or navigation in ice or both in line with Annex X.

Member States, administering Member States and administering authorities in respect of a shipping company shall ensure that allowances surrendered in accordance with the first subparagraph are subsequently cancelled.";

To the extent that fewer allowances are surrendered compared to the verified emissions from maritime transport, once the difference between verified emissions and allowances surrendered has been established in respect of each year, a corresponding quantity of allowances shall be cancelled rather than auctioned pursuant to Article 10.

We propose the text in red to be added to the MRV Regulation

Article 3 of the EC proposal 14.7.2021

in Article 3, the following provisions is added:

(p) 'navigating in ice conditions' means navigating of an ice-classed ship in a sea area within the ice edge.

(q) "Ice edge" is defined by paragraph 4.4. of the WMO Sea-Ice Nomenclature, March 2014 as the demarcation at any given time between the open sea and sea ice of any kind, whether fast or drifting.

in Article 6, paragraph 4, the following amendment is made:

4. For shipping companies aiming to surrender fewer emission allowances on the basis of ships' ice class or navigation in ice conditions or both under Directive 2003/87/EC ~~T~~the monitoring plan ~~may~~ shall also contain information on the ice class of the ship and~~/or~~ the procedures, responsibilities, formulae and data sources for determining and recording the distance travelled and the time spent at sea when navigating in ice conditions. Information on procedures of recording the date and time when navigating in ice conditions and whether the voyage occurs between ports under a Member State's jurisdiction, departs

from a port under a Member State's jurisdiction or arrives to a port under a Member State's jurisdiction, shall also be provided.

in Article 9, first paragraph, the following provision is added:

(h) ice-class and whether the voyage involved navigation in ice conditions, if the shipping company aims to surrender fewer emission allowances on that basis under Directive 2003/87/EC. If the voyages involved navigating in ice conditions and if the shipping company aims to surrender fewer emission allowances on that basis under Directive 2003/87/EC, the information on date, time, and location when navigating in ice conditions, method used to measure fuel oil consumption, fuel consumption and the fuel's emission factor for each type of fuel when navigating in ice conditions, and distance travelled when navigating in ice conditions shall also be provided. Information on whether the voyage occurs between ports under a Member State's jurisdiction, departs from a port under a Member State's jurisdiction or arrives to a port under a Member State's jurisdiction, shall be provided.

in Article 9, first paragraph, the following amendment is made in the last subparagraph:

Any companies may also monitor information relating to the ship's ice class and to navigation in ice conditions, where applicable.

in Article 10, second paragraph, the following subparagraph is added to the end:

However, if the shipping company aims to surrender fewer emission allowances on the basis of ship's navigation in ice conditions under Directive 2003/87/EC, it can only apply the exception under the first subparagraph for those months when the ship does not sail in ice conditions.

in Article 10, first subparagraph, the following provision is added:

(gbis) aggregated distance travelled separately for voyages between ports under a Member State's jurisdiction, for voyages departing from a port under a Member State's jurisdiction and for voyages arriving to a port under a Member State's jurisdiction, if the shipping company aims to surrender fewer emission allowances on that basis under Directive 2003/87/EC.

(l) ice-class and aggregated CO_2 emissions when navigating in ice conditions separately for voyages between ports under a Member State's jurisdiction, for voyages departing from a port under a Member State's jurisdiction and for voyages arriving to a port under a Member State's jurisdiction and aggregated distance travelled when navigating in ice conditions separately for voyages between ports under a Member State's jurisdiction, for voyages departing from a port under a Member State's jurisdiction and for voyages arriving to a port under a Member State's jurisdiction when navigating in ice conditions, if the shipping company aims to surrender fewer emission allowances on that basis under Directive 2003/87/EC.

in Article 10, second paragraph the following amendment is made:

Any companies may monitor information relating to the ship's ice class and to navigation in ice conditions, where applicable.

We propose the following Annex to be added to the Emissions Trading Directive

The term "emissions" refers in this annex to the CO_2 emissions within the geographical scope of the Commission's proposal. If the eventual scope of the MRV regulation and the emissions trading in maritime transport will differ from the scope of the Commission's proposal (GHG emissions covered, geographical scope), the annex should be updated to take that into account.

Option to surrender a readjusted amount of allowances for ice class ships

The readjusted amount of emission allowances to be surrendered for ice class ships shall correspond to a readjusted amount of emissions that is calculated based on the formula presented in this annex. The readjusted amount of emissions shall take into account the technical characteristics that increase emissions of ships belonging to a Finnish-Swedish ice class IA or IA Super or equivalent ice class during navigation at all times and the further increase of emissions due to navigating in ice conditions.

Readjusted amount of emissions allowances to be surrendered annually mean readjusted amount of annual emissions $CO_{2\,R}$.

The annual total emission $CO_{2\,T}$ within the scope of the EU ETS are calculated on the basis of reporting in MRV as follows

$$CO_{2\,T} = CO_{2\,T\ voayges\ between\ MS} + CO_{2\,B} + 0.5 \cdot \left(CO_{2\ voyages\ from\ MS} + CO_{2\ voyages\ to\ MS}\right), \quad (1)$$

where $CO_{2\,T\ voayges\ between\ MS}$ denotes the aggregated CO_2 emissions from all voyages between ports under a Member State's jurisdiction, $CO_{2\,B}$ the emissions which occurred within ports under a Member State's jurisdiction at berth, $CO_{2eq\ voyages\ from\ MS}$ the aggregated CO_2 emissions from all voyages which departed from ports under a Member State's jurisdiction and $CO_{2\ voyages\ to\ MS}$ the aggregated CO_2 emissions from all voyages to ports under a Member State's jurisdiction.

Similarly the annual total emissions of an ice classed ship when navigating in ice conditions within the scope of the proposed Emissions Trading Directive for maritime transport CO_{2eI} are calculated on the basis of reporting in MRV as follows

$$CO_{2e\,I} = CO_{2eq\,I\ voayges\ between\ MS} + 0.5 \cdot \left(CO_{2eq\,I\ voyages\ from\ MS} + CO_{2eq\,I\ voyages\ to\ MS}\right), \quad (2)$$

where $CO_{2eq\,I\ voayges\ between\ MS}$ denotes the aggregated CO_2 emissions of an ice-classed ship when navigating in ice conditions between ports under a Member State's jurisdiction, $CO_{2eq\,I\ voyages\ from\ MS}$ emissions of an ice-classed ship when navigating in ice conditions from all voyages which departed from ports under a Member State's jurisdiction and $CO_{2eq\,I\ voyages\ to\ MS}$ emissions of an ice-classed ship when navigating in ice conditions from all voyages to ports under a Member State's jurisdiction.

The annual total distance travelled within the scope of the proposed Emissions Trading Directive for maritime transport is calculated as follows

$$D_T = D_{T\ voayges\ between\ MS} + 0.5 \cdot \left(D_{T\ voyages\ from\ MS} + D_{T\ voyages\ to\ MS}\right), \quad (3)$$

where $D_{T\ voayges\ between\ MS}$ denotes the aggregated distance from all voyages between ports under a MS jurisdiction, $D_{T\ voyages\ from\ MS}$ the aggregated distance from all voyages which

departed from ports under a MS jurisdiction and $D_{T\ voyages\ to\ MS}$ the aggregated distance from all voyages to ports under a MS jurisdiction.

The aggregated distance travelled when navigating in ice conditions within the scope of the proposed Emissions Trading Directive for maritime transport is calculated as follows

$$D_I = D_{I\ voayges\ between\ MS} + 0.5 \cdot \left(D_{I\ voyages\ from\ MS} + D_{I\ voyages\ to\ MS}\right), \quad (4)$$

where $D_{T\ voayges\ between\ MS}$ denotes the aggregated distance sailed in ice conditions from all voyages between ports under a MS jurisdiction, $D_{T\ voyages\ from\ MS}$ the aggregated distance sailed in ice conditions from all voyages which departed from ports under a MS jurisdiction and $D_{T\ voyages\ to\ MS}$ the aggregated distance sailed in ice conditions from all voyages to ports under a MS jurisdiction.

The readjusted amount of annual emissions CO2eq R are calculated as follows

$$CO_{2\ R} = CO_{2\ T} - CO_{2\ TF} - CO_{2\ NI}, \quad (5)$$

where $CO_{2\ TF}$ denotes the increase in annual emissions due to technical characteristics of ships having a Finnish-Swedish ice class IA or IA Super or equivalent ice class and $CO_{2\ NI}$ the increase in annual emissions of an ice classed ship due to navigating in ice conditions.

The increase in annual emissions due to technical characteristics of ships having a Finnish-Swedish ice class IA or IA Super or equivalent ice class $CO_{2\ TF}$ is calculated as follows:

$$CO_{2\ TF} = 0.05 \times (CO_{2\ T} - CO_{2\ B} - CO_{2\ NI}). \quad (6)$$

The increase in annual emissions due to navigating in ice conditions is calculated as follows:

$$CO_{2\ NI} = CO_{2\ I} - CO_{2\ RI}\ , \quad (7)$$

where the readjusted annual emissions for navigating in ice conditions $CO_{2\ RI}$ are

$$CO_{2\ RI} = D_I \times \left(\frac{CO_{2eq}}{D}\right)_{open\ water}\ , \quad (8)$$

where $\left(\frac{CO_{2eq}}{D}\right)_{OW}$ the emissions for voyages per distance travelled in open water. The latter is defined as follows:

$$\left(\frac{CO_2}{D}\right)_{OW} = \frac{CO_{2\ T} - CO_{2\ B} - CO_{2\ I}}{D_T - D_I}. \quad (9)$$

List of all symbols:

$CO_{2\ T}$	annual total emissions within the geographical scope of the EU ETS
$CO_{2\ T\ voayges\ between\ MS}$	aggregated CO_2 emissions from all voyages between ports under a Member State's jurisdiction,
$CO_{2\ B}$	emissions which occurred within ports under a Member State's jurisdiction at berth

$CO_{2eq\ voyages\ from\ MS}$	aggregated CO_2 emissions from all voyages which departed from ports under a Member State's jurisdiction
$CO_{2\ voyages\ to\ MS}$	aggregated CO_2 emissions from all voyages to ports under a Member State's jurisdiction
D_T	annual total distance travelled within the scope of the EU ETS
$D_{T\ voayges\ between\ MS}$	aggregate distance from all voyages between ports under a MS jurisdiction
$D_{T\ voyages\ from\ MS}$	aggregated distance from all voyages which departed from ports under a MS jurisdiction
$D_{T\ voyages\ to\ MS}$	aggregated distance from all voyages to ports under a MS jurisdiction.
D_I	aggregated distance travelled when navigating in ice conditions within the geographical scope of the EU ETS
$D_{T\ voayges\ between\ MS}$	aggregated distance sailed in ice conditions from all voyages between ports under a MS jurisdiction
$D_{T\ voyages\ from\ MS}$	aggregated distance sailed in ice conditions from all voyages which departed from ports under a MS jurisdiction
$D_{T\ voyages\ to\ MS}$	aggregated distance sailed in ice conditions from all voyages to ports under a MS jurisdiction
$CO_{2\ I}$	annual emissions of an ice classed ship when navigating in ice conditions
$CO_{2\ NI}$	increase of annual emissions of an ice-classed ship due to navigating in ice conditions
$CO_{2\ R}$	readjusted annual emissions
$CO_{2\ RI}$	readjusted annual emissions for navigating in ice conditions
$CO_{2\ TF}$	annual emissions due to technical characteristics of a ship with a Finnish-Swedish ice class IA or IA Super or an equivalent ice class on average, compared to ships designed to sail only in open water
$\left(\frac{CO_{2eq}}{dist}\right)_{OW}$	annual average of emissions for distance travelled in open water only

See Annex 2 for more information on the logics behind the proposed formula.

ANNEX 2 Detailed description of the proposal

The amount of deducted emissions for ice-classed ships is calculated on the basis of the following:

1. Due to technical reasons (design of the ship), a constantly applicable 5% reduction of the annual emissions from voyages for ships having a high Finnish-Swedish ice class IA, IA Super or equivalent to take into account the additional emissions of ice-classed ships, on average, compared to ships designed to sail only in open water.

2. The additional emissions of ice-classed ships, when navigating in ice conditions, to be taken into account by deducting the additional emissions caused by navigating in ice conditions, from the total emissions of these voyages.

The following information is needed for the ships, which wish to benefit from the proposed method:

a) Total CO_2 emissions
b) CO_2 emissions which occurred within ports under a MS jurisdiction at berth
c) Total distance travelled
d) Emissions from voyages in ice conditions (to be added to the MRV reporting)
e) Distance travelled through ice (to be added to the MRV reporting)

Section A1 describes how to calculate the adjusted amount of emissions due to technical reasons of ships with a Finnish-Swedish ice class IA, IA Super or equivalent. Section A2 describes how to calculate the adjusted amount of emissions due to voyages in ice conditions.

A1. Amount of deducted emissions due to the Finnish-Swedish ice class IA and IA Super or equivalent

A constant 5% deduction is applied to the annual emission from voyages of the ships having Finnish-Swedish ice class IA or IA Super or equivalent ice class due to technical reasons.

The amount of *deducted emissions due to a* Finnish-Swedish ice class IA or IA Super or equivalent ice class can be calculated in the following way:

1. The *emissions from voyages* are obtained by deducting the *CO_2 emissions, which occurred within ports under a MS jurisdiction at berth*, and the *adjusted amount of emissions for navigating in ice conditions*, see below, from the *total CO_2 emissions of the ship*.
2. The amount of *deducted emissions* due to Finnish-Swedish ice class IA or IA Super or equivalent ice class are obtained by multiplying its *CO_2 emissions from voyages* by 0.05.

A2. Amount of deducted emissions of ice-classed ships due to navigating in ice conditions

The increase in annual emissions of the ice-classed ships when navigating in ice conditions are deducted from the total emissions of these ships in order to ensure a level playing field between ships navigating in ice conditions and in open water. The *increase in annual emissions due to navigation in ice conditions* can be calculated in the following way:

1. First, the *emissions for voyages per distance travelled in open water* are calculated by dividing the annual *emissions in open water* by the annual *distance travelled in open water*. The *emissions in open water* are obtained by deducting the *emissions within ports at berth* and *emission from voyages in ice conditions* from the *total*

emissions. The *distance travelled in open water* is obtained by deducting the *distance travelled through ice* from the *total distance travelled*.

2. The amount of *readjusted emissions for voyages in ice conditions* is obtained by multiplying the *distance travelled through ice* by the *emissions for voyages per distance travelled in open water*.
3. The *increase in annual emissions due to navigation in ice conditions* is obtained by deducting the emissions in the previous item (2) from the *emissions from voyages in ice conditions*.

ANNEX 3 Detailed reasoning for the constant 5% reduction on the annual emissions from voyages of ships having a Finnish-Swedish ice class IA or IA Super or equivalent ice class

It is clear that the increased fuel consumption of an ice-classed ship depends on many design parameters, for example ship type, ice class, type of the propulsion system, hull form etc., which makes it difficult to develop a simple formula to take the increased fuel consumption into account. However, we consider that a simplified approach to be preferable in this case. We propose a 5% reduction of the annual fuel consumption of a ship having a Finnish-Swedish ice class IA or IA Super or equivalent to take into account the additional fuel consumption of these ice-strengthened ships, on average, compared to ships designed to sail only in open water.

A memorandum "Estimate on the additional power of ships with ice class" written by Professor Kaj Riska in 2012 (available in Finnish only) was utilized as a basis for our proposal. It describes three sources for the additional power used by ships with the Finnish-Swedish ice class IA Super when operating in open water in comparison to ships designed for sailing in open water only:

1) The propeller efficiency is worse due to ice strengthening of the propeller. This increases the use of power by 2 %.
2) The resistance of the ship increases due to hull form. The effect of hull form increases the use of power
    - 0 % when the ship has a bulb
    - 3 % when the ship has an ice bulb
    - 7 % when the ship has a "light" ice bow (stem angle 40^{o})
    - 13 % when the ship has an ice bow
3) As the capacity of the ice-strengthened ship is smaller due to ice strengthening of the hull, the ice-strengthened ship must be longer in order to have the same capacity as a similar ship designed for open water only. This increases its use of power. The memorandum gives a formula to estimate the increase of power.

Using the above-mentioned information, the memorandum estimates that 45 cargo and passenger ships with the Finnish-Swedish ice class IA Super use on average 4.5 % more power than open water ships.

In a recent study of Aker Arctic (Saisto et al., 2019[6]), the propulsion efficiency of ice-strengthened ships was analysed for two types of ships, a bulk carrier and a roro ship, concerning the Finnish-Swedish ice classes IC, IB, IA and IA Super. The following results were presented:

- For the vessel 1, the single screw vessel of bulk carrier type, the relative delivered power increase, due propeller strength demands, at optimization point compared to open water propeller is 2.8% higher for IC and IB ice class, 3.3% higher for IA and 4.3 % higher for IAS ice class.
- For the vessel 2, the twin-screw RoRo or ferry, the relative delivered power increase, due propeller strength demands, at optimization point compared to open water propeller is 0.2 % higher for IC and IB ice class, 0.9 % higher for IA and 1.4 % higher for IAS ice class.

Thus the study by Aker Arctic implies that the estimated 4,5 % increase in use of power in Professor Riska's study may be too low, because the worse propeller efficiency of ice-classed ships having an ice class IA or IA Super may increase the use of power more than 2%.

To conclude based on the analysis made by Professor Riska and the study of Aker Arctic, 5% increase in fuel consumption in open water reflects quite well the difference in fuel consumption between ships belonging to Finnish-Swedish ice class IA or IA Super and ships of similar size designed to sail only in open water.

[6] Saisto Ilkka and Turunen Taisto (2019), Effect of the FSICR to propeller efficiency, Aker Arctic Technology Inc, 2019.

ANNEX 4

Costs caused by ice strengthening of ships and navigating in ice conditions

Winter navigation increases fuel costs, capital costs and system costs. Fuel and capital costs constitute the largest cost components of ships. For example, fuel costs constituted the largest (40–67%) and capital costs the second largest (14–26%) expense item for all ships engaged in Finland's foreign trade[7].

Some examples of the increase in costs are provided below:

- Capital costs of IAS/IA container vessels are 8% higher than for open water vessels[8]
- The strengthened hulls of the ice class ships make them more expensive to build.[9]
- For bulk vessels, the cost premium in capital costs could be as much as 35%[10]

In addition, to increase in fuels costs and capital costs, **navigating in ice conditions takes time and implies delays which also lead to additional costs** and reduction on competitiveness.

[7] The Finnish Transport Infrastructure Agency The unit costs of vessel traffic 2018

[8] Solakivi, T. Kiiski, T., Ojala, T. (2019) On the cost of ice: estimating the premium of ice class container vessels, Maritime Economics & Logistics, Vol 21, No. 2, pp. 207-222.

[9] (Erikstad S.O., Ehlers. S. (2012) Decision Support Framework for Exploiting Northern Sea Route Transport Opportunities, Ship Technology Research, 59(2): 34-42)

[10] (Solakivi, T. Kiiski, T., Ojala, T. (2018) The impact of ice class on the economics of wet and dry bulk shipping in the Arctic waters, Maritime Policy & Management, Vol. 45 No 4, pp 530-542).

ANNEX 5

Example on how sailing in ice conditions impacts ships' fuel use

Figure 1 gives data obtained from the Finnish Shipowners' Association. It shows that during a harsh winter in the Northern Baltic Sea, the fuel consumption per month may increase even about 30-60 % in comparison to an average fuel oil consumption in open water conditions (May-December). In the case of the example of Figure 1, the annual increase of the fuel consumption is 15 % due to the increased fuel consumption in ice conditions in comparison to the situation that the ships would operate in open water conditions only.

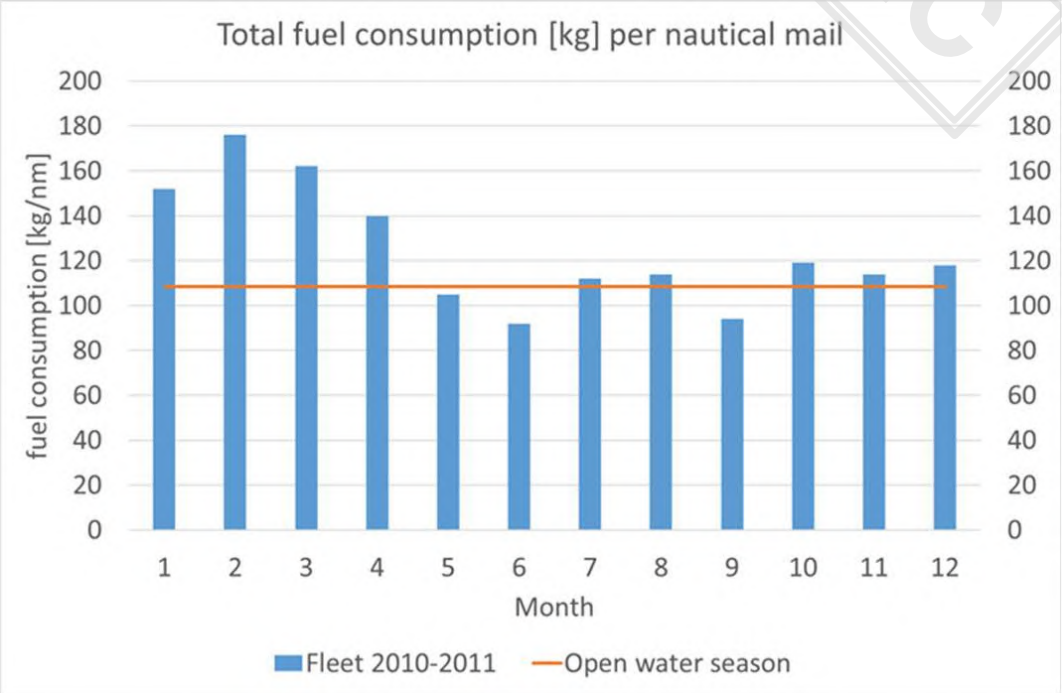

Figure 1. Monthly total fuel oil consumption of 4 ice-classed ships sailing in the Baltic Sea area in 2011. In the period from January to April the ships operated also in ice.

Council of the European Union
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CONTRIBUTION

From:	General Secretariat of the Council
To:	Working Party on the Environment
N° prev. doc.:	WK 737/2022
Subject:	Fit for 55 package - ETS: Comments from delegations

Following the call for comments on the above set out in WK 737/2022 regarding the ETS extension to maritime transport (cluster 2), delegations will find attached comments from the BE, EL and FI delegations.

GREECE

Preliminary suggestions on the proposal EU ETS - maritime sector

We propose the following amendments:

A. Objective: Implement the "polluter pays" principle by rendering responsible to surrender allowances those that are responsible for the decisions regarding the ship's itinerary (i.e. the commercial operator that in many cases is identical to the shipping company) and ensure tight enforcement

It is proposed to amend the Article 3ga as follows:

Article 3ga

Phase-in of requirements for maritime transport

1. Without prejudice of par. 2, shipping companies shall be liable to surrender allowances according to the following schedule:

(a) 20 % of verified emissions reported for 2023;

(b) 45 % of verified emissions reported for 2024;

(c) 70 % of verified emissions reported for 2025;

(d) 100 % of verified emissions reported for 2026 and each year thereafter.

To the extent that fewer allowances are surrendered compared to the verified emissions from maritime transport for the years 2023, 2024 and 2025, once the difference between verified emissions and allowances surrendered has been established in respect of each year, a corresponding quantity of allowances shall be cancelled rather than auctioned pursuant to Article 10.

2. When the ultimate responsibility for the purchase of the fuel or the operation of the ship is assumed pursuant to a contractual agreement, by a different entity, this entity shall be responsible under this contractual agreement to cover the costs arising from the implementation of this Directive. Operation of the ship for the purposes of this Article shall mean determining the cargo carried and the route or the speed of the ship. In case the commercial operator in not known or identifiable, the ship owner or any other entity that has agreed to take over all duties and responsibilities imposed by the ISM code shall be responsible.

3. The allowances attributed to each voyage shall be surrendered before the departure of the ship from the EU port

Justification:

1. Consequential amendment

2. *The Commission proposal for the extension of the EU ETS to maritime transport would make owners of ships legally liable for surrendering EU ETS allowances. However, in a large segment of shipping the owner of the ship and its operator – making decisions about the fuel used and other decisions that affect CO_2 emissions and their cost (e.g. speed, itinerary) – are*

different entities. This is mainly the case for the tramp shipping model, a segment of shipping operating under perfect competition and populated to a large extent by EU-owned SMEs. As opposed to the liner (incl. Ro-pax) shipping model with its fixed schedules and rates, tramp shipping provides charterers with flexible itineraries and terms, allowing for efficient cross-continental trade. Making the shipowner (or an entity controlled by the owner), rather than the ship commercial operator, the regulated entity under the EU ETS, thus, creates a number of problems in this respect:

- *It is not aligned with the "polluter pays" principle, as the operation, itinerary and speed of the ship are choices made by the commercial operator. No binding requirements are introduced despite that the IA recognizes the role of the commercial operator in implementing the "polluter pays" principle[1].*
- *The time inconsistency between contract terms (agreed ex-ante) and operation (only available ex-post), gives rise to uncertainty regarding the quantity of EU ETS allowances, limiting the ability of the owner to pass the cost to the commercial operator (the polluter).*
- *SMEs face an inherent disadvantage relative to large corporations in optimizing the costs arising from the EU ETS, given the volatility of the price of allowances.*

For these reasons, Greece proposes that ***the regulated entity under the EU ETS is, as a general rule, the ship commercial operator****. When the commercial operator in not known or identifiable, the ship owner or any other entity that has agreed to take over all duties and responsibilities imposed by the ISM code shall be responsible. Obviously, this will result in some adjustments as to the allocation of allowances to be auctioned by each Member State. This change would align the EU ETS in maritime transport with the "polluter pays" principle, while maintaining a level playing field among different modes of shipping. At the same time it would go a long way in limiting disruptions and inefficiencies – shortages and higher transport costs – in international trade.*

3. To ensure tight enforcement, a prerequisite for maintaining a level playing field, especially for the tramp shipping.

B. Objective: Balanced method of allocation of allowances for maritime sector through auctioning

It is proposed to add a new article XX concerning the method of allocation of allowances for maritime sector through auctioning in a consisted way as in the aviation sector as follows:

New Article XX

Method of allocation of allowances for maritime sector through auctioning

1. The number of allowances to be auctioned in each period by each Member State shall be proportionate to its share of the total attributed maritime emissions for all Member States for the reference year.

2. Articles 9~~,~~ **and** 9a ~~and 10~~ shall apply to maritime transport activities in the same manner as they apply to other activities covered by the EU ETS.

[1] See page 142 and 143 of the Impact Assessment of the Commission on the EU ETS

3. All revenues generated from the auctioning of allowances should be used to fund research and development and to reduce greenhouse gas emissions from the maritime sector, to improve the relevant infrastructure in the Union and third countries as well as to cover the cost of administering the EU ETS. Auctioning revenues should also be used to fund common projects to reduce greenhouse gas emissions from the maritime sector through the promotion of alternative marine fuels and innovative technologies as well as to support Carbon Contracts for Difference (CCDs) to guarantee investors in innovative climate-friendly technologies a price that rewards CO2 emission reductions above those induced by the current price levels in the EU ETS. The proceeds of auctioning may also be used to fund the creation of a dedicated Research Centre for Alternative Marine Fuels and Technologies to address coordination failures among stakeholders and help de-risk investments in alternative marine fuels and technologies. Transparency on the use of revenues generated from the auctioning of allowances under this Directive is essential to meeting Union commitments. Member States shall inform the Commission of actions taken pursuant to the first subparagraph of this paragraph.

Justification:

1. Due to its relative size, the Greek-owned commercial fleet will be responsible for a very large share of the cost from the extension of the EU ETS in maritime transport as also confirmed by the shipping MRV data. However, the Commission's proposal allocates auction rights for emissions in the maritime sector to MSs in proportion to their historical GHG emissions in stationary installations contrary to the approach followed for aviation. Taking into consideration that shipping companies are liable to surrender allowances, such a different approach is not justified and results in a disproportionate transfer that needs to be re-balanced. Therefore, we propose to follow the paradigm of aviation and apply, mutatis mutandis, the aviation methodology of allocation of auction rights to MSs.

2. Consequential amendment

3. Similar to par. 4 of Art. 3d regarding the revenues from aviation. Today, there is an array of candidate alternative fuels and technologies to decarbonise the maritime transport sector. However, contrary to all other sectors, none of these alternatives is mature and available at scale, and this will persist in the near future. Major questions linger regarding the commercial and operational viability for each of these options. Hence, we propose all revenues to be used for the decarbonisation of the sector.

Additionally, we propose the creation of an EU research Center for Alternative Marine Fuels and Technologies. This agency will address coordination failures among stakeholders and, help de-risk investments in alternative marine fuels and technologies. Such investments could include public-private partnerships in R&D, demonstration projects in mature technologies, and co-investments in the appropriate infrastructure. The agency would also be responsible for delivering guidelines on alternative fuels and technologies, including on the infrastructure needs, and roadmaps and timelines for the transition.

Furthermore, we have included an explicit reference to the possibility to finance Carbon Contracts of Difference as suggested in recitals 33 and 35. Alternatively, these CCDs could be financed under the Innovation Fund.

Please note that more technical adjustments may be needed to fully follow the paradigm of aviation mutatis mutandis.

C. Objective: Ensure social and territorial cohesion of island regions

It is proposed to add a **new Article** concerning exclusion of certain routes serving smaller islands[2] as follows:

(New) Article 3(xx)

By way of derogation from Article 3g, emissions from passenger ships and Ro-Ro passenger calling to ports of islands within the same Member State with less than 100.000 permanent residents, according to the latest official census of the population, shall not be covered by this Directive and shipping companies shall not be liable to surrender allowances until 2030. Member States shall notify the Commission about the routes/ islands exempted as well as for any alterations thereof.

Justification: *With the proposed new article we believe that the wider and pressing societal needs, like those of islands' connectivity - an issue of paramount importance for Greece - are properly addressed, so that the EU territorial cohesion is not jeopardised.*

D. Objective: Ensure a level-playing field in shipping – Alignment with international market-based measure instruments

Article 3ge

Reporting and review

1. The Commission shall consider possible amendments in relation to the adoption by the International Maritime Organization of a global market-based measure to reduce greenhouse gas emissions from maritime transport. In the event of the adoption of such a measure, ~~and in any event before the 2028 global~~ stocktake and no later than **31.12.2025** ~~30 September 2028,~~ the Commission shall present a report to the European Parliament and to the Council in which it shall examine ~~any such~~ **the** measure. Where appropriate, the Commission ~~may follow to~~ **will accompany** the report with a legislative proposal to the European Parliament and to the Council to amend this Directive **with a view to align it with the international market-based measure** ~~as appropriate~~.

Justification: *The EU should safeguard the competitiveness of the EU fleet and ensure a level-playing field for international shipping. Therefore, we propose to speed up the foreseen for 2028 review clause, taking into account the deliberations on a global Market-Based Mechanism (MBM), as part of the IMO's GHG Strategy mid-term measures in order to fully align timely with a possible IMO MBM scheme. The acceleration of the review date will also put more pressure on IMO to accelerate its own internal process.*

[2] The inclusion of passenger shipping to the EU ETS from 2023, will inevitably lead to significant fare increase which will be borne by the permanent residents and visitors of the islands, which ultimately lead to the unequal treatment of the islanders in relation to other residents and the EU and have a detrimental effect on the growth prospects of those vulnerable areas. Since connectivity will need to be ensured even if the routes become economically unviable (in fact most of them are already carried out under Public Service Contracts), no detrimental environmental effects are expected.. It is thus proposed that emissions from ships calling to islands with less than 100.000 permanent residents to be excluded from the scheme.

E. Objective: Legal clarity on the scope and alignment with EU MRV

It is proposed to add a **new** point in Article 1 and amend Article 3g[3] as follows:

(New) Point (xx)

'Port of call' has the same meaning as under Article 3(a) of Regulation (EU) 2015/757[4];

Article 3g

Scope of application to maritime transport activities

1. The allocation of allowances and the application of surrender requirements in respect of maritime transport activities shall apply in respect of fifty percent (50 %) of the emissions from ships performing voyages departing from a port **of call** under the jurisdiction of a Member State and arriving at a port **of call** outside the jurisdiction of a Member State, fifty percent (50 %) of the emissions from ships performing voyage departing from a port **of call** outside the jurisdiction of a Member State and arriving at a port **of call** under the jurisdiction of a Member State, one hundred percent (100 %) of emissions from ships performing voyages departing from a port **of call** under the jurisdiction of a Member State and arriving at a port **of call** under the jurisdiction of a Member State and one hundred percent (100 %) of emissions from ships at berth in a port **of call** under the jurisdiction of a Member State.

~~2. Articles 9, 9a and 10 shall apply to maritime transport activities in the same manner as they apply to other activities covered by the EU ETS."~~

Justification:

1. Although the proposed amendment is of minor importance it is considered that the scope of the revised EU ETS Directive, as far as the shipping sector is concerned, has to be in alignment with the scope of the EU MRV Regulation, since monitoring, reporting and verification of emissions will be done under the latter.

2. Consequential amendment to proposed amendment B

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[3] Deletions as seen via strikethrough and additions with bold underlined text

[4] Reproduced for ease of reference: *"Port of call" means the port where a ship stops to load or unload cargo or to embark or disembark passengers; consequently, stops for the sole purposes of refuelling, obtaining supplies, relieving the crew, going into dry-dock or making repairs to the ship and/or its equipment, stops in port because the ship is in need of assistance or in distress, ship-to-ship transfers carried out outside ports, and stops for the sole purpose of taking shelter from adverse weather or rendered necessary by search and rescue activities are excluded*

BELGIUM

Position ETS Shipping

Introduction

Belgium supports the inclusion of the maritime sector into the EU ETS. The shipping sector is part of the transport sector, which as a whole has to deliver a 90% emissions reduction by 2050 to achieve the EU goal of climate neutrality. A lot of progress still has to be made in the shipping sector, which is a complex sector operating in an international setting. The price gap between conventional and low/zero-carbon fuels is currently too high. By putting a price on carbon via ETS this price gap is expected to decrease. For that reason the inclusion of shipping in EU ETS seems to be able to guide the sector towards the 90% reduction efforts.

In what follows next, we would like to give an overview of the Belgian position on the different components of the EU ETS proposal.

Scope

Belgium welcomes the proposed geographical scope of 100% intra- and 50% extra-EU voyages. From an emissions point of view we believe this is the most effective geographical scope, without disrupting the level playing field between short sea shipping EU trade and deep sea extra-EU trade. Belgium however still requires full clarity with regard to the consistency with UNCLOS. A brief explanation on our rights as Port States (port entry requirement) was given, but other states (non-EU) also have sovereign rights as Coastal and/or Flag States, which we believe are impacted by the suggested scope. A possible solution – so as to avoid future legal discussions or even court cases – might be to address this legal issue in the review clause. Because we include half of the extra-EU voyages, we do have some concerns on our negotiation position within IMO regarding the discussions on market based measures. Belgium prefers to work on an international regulatory framework at IMO to reduce GHG emissions from the shipping industry, however action should be taken as soon as possible and in this regard we support the adoption of this regional ETS as a start.

With regard to the ship scope, Belgium is positive about the threshold of 5000 GT. Both MRV and DCS data are based on this threshold.

A last point Belgium wants to mention with regard to the scope is the GHGs that are taken into account. Currently only CO_2 will be taken into account for the surrendering of allowances. However in the FuelEU Maritime proposal CH_4 and N_2O are taken into account as well. Belgium would like to consider the inclusion of these two GHGs into the EU ETS Maritime when it is reviewed for better alignment with FuelEU Maritime. The necessary steps should be initiated to examine how these gases could be introduced in the EU MRV for shipping, especially because bunker emissions from shipping are not accounted for in the national inventories.

Phased-in approach

Belgium welcomes the initiative of a phased-in approach for the surrendering of allowances for the shipping sector. As this sector isn't included yet in the EU ETS, this initiative provides some time to make investments, develop infrastructure and make adjustments where necessary.

Responsible entity for compliance

Holding the shipping company accountable for compliance seems to be the most obvious choice from an administrative and enforcement point of view. Shipping companies are already familiar with the reporting formalities of the MRV Regulation and they are known entities to PSC and Flag State authorities. Belgium however is concerned that the polluter pays principle isn't respected in all cases. Shipping companies often aren't responsible for the choice of fuel or for deciding on operations. Recital (20) of the Directive suggests that the company could deal with this through contractual arrangements. However this proposal seems superfluous as contractual arrangements can be made in any case, but remain voluntary. Taking into account the commercial interests, it seems unlikely that such arrangements will become common practice.

Therefore, we suggest that the recital refers to a binding clause in the contractual arrangements. This clause shall provide that the entity ultimately responsible for purchasing the fuel or for the operation of the ship shall cover the costs paid by the shipping company. In this manner the polluter pays principle will be respected, which is necessary to ensure the uptake of efficiency measures and cleaner fuels.

Belgium advices to consider adding the following line in Article 1 par. 2 d (v):

Article 1(2d(v)): When the ultimate responsibility for the purchase of the fuel or the operation of the ship is assumed, pursuant to a contractual agreement, by a different entity, this entity shall be accountable for the costs arising from the implementation of this Directive. Operation of the ship for the purposes of this Article shall mean determining the cargo carried, the route or the speed of the ship.

In the same reasoning, when considering Article 16, paragraph 11a it should rather or at least also be the responsible polluter who will be notified to the Commission, EMSA, other Member States and the Flag State concerned.

Furthermore, for more clarity on which entity is responsible in case of a change of company in the course of a reporting period, Belgium would like to propose an amendment in Article 12(3c). The review of MRV foresees an amendment in Article 11(2): "Where there is a change of company, the previous company shall submit to the Commission and to the authorities of the flag State concerned, as close as practical to the day of the completion of the change and no later than three months thereafter, a report covering the same elements as the emissions report but limited to the period corresponding to the activities carried out under its responsibility." Belgium proposes the following draft text amendment:

Article 12(3c): each shipping company surrenders a number of allowances equal to the total emissions for which it is responsible during the preceding calendar year, as verified in accordance with Article 3gc ***and in accordance with Article 11(2) of Regulation (EU) 2015/757.***

<u>Administering authority</u>

The share in the administrative burden is most significant for Member States with busy ports, whilst at the same time these Member States do not necessarily have the most extensive Administration. Whilst Belgium welcomes the list which allocates each shipping company to one Member State, we do have some concerns with regard to the update of the list. Belgium agrees the list should be updated every two years, however for companies with regular port calls that are evenly split between different EU ports the administering authority shouldn't change every two years. From experience in other fields, we know that having to deal with non-EU based companies is much more challenging and requires much more efforts. Once established, these contacts should be given good use. In this view we propose the following draft text amendment:

Article 3gd(2b): at least every two years thereafter, update the list to reattribute shipping companies to another administering authority where appropriate or to include shipping companies which have subsequently performed a maritime activity listed in Annex I that fell within the scope defined in Article 3g. ***Non-EU shipping companies with long-term regular port calls in multiple EU ports, will be attributed to an administering authority that will remain the same. The number of such companies attributed to each administering authority will be equally balanced amongst the latter.***

Reporting

With regard to the reporting of emissions, Belgium welcomes the update to Thetis-MRV. Shipping companies are already familiar with the formalities of the Thetis-MRV system. Another similarity that is welcomed is the role of the verifier in EU ETS.

One concern that isn't solved yet relates to the timelines of MRV. The current MRV regulation requires individual ship monitoring plans to be submitted by 30th April, whilst aggregated monitoring plans for EU ETS should be submitted by 31st March – or even 28th February. In this regard we would propose to align both deadlines with each other.

Penalties

Whilst the penalty system creates an extra incentive to comply with this Directive, Belgium does foresee (from our experience in other fields) difficulties with the collection of penalties from extra-EU shipping companies.

Non-compliance

When shipping companies don't comply with this Directive, all of their ships will be banned from European ports. Belgium sees this as a logical consequence of compliance at company level, but we do however want to stress that this is a more severe sanction than in other sectors.

Regarding to the expulsion order itself, Belgium is looking forward to a harmonized approach for applying this measure. A procedure for issuing an expulsion order could be developed by EMSA.

When considering the terminology used for non-compliance, we note that the term expulsion order is used and we wonder if the term banning order wouldn't be more appropriate.

Revenues

With regard to the revenues, Belgium would like to be reassured that sufficient revenues will flow back to the maritime sector. This sector will have to make a tremendous amount of investments of which the majority will be required in port infrastructure, next to the R&D developments in shipping technologies. In contrast to other sectors, the maritime sector will have to invest in different technologies in order to make sure each ship can make use of their installed technologies. The path towards the decarbonization of the shipping industry is unknown at the moment. There is a whole set of candidate alternative fuels and technologies to help decarbonize this sector, however these are not yet available for the deep sea shipping segment. There is need for a rapid deployment of mature technological solutions, which requires considerable investments in R&D for which considerable support from the Innovation Fund and Horizon Europe will be needed.

Review clause

With regard to the review clause, Belgium appreciates the reference to the IMO. With regard to the scope of this Directive, Belgium still has some concerns with regard to UNCLOS, as already explained before. In this regard we propose the following draft text amendment for the review clause:

Article 3ge
Reporting and review
1. The Commission shall consider possible amendments in relation to the adoption by the International Maritime Organization of a global market-based measure to reduce greenhouse gas emissions from maritime transport. In the event of the adoption of such a measure, and in any event before the 2028 global stocktake and no later than 30 September 2028, the Commission shall present a report to the European Parliament and to the Council in which it shall examine any such measure. **The Commission shall also consider possible amendments in relation to the adoption by any other region/country of a market-based measure to reduce greenhouse gas emissions from maritime transport. Where an infringement with UNCLOS is established, the Commission shall present a report to the European Parliament and to the Council in which it shall examine any such infringements.** Where appropriate, the Commission may follow to the report with a legislative proposal to the European Parliament and to the Council to amend this Directive as appropriate.

Since the maritime industry is an international industry, attention should be given to safeguarding the level playing field. Circumvention, tax-evasion and modal shift that are detrimental to the environment should be avoided at all time. In this sense the introduction of article 3ge(2) is welcomed, but should reflect a more proactive approach. The cumulative impact of the different measures for shipping was not examined and might lead to evasion and transshipment. BE therefor suggests to amendment article 3ge(2) as follows:

Article 3ge(2): The Commission shall monitor the implementation of this Chapter **to detect evasive behavior so as to prevent this at an early stage** and **report on** possible trends as regards companies seeking to avoid being bound by the requirements of this Directive. If appropriate, the Commission shall propose measures to ~~prevent such avoidance~~ **address these trends**.";

A final point Belgium would like to mention is the impact on developing countries. The inclusion of shipping in EU ETS also includes extra-EU voyages and extra-EU companies which will affect developing countries, especially SIDS and LDCs. Many of these countries are very dependent on import and export and will notice the price increase of ETS. Therefore we believe these effects have to be followed up.