MARE NOSTRUM

The Adoption of Carbon Footprint Code in the Shipping Industry
1. **Background Knowledge**
   - Climate Changes in Recent Days
   - UN’s Response to Climate Change
   - IMO’s Response to Climate Change

2. **Carbon Footprint?**
   - What it is?
   - Why Carbon Footprint?
   - Limitation

3. **Our Proposal to IMO**
   - IMO Carbon Footprint Code

4. **Conclusion**
Section 1

Background Knowledge
1. Background Knowledge

Emits 170g of Carbon from its production stage up to its consumption.
1. Background Knowledge

1) Climate Changes in Recent Days
1. Background Knowledge

1) Climate Changes in Recent Days

Total Emissions of CO₂ in the Shipping Industry

Which amounts to 2.89% of Global CO₂ Emissions

Source: MEPC 75-7-15 Fourth IMO GHG study 2020 final report
1. Background Knowledge

1) Climate Changes in Recent Days

Ranking of Total CO\textsubscript{2} Emissions in International Shipping in 2016

- **China**: 29.18%
- **USA**: 14.02%
- **India**: 7.09%
- **Russia**: 4.65%
- **Japan**: 3.47%
1. Background Knowledge

1) Climate Changes in Recent Days

Ranking of Total CO₂ Emissions in International Shipping in 2016

- 2.17% Germany
- 1.89% Canada
- The rest of the World
- 1.84% International Shipping

Source:
1. Background Knowledge

2) UN’s Response to Climate Change

- 1992: United Nations UNFCCC
- 1997: KYOTO Protocol
- 2015: PARIS Agreement
1. Background Knowledge

3) IMO’s Response to Climate Change

.2 carbon intensity of international shipping to decline

to reduce CO₂ emissions per transport work, as an average across international shipping, by at least 40% by 2030, pursuing efforts towards 70% by 2050, compared to 2008; and

.3 GHG emissions from international shipping to peak and decline

to peak GHG emissions from international shipping as soon as possible and to reduce the total annual GHG emissions by at least 50% by 2050 compared to 2008 whilst pursuing efforts towards phasing them out as called for in the Vision as a point on a pathway of CO₂ emissions reduction consistent with the Paris Agreement temperature goals.

IMO’s Levels of Ambition on Reducing GHG Emissions

7 PERIODIC REVIEW OF THE STRATEGY

7.1 The Revised Strategy is to be adopted in spring 2023.

7.2 The Revised Strategy should be subject to a review five years after its final adoption.

7.3 The Committee should undertake the review including defining the scope of the review and its terms of reference.

Based on the Initial Strategy, IMO aims to adopt the Revised Strategy in 2023
According to the IMO 4th GHG Study, \( \text{CO}_2 \) accounts for 98% of total GHG Emissions from the Shipping Industry.
Section 2

Carbon Footprint?
2. Carbon Footprint?

1) What it is?

**Definition**
:: the total amount of carbon released from the beginning of production till the product being consumed or discarded

**Role**
:: Become the standard for calculating GHG emissions to help accurately obtain the actual GHG in the shipping industry
“A calculation that estimates the amount of emissions in carbon dioxide equivalent that a country, a business, an organization, an individual or another stakeholder is responsible for.”


“A carbon footprint is a measure of the impact your activities have on the amount of CO₂ produced through the burning of fossil fuels and is expressed as a weight of CO₂ emissions produced in tonnes.”

Source: WHO, Reducing your Carbon Footprint

“Sum of GHG emissions and GHG removals in a product system, expressed as CO₂ equivalents and based on a life cycle assessment using the single impact category of climate change.”

2. Carbon Footprint?

ISO 14067:2018
Greenhouse gases — Carbon footprint of products
Requirements and guidelines for quantification

Zero-Emission Vessels 2030. How do we get there?
We're considering the drivers that will make Zero-Emission Vessels viable.
Part of the Low Carbon Pathways 2050 series.

bp
Reduce your carbon footprint. But first, find out what it is.

The aviation industry has a goal of halving total carbon emissions by 2050, relative to 2005 levels.
2. Carbon Footprint?

Total emissions of CO₂

<table>
<thead>
<tr>
<th>Year</th>
<th>2nd IMO GHG Study (2009)</th>
<th>3rd IMO GHG Study (2014)</th>
<th>4th IMO GHG Study (2020)</th>
<th>5th IMO GHG Study (Further to be Conveyed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>1046 million</td>
<td>1100 million</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>-</td>
<td>938 million</td>
<td>962 million</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>-</td>
<td>-</td>
<td>1056 million</td>
<td></td>
</tr>
</tbody>
</table>

As IMO’s research progresses with new technologies, data will become more **accurate.**
Who used this term?  
When the term was first used?

A shared perception of what CF signifies exists, but the meaning and extent needs to be clarified.
Section 3

Our Proposal to IMO
3. Our Proposal to IMO

0) Carbon Footprint Code

IMO CF CODE
3. Our Proposal to IMO

How will it be implemented?
Under the lead of MEPC

What is the range?
from its definition to Market Based Measurement

Composition?
Chapter 1:: Definition
Chapter 2:: Method of Measurement
Chapter 3:: CF LEVY
Chapter 4:: CF BOARD
3. Our Proposal to IMO

Chapter 1) Definition

Part IX - Marine Environment Protection Committee

Article 37

The Marine Environment Protection Committee shall consist of all the Members.

Article 38

The Marine Environment Protection Committee shall consider any matter within the scope of the Organization concerned with the prevention and control of marine pollution from ships and in particular shall:

a. Perform such functions as are or may be conferred upon the Organization by or under international conventions for the prevention and control of marine pollution from ships, particularly with respect to the adoption and amendment of regulations or other provisions, as provided for in such conventions;

Part I - Purposes of the Organization

Article 1

The purposes of the Organization are:

a. To provide machinery for co-operation among Governments in the field of governmental regulations and practices relating to technical matters of all kinds affecting shipping engaged in international trade, to encourage and facilitate the general adoption of the highest practicable standards in matters concerning the maritime safety, efficiency of navigation and prevention of marine pollution from ships, and to deal with administrative and legal matters related to the purposes set out in this Article;

b. To encourage the removal of discriminatory, exorbitant and unnecessary restrictions by Governments affecting shipping engaged in international trade so as to promote the availability of shipping services to the consignees of the world without discrimination, and to encourage and promote such improvements by Governments for the benefit of all the consignees and customers, and such assistance and encouragement is not based on pressures designed to restrict the freedom of shipping of all flags to take part in international trade;

c. To provide for the consideration by the Organization of matters concerning unfair restrictive practices by shipping concerns in accordance with Part II;

d. To provide for the consideration by the Organization of any matters concerning shipping and the effect of shipping on the marine environment that may be referred to it by any organ or specialized agency of the United Nations;

e. To provide for the exchange of information among Governments on matters under consideration by the Organization.

Part II - Functions

Article 2

In order to achieve the purposes set out in Part I, the Organization shall:

a. Subject to the provisions of Article 3, consider and make recommendations upon matters referred to it under Article 1(a), (b) and (c) that may be submitted to it by Members, by any organ or specialized agency of the United Nations or by any other intergovernmental organization or upon matters referred to it under Article 1(d);

b. Provide for the working of committees, sub-committees, or other suitable instrumentalities, and recommend them to Governments and to intergovernmental organizations, and create such conferences as may be necessary;

the IMO’s term of Carbon Footprint should focus on the ship itself.
“Total Carbon released from *Shipbuilding to Scrap*”

S2S
3. Our Proposal to IMO

Chapter 1) Definition

IMO CF CODE S2S

Shipbuilding, Operating, and Scrap Phase
3. Our Proposal to IMO

Chapter 2) Method of Measurement

(1) Shipbuilding Phase

- Amendment to Adopt Additional Article in **MARPOL Annex VI Regulation 2: Definition**
  
  “Ship construction starts when the structural steel is cut for the first time”

- Assuming the amount of carbon emitted from the construction existing ship as the construction of newly built ships with similar G/T

- Additional articles regulating carbon measurement
3. Our Proposal to IMO

(2) Operating Phase

- Amendment to Adopt Additional Article in **MARPOL**
  :: Ship operation phase is "neither Shipbuilding nor Scrap"

- Utilize **IMO Data Collection System** (DCS) for Fuel Consumption
3. Our Proposal to IMO

(3) Scrap Phase

- **Amendment to Adopt Additional Article in Ship Recycling Convention Article 2: Definition**
  “Scrap” means when dismantling has progressed, and the ship is no longer functional

- The need for additional compulsory regulations to calculate carbon

- Scrap phase, like the Shipbuilding phase, assumes the carbon emitted from existing ships to newly built ships with similar gross tonnage.
Suggest IMO conduct further studies on **Market Based Measure (MBM)**

CF LEVY can be a way to **compromise** the two Principles

Based on the total amount of carbon emission through **S2S** measurement
3. Our Proposal to IMO

**CF LEVY**

- **Carbon Tax**
  - Uniform tax rate per ton of fuel
  - An extremely low tax rate in the initial few years.

- **Emission Trading System**
  - Emission reduction targets based on ship types
  - Ships that fail to meet targets: Additional Tax as a punitive taxation method

Chapter 3) CF LEVY
The Role of CF Board

A necessary organization for a smooth implementation of the Code

IMO MEPC
Perform the whole implementation of CF Code

CF Board
Support LDCs and SIDS.

CF LEVY
With Uniform Tax Rate

Meeting the Guiding Principle of the Initial Strategy

LDCs
SIDS
3. Our Proposal to IMO

The Role of CF Board

Act as Technical Group for Code amendment in the future

Political Amendment  
Technical Amendment

The CF Board is responsible for researching **Future Amendments** of the Code.
Section 4

Conclusion & Summary
Our Idea Came From…

4.6 The list of candidate measures is non-exhaustive and is without prejudice to measures the Organization may further consider and adopt.

IMO has opened the possibility of various methods *not limited to* measures mentioned in the Initial Strategy.

Unprecedented Trial

- **Technical Measure**
  - EEDI
  - EEXI
- **Operational Measure**
  - EEOI
  - CII
  - ... SEEMP
- **Market Based Measure**

For the MBM, **accurate carbon emission** should be measured.

Source: MEPC 304(72), IMO
4. Conclusion & Summary

MARE NOSTRUM Aims to Propose

with Its Definition & Market Based Measure
Thank You for Your Attention