

Addressing GHG Emissions from International Maritime Transport: The Road Ahead

Maritime LNG Training

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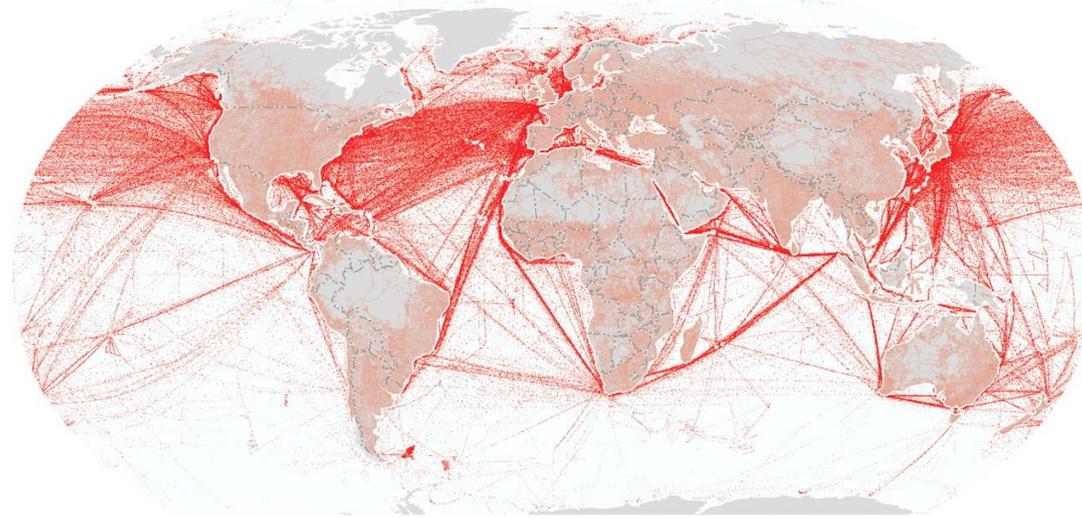
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Outline:

- **Background**
- **Legal Framework for Maritime Transport GHG Emissions (1992-2015)**
- **The Paris Agreement**
- **MEPC 72**
- **Carbon Pricing - Way Forward**

Background



- Around 3% of the global total GHG emissions
- Fast growing source – 50-250% by 2050 (IMO 2014)
- BAU efficiency improvements are insufficient – Market-based Measures/Carbon Pricing

Legal Framework for the Regulation of Maritime Transport Emissions (1992-2015)

- a) Climate Change Regime**
- b) IMO**
- c) EU action**

a) Climate Regime

1992 - UN Framework Convention on Climate Change (UNFCCC)

“stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system...”

(Art 2 UNFCCC)



United Nations
Framework Convention on
Climate Change

a) Climate Regime

Art. 4.1 (c) UNFCCC

*“Promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol **in all relevant sectors, including the energy, **transport**, industry, agriculture, forestry and waste management sectors;**”*

a) Climate Regime

- **Domestic** Maritime Emissions – GHG emissions from fuels used in national maritime transport
 - Included in national totals
- **International** Maritime Emissions – GHG emissions from fuels used in international maritime transport (IMT)
 - Reported separately

a) Climate Regime

➤ 1997 - **Kyoto Protocol**

Excluded IMT from its targets.

*" The Parties included in Annex I shall pursue limitation or reduction of emissions of greenhouse gases 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."*
(Art.2.2 KP)

a) **Climate Regime**

Subsidiary Body for Scientific and Technological Advice (SBSTA)

cooperation in improving data for inventories
reporting progress

Ad Hoc Working Group Long Cooperative Action (AWG-LCA)

within the mitigation chapter: *“cooperative sectoral approaches and sector-specific actions to enhance implementation of art. 4.1(c) UNFCCC”*

Outcome AWG-LCA *“Agrees to continue its consideration of issues related to addressing emissions from international (···) maritime transport”*

Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP)

to develop *‘a protocol, another legal instrument or an agreed outcome with legal force’ to be concluded in 2015*

b) International Maritime Organization



Action: studies, committees, WGs, reporting to SBSTA

3 Pillars:

1&2. Technical and operational

2011 - EEDI , SEEMP, EEOI + Tech Transfer - 2013

3.MBMs:

Discussions suspended in 2013

2016 - MEPC 70 – Roadmap – adopt a strategy by 2018

MEPC 71 - Data Collection

MEPC 72 – Initial Strategy

c) EU action

Steps towards regulating international maritime transport:

2009 - **Directive 2009/29/EC** - deadline 2011

2015 – **Monitoring Reporting and Verification Mechanism**

From January 2018 ship owners and operators to annually monitor, report and verify CO₂ emissions for vessels larger than 5,000 gross tonnage calling at any EU + Norway and Iceland port.

First step to carbon pricing for the sector in the EU

Paris Agreement



- IMT made it to the COP, but drop off the final text
- **No mention** to IMT in the Paris Agreement
- **Not excluded** from the mitigation aims of the agreement
- However, **the main mitigation tool in the agreement (NDCs)** are ill-equipped to deal with international shipping.

Paris Agreement:

Purpose

Article 2

1. This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:

*(a) **Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;***

*(b) **Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production;***

*(c) **Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development.***

2. This Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.

Paris Agreement: Purpose

Article 4

1. In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty.

Paris Agreement

- a missed opportunity to clarify fundamental aspects hindering the regulation of IMT:

In the words of the chairman of the MEPC and the head of IMO's Air Pollution and Climate Change Section of the Marine Environment Division: *'it can be safely claimed that the wording of article 2.2 has been the main reason why the IMO has not yet been able to enact a regime for international shipping in a timely and comprehensive manner.'*

A. Chrysostomou and E.S. Vagslid, 'Climate Change: A Challenge for IMO too', in: R. Asariotis and H. Benamara (eds.), *Maritime Transport and the Climate Change Challenge* (Earthscan, 2012), 81.

S. Karim and S. Alam, 'Climate Change and Reduction of Greenhouse Gases from Ships: An Appraisal', 1:1 *Asian Journal of International Law* (2011), 131.

+	Climate Regime - IMO Regime
Conflicting Objectives	Stabilization GHG v. fostering transport
Conflicting Principles	CBDRRC vs. equal treatment, NMFT
Conflicting Preferences for Regulatory Instruments	MBM vs. technical regulation

Regime Interaction and Climate Change: The Case of International Aviation and Maritime Transport, (Routledge, 2017) B. Martinez Romera

Future Regulation



Action: studies, committees, WGs, reporting to SBSTA

3 Pillars:

1&2. Technical and operational

2011 - EEDI, SEEMP, EEOI + Tech Transfer - 2013

3. MBMs:

Discussions suspended in 2013

2016 - MEPC 70 – Roadmap – adopt a strategy by 2018

MEPC 71 - Data Collection

MEPC 72 – Resolution Initial Strategy

MEPC 72

Initial greenhouse gas strategy for international shipping:

- ➔ to be revised in 2023
- ➔ overall vision for decarbonization of the sector ('urgency' and to "a pathway of CO2 emissions reduction consistent with the Paris Agreement temperature goals")
- ➔ 50% reduction emissions by 2050 (2008 levels)

MEPC 72

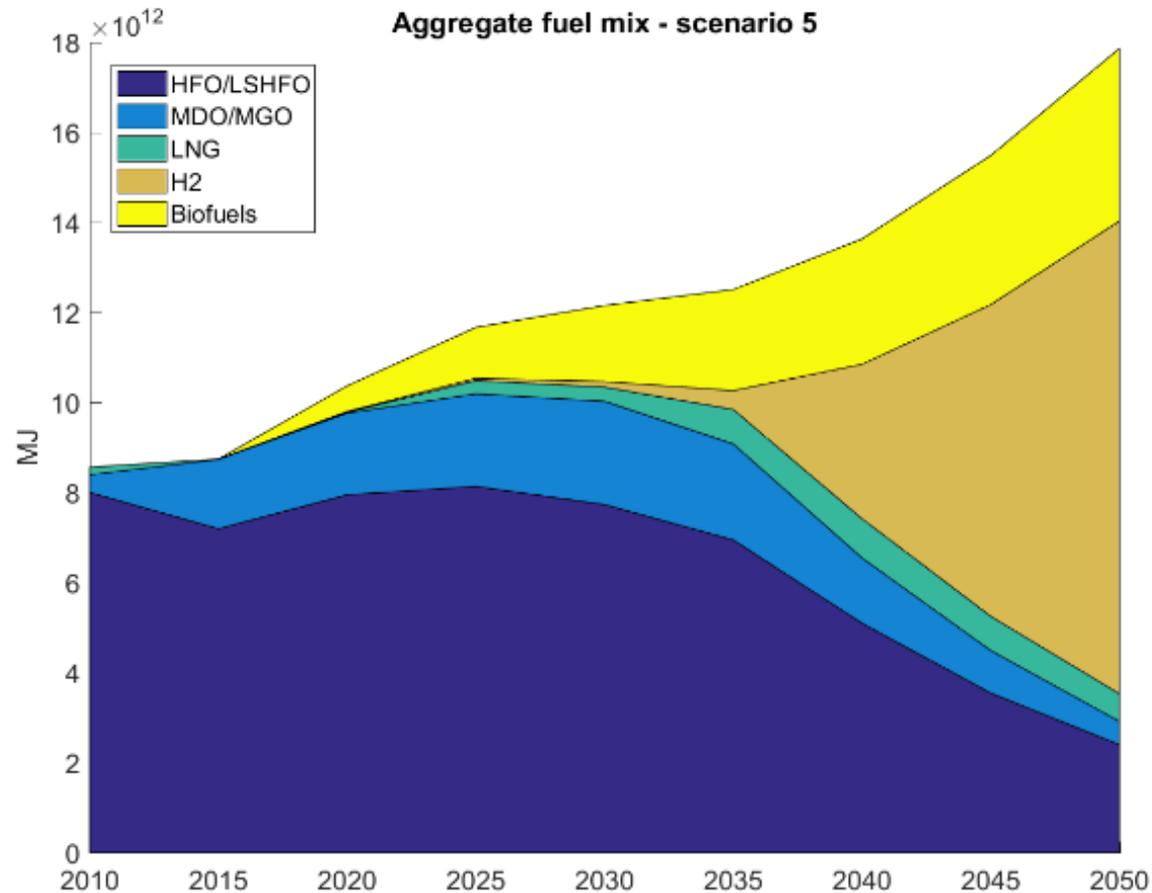
Measures:

- ➔ Short-term (2018- 2023) **New** Energy Efficiency Design Index (EEDI)
Operational efficiency measures, Speed reduction...
- ➔ Mid-term (2023- 2030) - Alternative low-carbon and zero-carbon fuels, further operational efficiency measures, **Market-based Measures**
- ➔ Long-term (2030+) - Development and provision of **zero-carbon or fossil-free fuels** – technology pathway

The role of LNG?

MEPC 72

Fuel mix for a 2 degree compatible pathway



“GloTraM” developed by UCL in the project “Shipping in Changing Climates”

Carbon Pricing

Next step - Putting a price on maritime GHG emissions

A core challenge:

- **Common But Differentiated Responsibility and Respective Capabilities in the Light of Different National Circumstances and Equal Treatment**

Carbon Pricing

Put a price on GHG emissions.

Different ways: Emissions Trading Scheme, Carbon Tax, Offsetting...

Economic signal that would allow the transition to a low-to-zero-carbon shipping

- Internalizing climate externalities
- Triggering necessary technology investments/changes
- Source of revenue
- Lower cost of mitigation

Carbon Pricing

The choice and design of the carbon pricing instrument is key to ensure

- Environmental effectiveness
- No carbon leakage
- No uncertainty for the market

Carbon Pricing

International Carbon Pricing

- Since the Kyoto Protocol: Emissions Trading (IET), Clean Development Mechanism (CDM) and Joint Implementation (JI)
- Paris Agreement. Key role to achieve Nationally Determined Contributions (NDCs) – Paris rulebook
- Regional and domestic Carbon Pricing

Lessons learned from

- 39th ICAO Assembly **October 2016** adopted a **GMBM (AR 39-3)**



Carbon Offsetting and Reduction Scheme for International Aviation (CORSA)

- **Goal is not ambitious enough** (increase in emissions from 2020 levels – carbon neutral growth)
- **Based in offsetting emissions outside the sector**
- **Coverage of the scheme based on routes**
- **3 phases:**
 - pilot (2021-2023) -voluntary**
 - first phase (2023-2026) – voluntary**
 - second phase (2027-2035) – all states above a threshold (0.5 % of total RTK)**
- **Address differentiation – Least Developed Countries, Small Island Developing States and Landlocked Developing Countries - voluntary**

MEPC 72

Guiding principles

- 3.2 Drawing on relevant instruments, the principles guiding the Initial Strategy include:
- .1 the need to be cognizant of the principles enshrined in instruments already developed, such as:
 - .1 the principle of non-discrimination and the principle of no more favourable treatment enshrined in MARPOL and other IMO conventions; and
 - .2 the principle of common but differentiated responsibilities and respective capabilities in the light of different national circumstances enshrined in the UNFCCC, its Kyoto Protocol and the Paris Agreement; and
 - .2 the need to consider the impacts of measures, in particular, on LDCs and SIDSs as noted by MEPC 68 (MEPC 68/21, paragraphs 4.18 to 4.19) and their specific emerging needs, as recognized in the output of Organization's Strategic Plan (SD 1.2, resolution A.1110(30)).

Differential Treatment in International Environmental Law

Absolute Treatment Norms

Differential Treatment Norms

Contextual Treatment Norms

Magraw, Daniel B. (1990)

Differential Treatment in International (Environmental) Law

CBDRRC Principle in environmental (climate) law:

Central Obligations

Provisions on Implementation (Compliance)

Provisions Granting Assistance

Cullet, Philippe (2003)
Rajamani, Lavanya (2006)
Maguire, Rowina (2014)

Differential Treatment in International Environmental Law

	Differential Treatment	Contextual Treatment	Absolut Treatment
Core Obligations	i	iii	
Implementation (compliance)	ii	iv	
Assistance	v	vi	

Martinez Romera B. and Van Asselt, H. (2015)



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- **TRAMEREN** is an **interdisciplinary** network on maritime transport and climate change
- A joint research venture between the **Faculty of Law, University of Copenhagen** and the **New York University School of Law**.
- Started in 2016, more partners, more topics...
 - *I TRAMEREN International Conference on **Maritime Actors and Climate Change: Incentives and Strategies for Voluntary Action** (June 2016)*
 - *TRAMEREN Kick-off Workshop: Advancing the Research Frontier*
 - *Workshop on **Nordic Action for a Transformation to Low-carbon Shipping***
 - *II TRAMEREN International Conference on **Frontiers in Ocean Environmental Governance: Private Actors, Public Goods**. (September 2018)*
 - *Research Stays and Exchanges*

Thank you!



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