



IMO activities on reduction of Air Pollution & GHG emissions from ships

Development of market-based measures for international shipping



CLIMATE CHANGE:
A CHALLENGE FOR IMO TOO!

Marine Environment Division - IMO



International Maritime Organization (IMO)

- The IMO Convention was adopted in 1948 and IMO first met in 1959
- A specialized agency of the UN
- 169 Member States
- Develop and maintain a comprehensive regulatory framework for shipping
- Safety, **environment**, legal matters, technical co-operation, security and the efficiency of shipping



Safe, secure and efficient shipping on cleaner oceans!

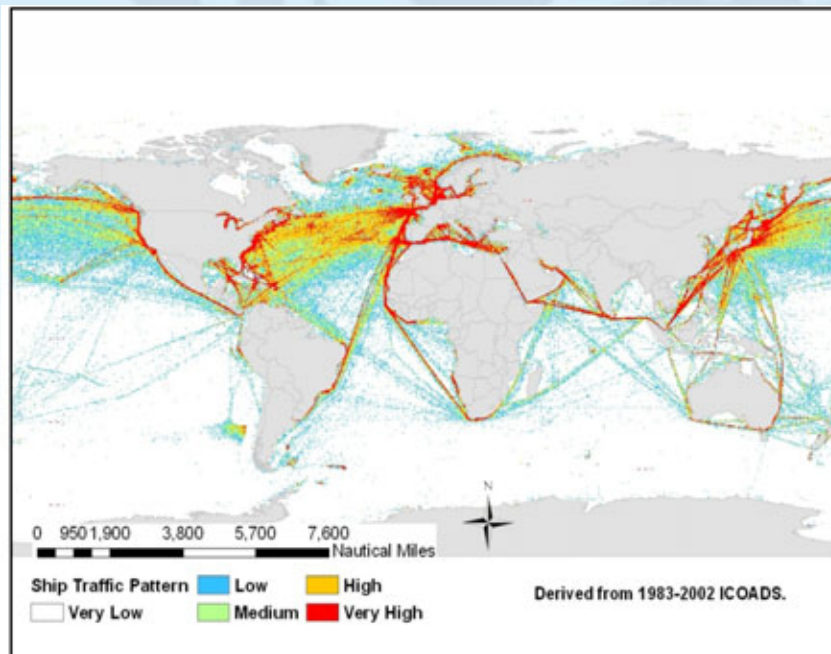
Ship emissions one of the last major ship pollutants to be regulated

Work started at IMO in the late 1980's

Annex VI adopted in 1997, in force in May 2005,
revised 2005 – 2008



Revised Annex VI in force 1 July 2010



- Prohibits ODS in line with the Montreal Protocol
- Regulates exhaust gas: NO_x & SO_x (PM), and cargo vapours from tankers (VOC)
- Energy Efficiency or CO₂ emissions not covered

Resolution A.963(23)

IMO Policies and Practices Related to the Reduction of Greenhouse Gas Emissions from Ships, adopted by Assembly 23 in December 2003

IMO's GHG Work has three distinct routes: Technical - mainly applicable to new ships - EEDI,



Operational - applicable to all ships in operation – SEEMP and EEOI, and Market-based Instruments (MBI) - carbon price for shipping, incentive, may generate funds.

A.963(23) requests MEPC to:

- develop a work plan with timetable – (technical/operational culminated at MEPC 59, the work plan for MBIs culminates at MEPC 62 (Assembly 27))**
- establishment of GHG baseline and develop CO2 indexing methodology**



Distribution of the world fleet March 2008

ships above 400 GT

Flag States	Number of ships	GT	DW
Annex I	33.4%	26.1%	22.82%
Non-Annex I	66.6%)	73.9%	77.18%

Lloyd's Register Fairplay

Article 1(b) of the IMO Convention

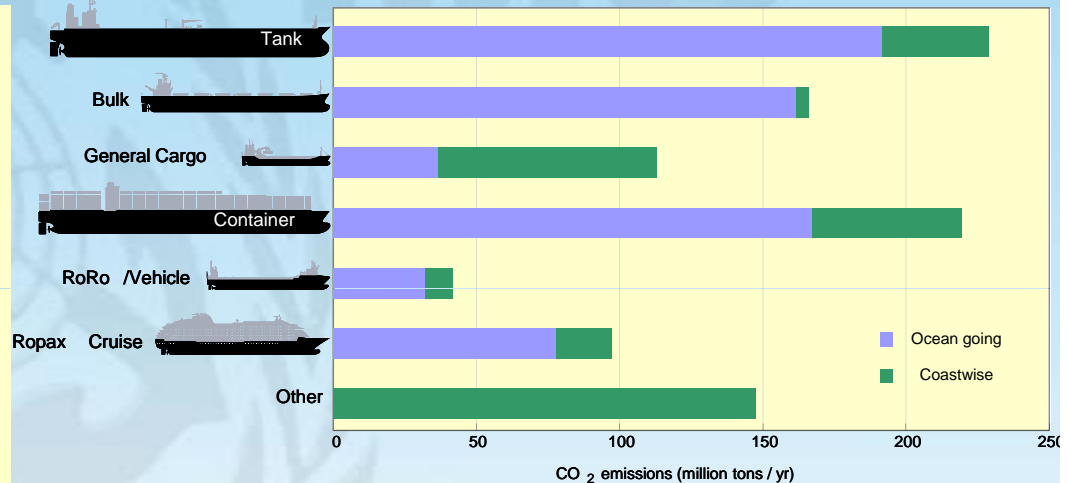
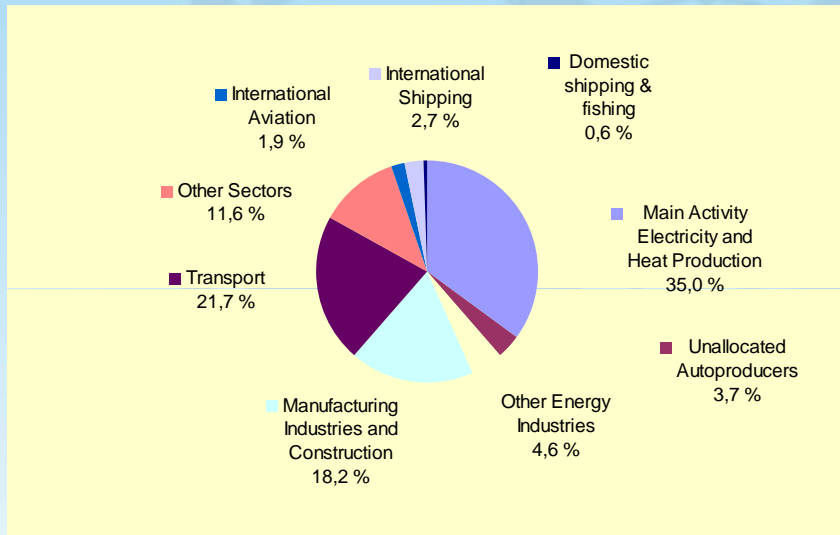
Encourage removal of discriminatory actions promote the availability of shipping without discrimination not be based on measures designed to restrict the freedom of shipping of all flags



Second IMO GHG Study 2009

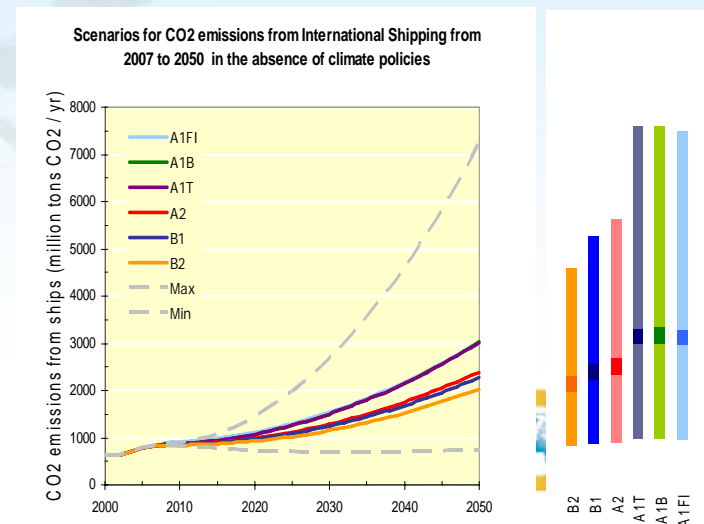


2007 shipping CO2 emissions 870 million tons



Future CO2 emissions:

- Significant increase predicted – 200 300% by 2050 in the absence of regulations
- Demand is the primary driver
- Technical and operational efficiency measures can provide significant improvements but will not be able to provide real reductions if demand continues





Energy Efficiency Design Index

$$EEDI = \frac{\textit{Environmental cost}}{\textit{Benefit for society}}$$



- Cost: Emissions of CO₂
- Benefit: Cargo capacity & transport work

Complex formula to accommodate most ship types and sizes





SEEMP - Ship Energy Efficiency Management Plan

Onboard management tool to include:

- Improved voyage planning (Weather routing/Just in time)
- Speed and power optimization
- Optimized ship handling (ballast/trim/use of rudder and autopilot)
- Improved fleet management
- Improved cargo handling
- Energy management





EEOI - Energy Efficiency Operational Indicator

- An efficiency indicator for all ships (new and existing) obtained from fuel use, voyage (miles) and cargo data (tonnes)



Actual Fuel
Consumption
Index

=

Fuel Consumption in Operation

Cargo Onboard x (Distance traveled)

MEPC 60 (22 – 26 March 2010)

Main topics:

- Mandatory EEDI/SEEMP
- MBM feasibility/impact studies: methodology and criteria
- Work programme 2010:
 - Intersessional meeting EE- WG (28 June – 2 July) dedicated to develop the regulatory text on technical and operational measures
 - Expert Group on MBM



Ten MBM proposals or variants to MEPC 60

International Fund for Greenhouse Gas Emissions from Ships (Denmark et al (Japan)) Contribution - Target line – Funds (Incentive Scheme)

Global Emission Trading Scheme for International Shipping (France, Germany, Norway and the United Kingdom) C & T - Full auctioning – Open

Trading with Efficiency Credits based on the EEDI (United States) All ships – Funds only through toll



No MBM for international shipping (Bahamas); Vessel Efficiency System (WSC); Ship Traffic, Energy and Environment Model (Jamaica); Rebate Mechanism for a MBM for International Shipping (IUCN)

Any funds generated by a market-based instrument under the auspices of IMO should be used for climate change purposes in developing countries

Expert Group to evaluate the MBM proposals

The scope of the study/assessment is to review the practicability of implementing the various options

Identify for each proposed MBM:

- reduction potential
- impact on world trade
- impact on the shipping industry, and the maritime sector in general, giving priority to the maritime sectors in developing countries



The MBM work plan (agreed by MEPC 59) states:

Taking into account the outcomes and conclusions of the study/assessment , MEPC 61 would be able to clearly indicate which MBM it wishes to evaluate further and identify the elements to include

The work plan culminates at MEPC 62 in July 2011

Assembly 27 to decide on future steps, e.g. instruct MEPC to develop the MBM as mandatory



Possible need for a new treaty instrument



Legal framework and treaty text will continue to be developed in parallel with the MBM

The new treaty instrument may be adopted by a diplomatic conference towards the end of 2012

The most uncertain element will be the speed of ratifications and its entry-into-force requirements

Early implementation through an MoU, principally among developed states, may be considered.



Thank you for your attention!



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