European Community Shipowners' Associations

CLIMATE CHANGE AND SHIPPING

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The Shipping Industry – An Overview

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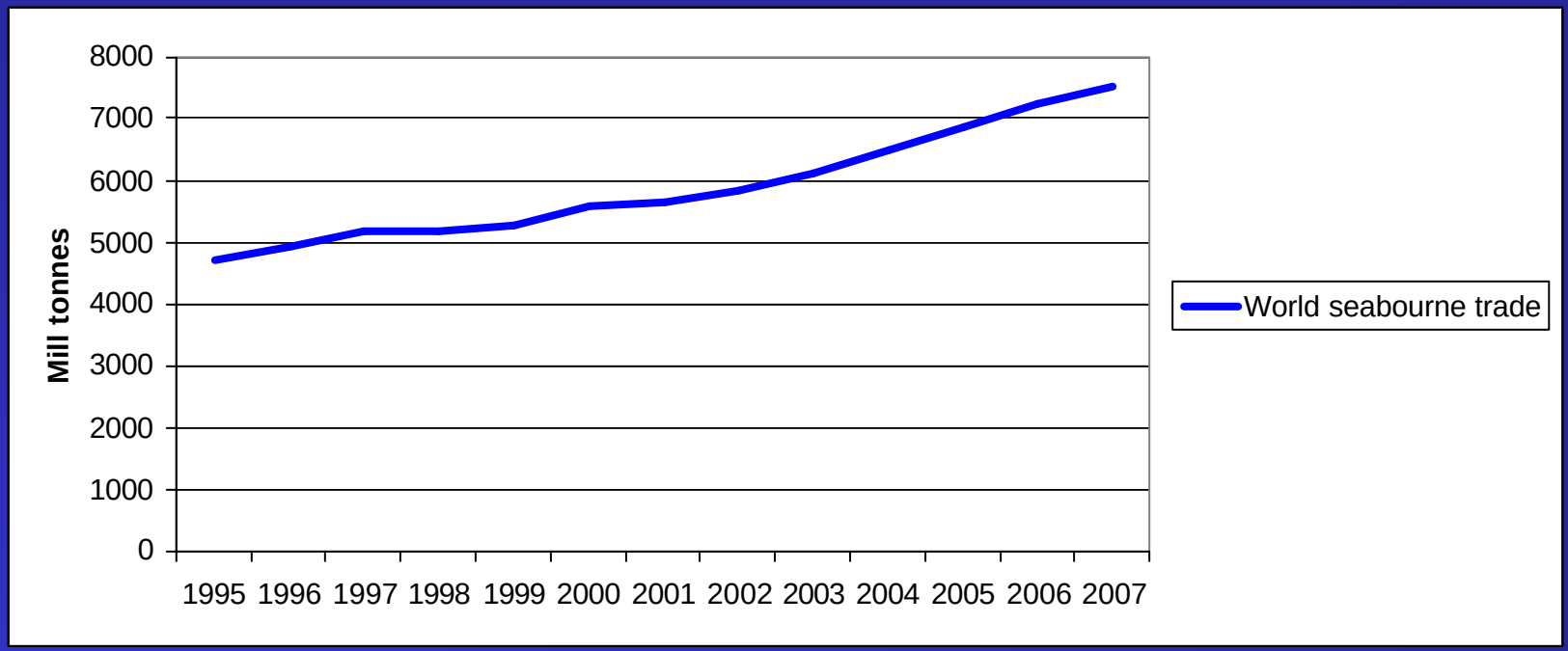
European Community Shipowners' Associations - ECSA

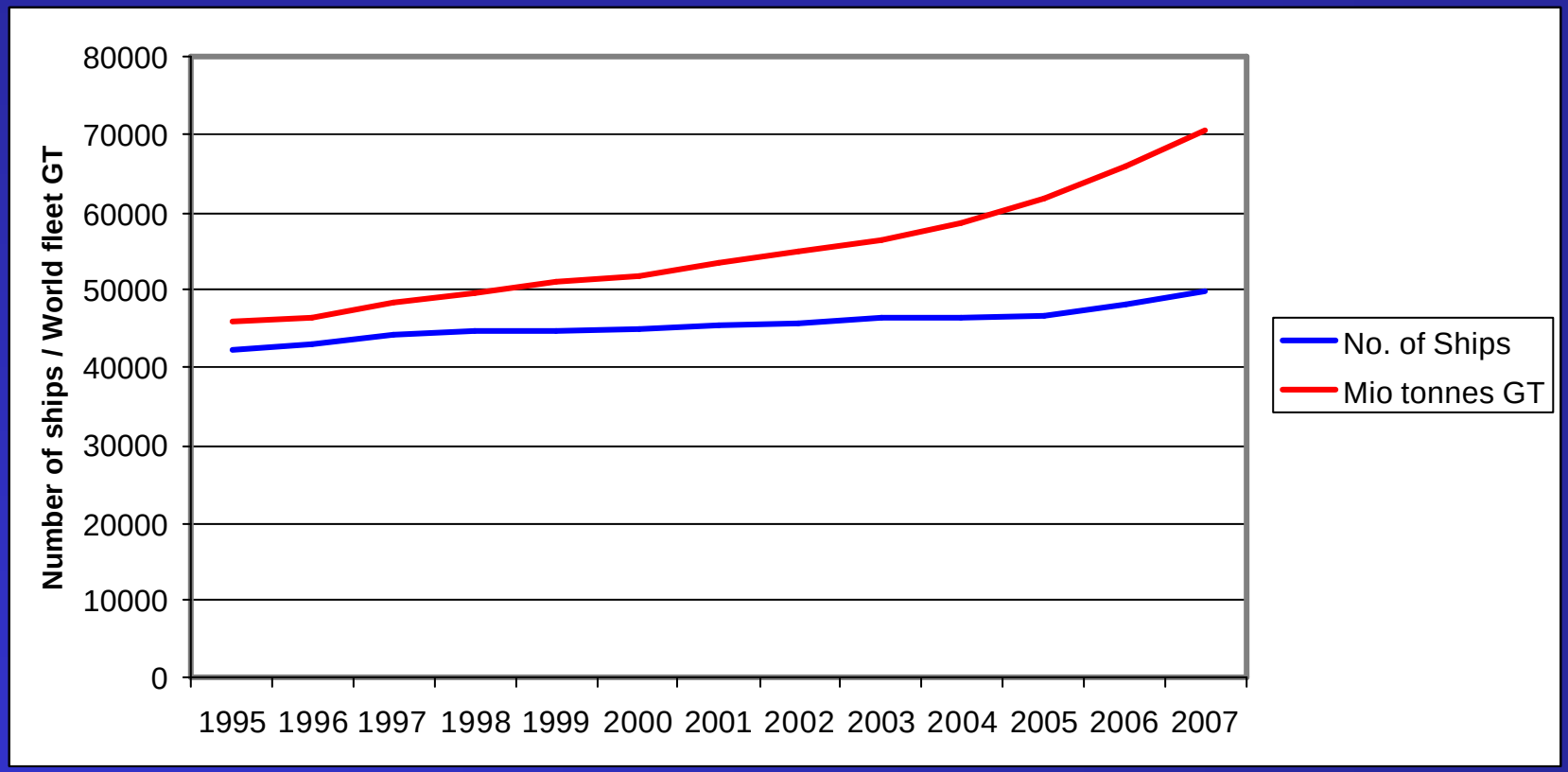
Shipping - An overview

- Shipping, Global Trade and CO_2
- Energy Efficiency of Ships
- ECSA Initiatives
- Climate Regulation for Shipping
- Reduction of CO_2 Emissions
- Conclusions

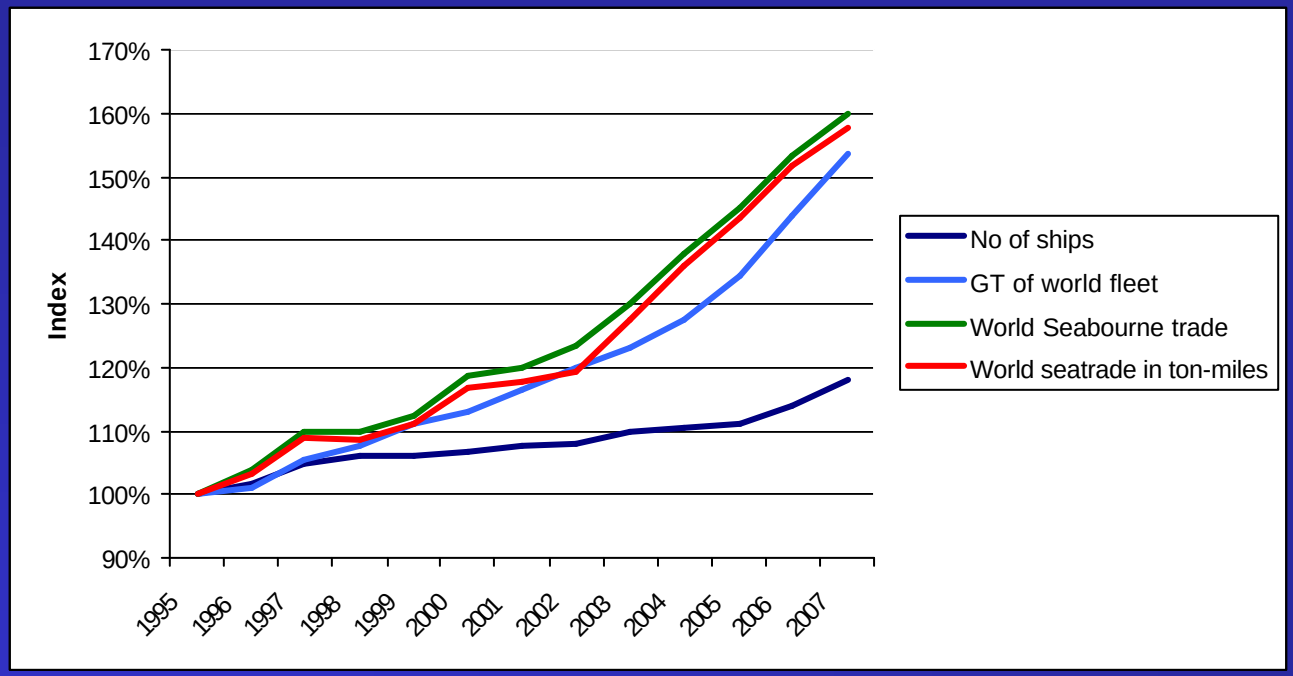
Growth in World Trade



Growth in World Merchant Fleet



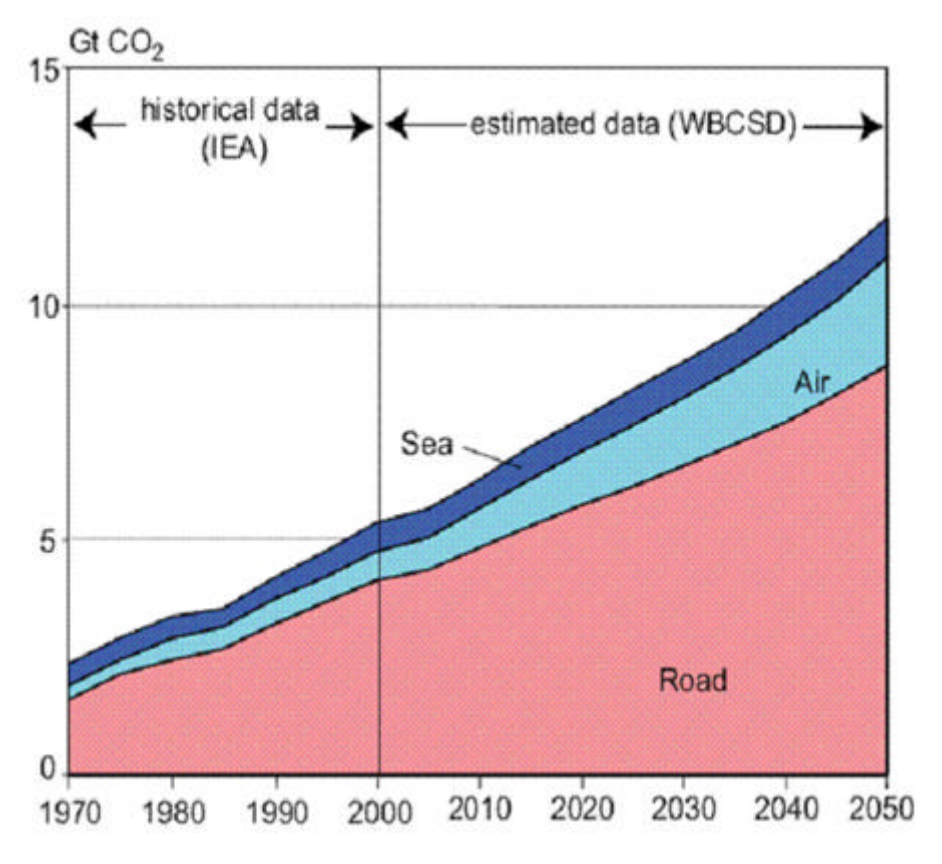
Future Growth ?



CO_2 Emissions - Shipping

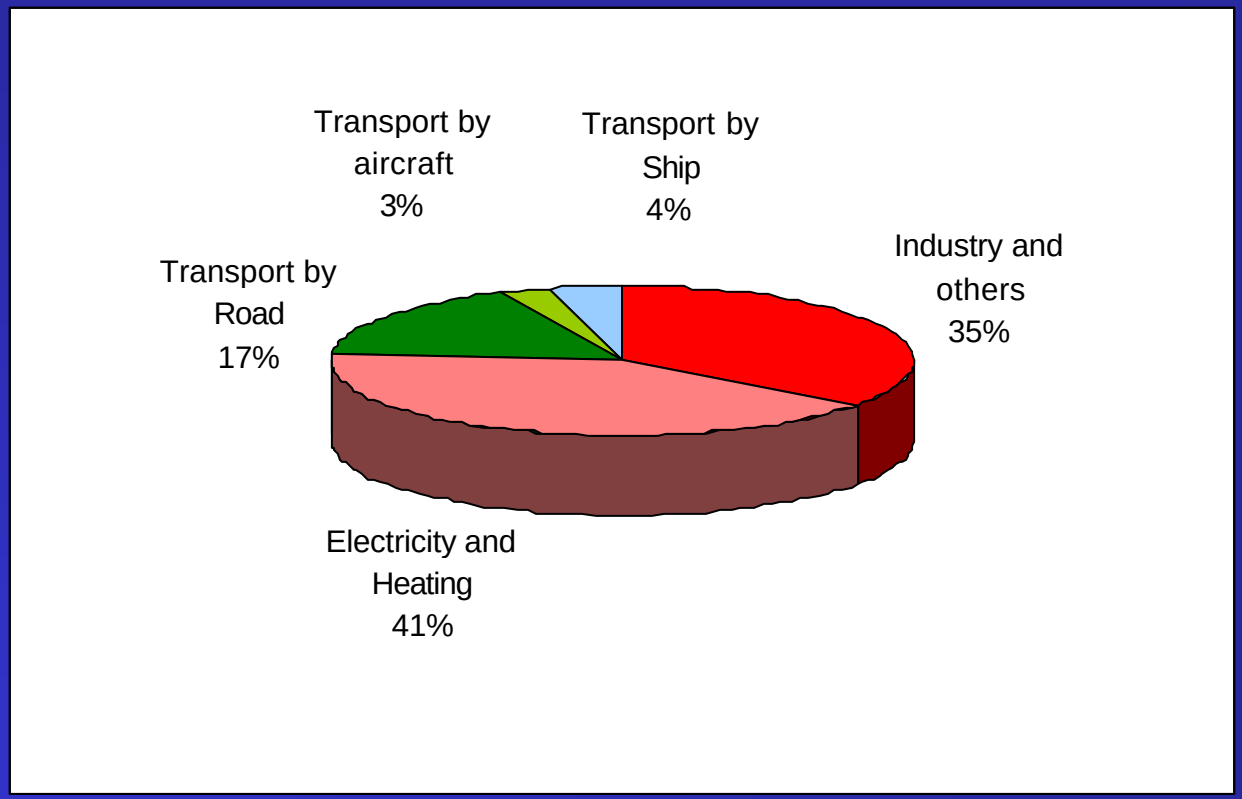
- 2000 – IMO Study of GHG Emissions
  1.8% of Global Emissions (Energy)
- 2007 – IMO Study
  1.120 Mill tons approx. 4%
- 2020 – Estimate
  1.475 Mill tons

CO_2 Emissions - Transport



Source: Transport and its infrastructure. In Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change

CO_2 Emissions – Energy related



Energy Efficiency

- 120g CO_2 per Km

- Citroen C3

Energy Efficiency

- 15g CO_2 per ton-km

- 4,000 TDW Cargo Ship

Energy Efficiency

- 6g CO_2 per ton-km

- 11,000 TEU Container Vessel

Energy Efficiency

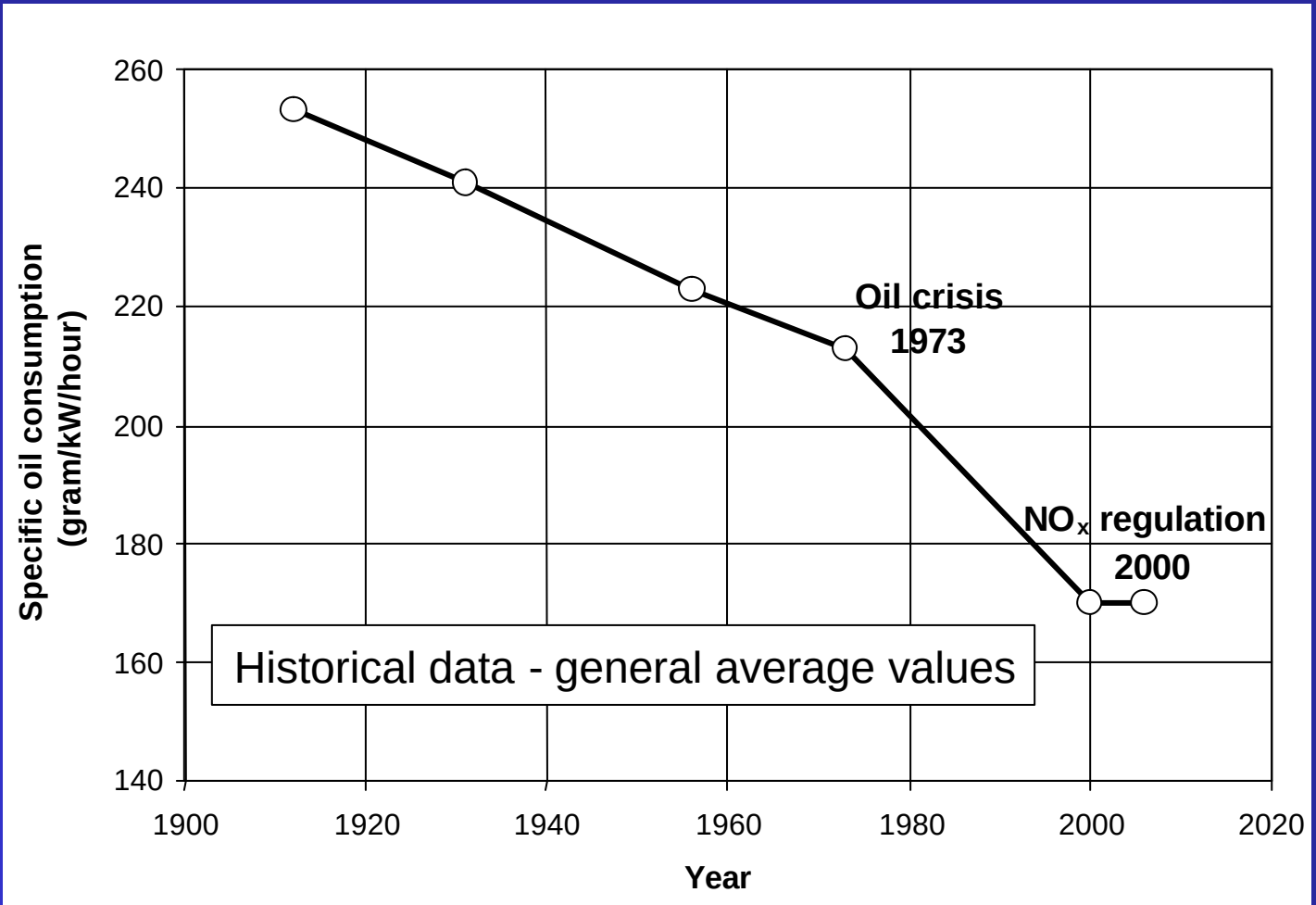
- 3g CO_2 per ton-km

- 75,000 DWT Bulk Carrier

Cargo capacity

- 4,000 TDW Cargo Ship
  - 100 lorries
- 75,000 TDW Bulk Carrier
  - 3,000 lorries
- 11,000 TEU Container Ship
  - 5,500 lorries
  - Approx. 100 km in length

Engine Efficiency



The Need for Improvement

- A good performance is not enough
- CO_2 should be reduced

- What are we doing??

ECSA Initiatives

- Air Emissions Working Group
- ”Climate Change and Shipping”
- ETS Expert Group
- Participating in Inter Industry Work

Future regulation

- Regulation must be **flag neutral** to ensure a level playing field for EU shipping.
- This should be agreed internationally.
- Regulation must focus on relative reduction for continuously improving efficiency of the individual ship.
- Absolute reduction objectives are not possible given the growth in world trade.
- Regulation must ensure the free choice of method via goal based standards to promote innovation and cost effective solutions.

Future Regulation

- IMO Timetable
  - April 2008 MEPC 57
  - June 2008 Intersessional Oslo
  - October 2008 MEPC 58
  - ? Intersessional ?
  - June 2009 MEPC 59

Reduction of CO_2 emissions

- Technical options
  - Present options
  - Possible future options
- Operational measures

Reduction of CO_2 emissions

- Technical options
  - Better efficiency of power plant
  - Waste heat recovery
  - Better hull and propeller design
  - Gas (LNG), bio fuel
  - Fuel cells, nuclear power
  - Solar energy, wind power

Reduction of CO_2 emissions

- Operational options
  - Speed optimization
  - Weather routing
  - Increased hull and propeller maintenance
  - Optimization of ship/port operation
  - Speed reduction

Conclusions

- Low CO_2 emission per transported unit
- International regulation is a must
- Energy efficiency of ships to be improved
- Shipyards and Equipment suppliers have challenges – so do shipowners!
- R&D!

Shipping is part of the solution

Thank you
for your attention