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Solutions for
environment,
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Climate policy for shipping

Scope for market based instruments

Jasper Faber, 5 November 2008



CE Delft

- Independent, not-for profit consultancy
- Transport, Energy, Economy
- 10+ years of experience with environmental policies for shipping
- EC, national governments, ports



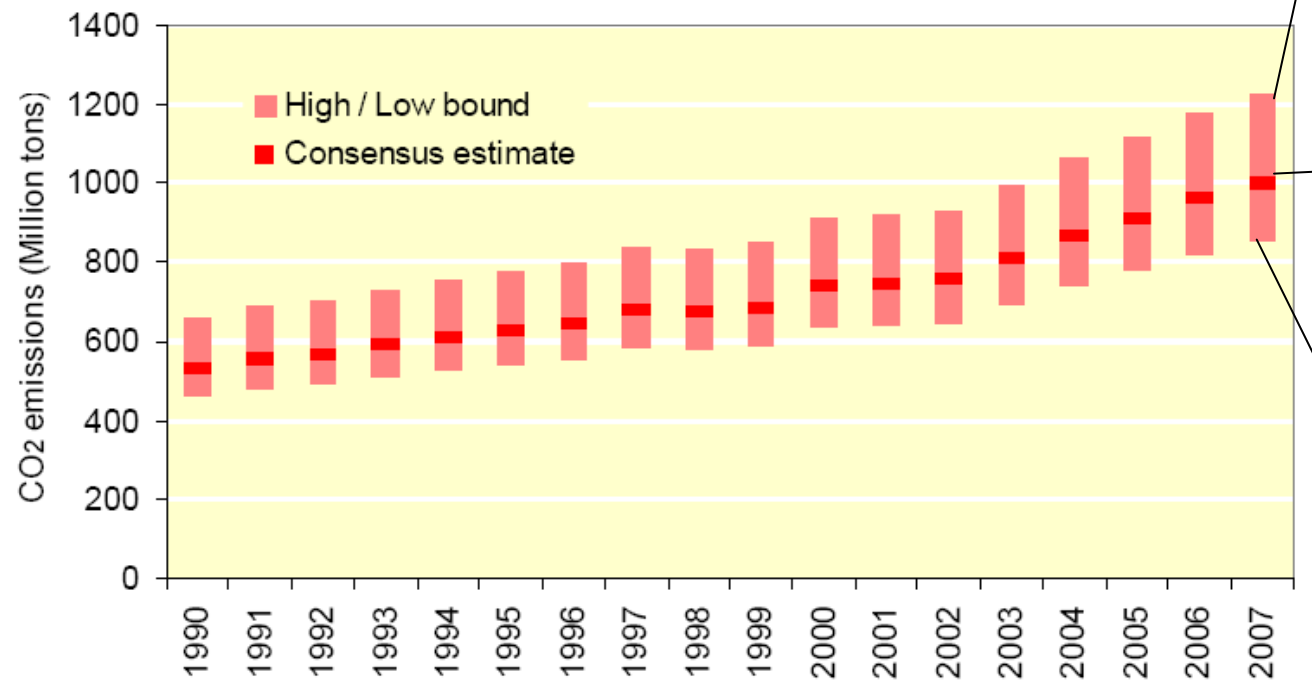


Outline

- Shipping and climate change
- Options to reduce CO₂ emissions
- Overview of policy instruments
- Feasibility of policy instruments
- Conclusion



Shipping and climate change



1224
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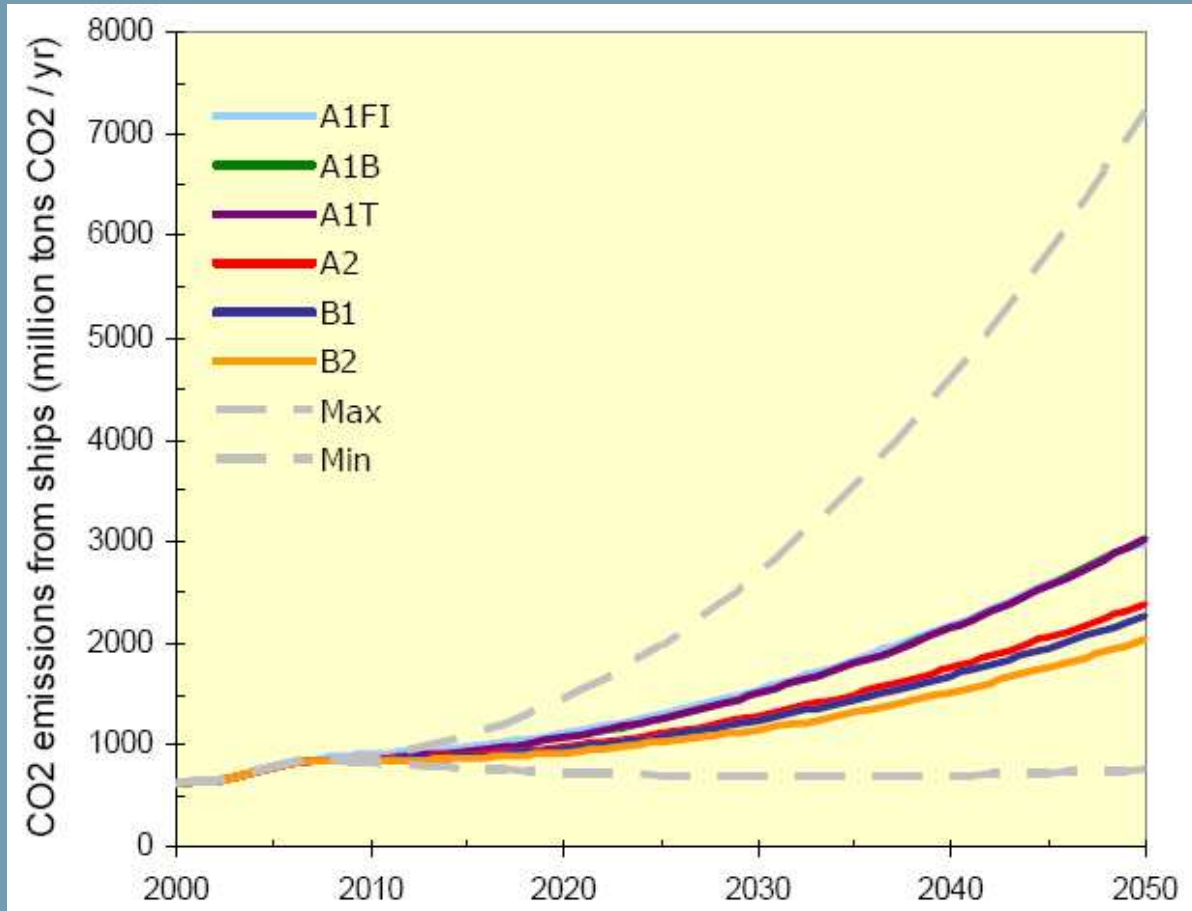
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MARINTEK et al., 2008



Shipping and climate change



MARINTEK et al., 2008

**High
growth
High
Speeds**

**Efficiency
Improved
Slow
Steaming
Low
growth**



Options to reduce CO₂ emissions

- Increasing ship efficiency, e.g.:
 - Hull design
 - Better maintenance
 - Alternative power (wind, biofuels)
 - Slow steaming
- Improving logistics, e.g.:
 - Increased load factors
 - Slow steaming
 - Improved port planning
- Reducing demand



Overview of policy instruments

- Global policy instruments
 - Mandatory design efficiency standard
 - Global (cap-and)-levy
 - Global emissions trading system
- EU policy instruments (2006)
 - Mandatory performance standard
 - Differentiated harbour dues
 - Inclusion in EU ETS
 - NOTE: currently under revision



Global policy instruments

- Design efficiency standard
 - Formula discussed in IMO
 - Applicable to non annex I countries?
 - Possible instruments
 - Mandatory standard value
 - Efficiency standard cap-and-trade
 - Differentiated charges
 - Would improve efficiency
 - Could reduce marginal costs of transport → rebound effect
 - Unlikely to yield emission reductions



Global policy instruments

- Global (cap-and)-levy
 - Global fuel charge
 - Revenues used for
 - Adaptation
 - Offsets
 - Differentiation according to destination of cargo?
 - Would reward all emission reduction measures
 - Reduce global emissions via offsets



Global policy instruments

- Global emissions trading
 - Global cap-and-trade maritime
 - Links to other ET systems
 - Revenues used for
 - Adaptation
 - Would reward all emission reduction measures
 - Reduce emissions in the system



Global policy instruments

	Effective	Cost-effective	Barriers to implementation
Standard	-/0	0	Non Annex I
Levy	0/+	+	Non Annex I Global levy
Emission Trading	+	+	Non Annex I Global system



EU policy instruments (2006)

- Mandatory performance standard
- Differentiated harbour dues
- Inclusion of maritime emissions in EU ETS



EU policy instruments (2006)

- Mandatory performance standard
 - Efficiency incentive
 - Allows some flexibility to operators
 - Which standard?
 - Design index
 - IMO CO₂ index
 - What would the baseline be?



EU policy instruments (2006)

- Differentiated harbour dues
 - Efficiency incentive
 - Allows more flexibility to operators
 - Economic instrument based on existing institutions
 - Differentiation base?
 - Design index
 - IMO CO₂ index
 - Legally possible?



EU policy instruments (2006)

- Inclusion of maritime emissions in EU ETS
 - Ship legally responsible, in practice ship operator
 - Include all CO₂ emissions on voyages to EU ports
 - Initial allocation?
 - Scope for evasion?
 - Impact on EU ETS?



EU policy instruments (2006)

	Effective	Cost-effective	Barriers to implementation
Standard	-/0	0	Baseline
Differentiated dues	-/0	0/+	Baseline Port competition
Emission Trading	0/+	+	Allocation Evasion EU ETS



Conclusion

- Shipping needs to contribute to emission reductions
- Efficiency improvements necessary but not sufficient
- Market based instruments on CO₂
 - Reward efficiency improvements
 - Reward logistics improvements
 - Reward demand reduction
 - Can be designed to offset emission growth

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Thank You

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Global differentiated cap-and-levy

- **Global** (as per IMO) but **Differentiated** (as per UNFCCC)
- Policy can be based on cargo imported
 - Applies to **all ships**, irrespective of flag or nationality
- Only two destinations are defined:
 - Annex I countries, and
 - Non-Annex I countries
- Destinations are treated as per climate change regime in force. Currently it means:
 - Annex I destinations are included fully (100%)
 - Non-Annex I destinations are not included
 - *Proposal by A. Stochniol (2008)



Global differentiated cap-and-levy

- A ship transporting goods to both Annex I and non-Annex I countries is partially included
 - It is included in proportion to the **ship's share of goods unloaded in Annex I** countries
 - Destined to Annex I for transhipments
 - This means that only the Annex I share of ship's CO2 emissions is in scope
- Worldwide, the Annex-I share of unloaded goods is 60%
 - Therefore on day one of a scheme driven by such a policy 60% of maritime emissions will be covered.