

The 5 recommended policy options by the 2009 CE DELFT Study: "Technical support for European Action to reducing Greenhouse Gas Emissions from international maritime transport"

In 2008 the EC commissioned a study by CE DELFT to assess the most suitable European policy options to tackle maritime GHG emissions. This study and other studies such as the impact assessment and market barriers study will help the Commission prepare a proposal so as to include international maritime emissions in its reduction commitment.

CE DELFT is an independent research and consultancy organisation specialised in developing structural and innovative solutions to environmental problems. It led the study in cooperation with DLR, Fearnley Consultants, Nature Associates, Manchester Metropolitan University, Marintek, Norton Rose, Oko Institut, Oko-Recherche, DNV.

The report is available on the following website:

http://www.cedelft.eu/publicatie/technical_support_for_european_action_to_reducing_greenhouse_gas_emissions_from_international_maritime_transport/1005

The CE DELFT study identified and ranked the 5 most suitable policy instruments for European action - these are briefly described below:

1. A cap-and-trade system for maritime transport emissions

Under this scheme, shipowners are required to report emissions and surrender allowances for emissions emitted on voyages to EU ports: starting from the port of loading for ships with a single bill of lading and the last port of call for ships with multiple bills of lading or non cargo ships.

The ship is seen as the accountable entity and enforcement therefore targets both the shipowner and the ships. The allocation of allowances combines free allocation and auctioning.

In a cap-and-trade system the emissions are capped and the price of allowances provides an incentive to reduce emissions. It is estimated however that by 2030 the impact on shipping emissions is likely to be small. Moreover, there is a risk of avoidance for ships with multiple bills of lading, but overall the emissions subject to avoidance appear limited as the largest share of emissions originates from ships with a single bill of lading and / or intra-EU voyages.

2. An emissions tax with hypothecated revenues

Under this policy an emissions tax is collected in EU ports, creating an incentive to reduce CO₂ emissions. The tax revenues are hypothecated for emissions reductions outside the shipping sector. This compensates the limited impact on shipping emissions reductions, as efficiency gains are offset by growing demand.

Similarly to the cap-and-trade system, the responsible entity for paying the tax is the shipowner, the geographical scope covers all voyages to EU ports, starting from the port of loading for ships with a single bill of lading and the last port call for ships with multiple bills of lading or non cargo ships.

3. A mandatory efficiency limit for ships in EU ports

Under this policy, EU ports impose an efficiency limit on incoming ships. The Energy Efficiency Design Index (EEDI) could become a good indicator/basis. The geographical scope is confined to EU ports as the efficiency limit can only be enforced by EU ports.

This policy can in principle improve the efficiency of ships but emissions can continue to rise if growth outpaces efficiency improvements. The scope of avoidance is nevertheless large.

4. A baseline-and-credit system based on an efficiency index

Under this scheme, efficient ships generate credits while inefficient ships surrender credits. The owner of an efficient ship can sell credits to the owner of an inefficient ship. Credits are generated or surrendered in proportion to the difference of a ship's EEDI with the baseline value for that ship and in proportion to the miles sailed from the last port of loading to an EU port. The traded unit is based on the EEDI.

Overall, the efficiency of ships is improved but emissions can continue to rise if growth outpaces efficiency improvement.

5. Voluntary action

Under this policy, the EU and/or its Member States promote the use of a Ship Energy Efficiency Management Plan (SEEMP) by ships. The SEEMP might draw the shipowners attention to invest in cost effective emissions reduction measures – but is overall expected to generate no or very limited impacts beyond business-as-usual emissions.

The annexes to the report provide a wealth of information relating to the climate impact and regulation of maritime transport.

List of annexes:

- Annex A: Technical Appendix MACC
- Annex B: EU's competencies to regulate international shipping emissions
- Annex C: Taking responsibility: setting a CO₂ emissions cap for the aviation and shipping sectors in a 2-degree world
- Annex D: Emissions of black carbon from shipping and effects on climate
- Annex E: Impact of NO_x and other ozone precursor emissions from ships on the chemical composition and climate
- Annex F: Ship aerosol impacts on climate and human health
- Annex G: Greenhouse Gas Emissions from Port Congestion
- Annex H: Potential for evasion
- Annex I: Ship-to-ship transfers
- Annex J: Ad-hoc paper on bunkers in possible US cap-and-trade schemes