

# AIR & SHIPPING

*Air pollution from international shipping is estimated to cause about 50,000 premature deaths per year in Europe at an annual cost to society of more than €58 billion.*

Although generally considered as the most carbon efficient mode of transport, shipping is a growing source of dangerous air pollution. Emissions of sulphur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>) and particulate matter (PM) (including Black Carbon) are of particular concern. They are due mainly to the poor quality fuel used in maritime transport and to the weak emission standards applicable to ship engines.

Because these emissions have been left unregulated for too long, the share of shipping emissions is growing dramatically as the pollution from other sectors is decreasing: if the trend is not reversed NO<sub>x</sub> emissions from ships around Europe are likely to exceed all emissions from all EU land-based sources by 2020 [1]. Because shipping emissions often take place in coastal areas and large city ports, they impact greatly on human health and our environment [2].

With the exception of SO<sub>x</sub>, emissions from international shipping are poorly regulated in Europe and the EU heavily relies on the standards adopted at international level under the MARPOL Convention on the prevention of air pollution from ships. However, these international standards are either too weak to address the issue or are simply not implemented by EU Member States.

## EU legislation

At the moment, only the MARPOL provisions on SO<sub>x</sub> emissions are covered by EU law. Emissions of primary PM and NO<sub>x</sub> from international shipping are not regulated by the EU. In addition to adopting specific EU standards for the regulation of shipping emissions, Member States can request the International Maritime Organisation (IMO), the UN body regulating shipping activities, to recognise their seas as Emission Control Areas, which are zones where stricter emissions standards apply.

## FACTS AND FIGURES



### AIR POLLUTION FROM INTERNATIONAL SHIPPING

is estimated to cause about 50,000 premature deaths per year in Europe at an annual cost to society of more than €58 billion [3].



### 2700 TIMES MORE SULPHUR

The fuel used in international shipping contains on average 2700 times more sulphur than the fuel used for road vehicles.



It is estimated that implementing the stricter ship fuel sulphur standards agreed by the IMO in 2008 will save up to 26,000 lives per year in the EU by 2020 [4].

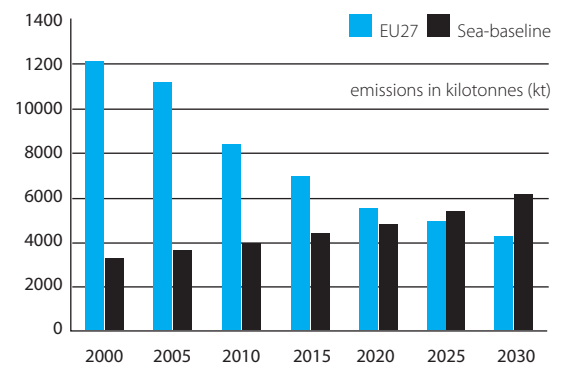


In parts of Northern Europe ship emissions are responsible for more than 90% of the exceeding of critical loads for eutrophication and for acidity [5].

## NO<sub>x</sub> emissions Projections - Land vs Shipping

**Figure:** Projected emissions up to 2030 of NO<sub>x</sub> from international shipping in the sea areas surrounding Europe (black) and total from land-based emission sources in the EU's 27 member states (blue).

Source: IASA 2010



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## WHY IS THE EU LAGGING BEHIND ON EMISSION CONTROL?

Emissions from international shipping can be controlled by the IMO, but also by regional/national measures or regulation. One of the key elements of IMO regulations on air pollution is the Emission Control Areas (ECAs), the “low emissions zones of the seas” designated by the IMO upon request of Member States. The strictest IMO regulations apply in these zones. Until now, only the Baltic Sea and the North Sea (incl. the Channel) have been designated as SO<sub>x</sub> ECAs in Europe. The Irish Sea, the Atlantic, the Mediterranean and the Black Sea remain left out. Overall, the EU compares very poorly with the US on shipping emission control. In 2010, the United States and Canada requested the designation of a full SO<sub>x</sub> and NO<sub>x</sub> ECA along the North American coastline (extending to 200 nautical miles into the sea).



## PRICING EMISSIONS TO INCENTIVISE EFFICIENCY: THE EXAMPLE OF THE NORWEGIAN NO<sub>x</sub> FUND



### NORWAY

decided to put a price on emissions to incentivise companies to reduce them.

The NO<sub>x</sub> fund prices emissions at a level of €0,5/kg of NO<sub>x</sub> emitted.



Confronted with the important problem of NO<sub>x</sub> emissions, Norway decided to put a price on emissions to incentivise companies to reduce their emissions. Industry stakeholders are in essence left with two choices, either pay a tax on their NO<sub>x</sub> emissions or pay a lower amount as a contribution to a fund (the so called NO<sub>x</sub> fund) which is ultimately used to finance cost-effective NO<sub>x</sub> emission control measures. Shipping operators have mostly decided to take part in the NO<sub>x</sub> fund and most of them were in return given subsidies to retrofit abatement technologies or to adapt their engines and operations to less emitting fuels such as liquefied natural gas. This measure contributed to emissions reductions in the Norwegian shipping sector.

## RECOMMENDATIONS

- Ensure at the very least the full implementation of the provisions contained in MARPOL Annex VI in particular on SO<sub>x</sub> and NO<sub>x</sub> emissions.
- Make all European sea areas combined SO<sub>x</sub> and NO<sub>x</sub> Emission Control Areas.
- Incentivise further reduction of NO<sub>x</sub> emissions from the entire fleet (i.e. not only new ships) by establishing mandatory NO<sub>x</sub> emission standards or by pricing NO<sub>x</sub> emissions for all ships entering EU ports.
- Ensure existing emissions limits in Europe are complied with - in particular the EU sulphur in marine fuels directive. Make sure that sufficient checks are made in ports and that the compliance with the standards is respected.
- Adopt ambitious emission reduction commitments in the revised National Emissions Ceilings Directive. Emission reduction commitments must go beyond the Gothenburg Protocol and aim to achieve the health and environmental objectives of the EU's 6th and 7th Environment Action Programmes by 2030.

### More information

- Air Pollution from Ships (2011) by AirClim, Seas At Risk, Bellona Foundation, North Sea Foundation, Transport & Environment and the EEB
- T&E's activities on shipping: T&E website
- Publications by the Air Pollution & Climate Secretariat: [www.airclim.org](http://www.airclim.org)
- Cleaner shipping (2011) by the Danish Eco Council
- NABU's website: campaign on emissions from cruise ships and clean air in ports campaign

For footnotes, please refer to separate reference sheet and to the EEB website.