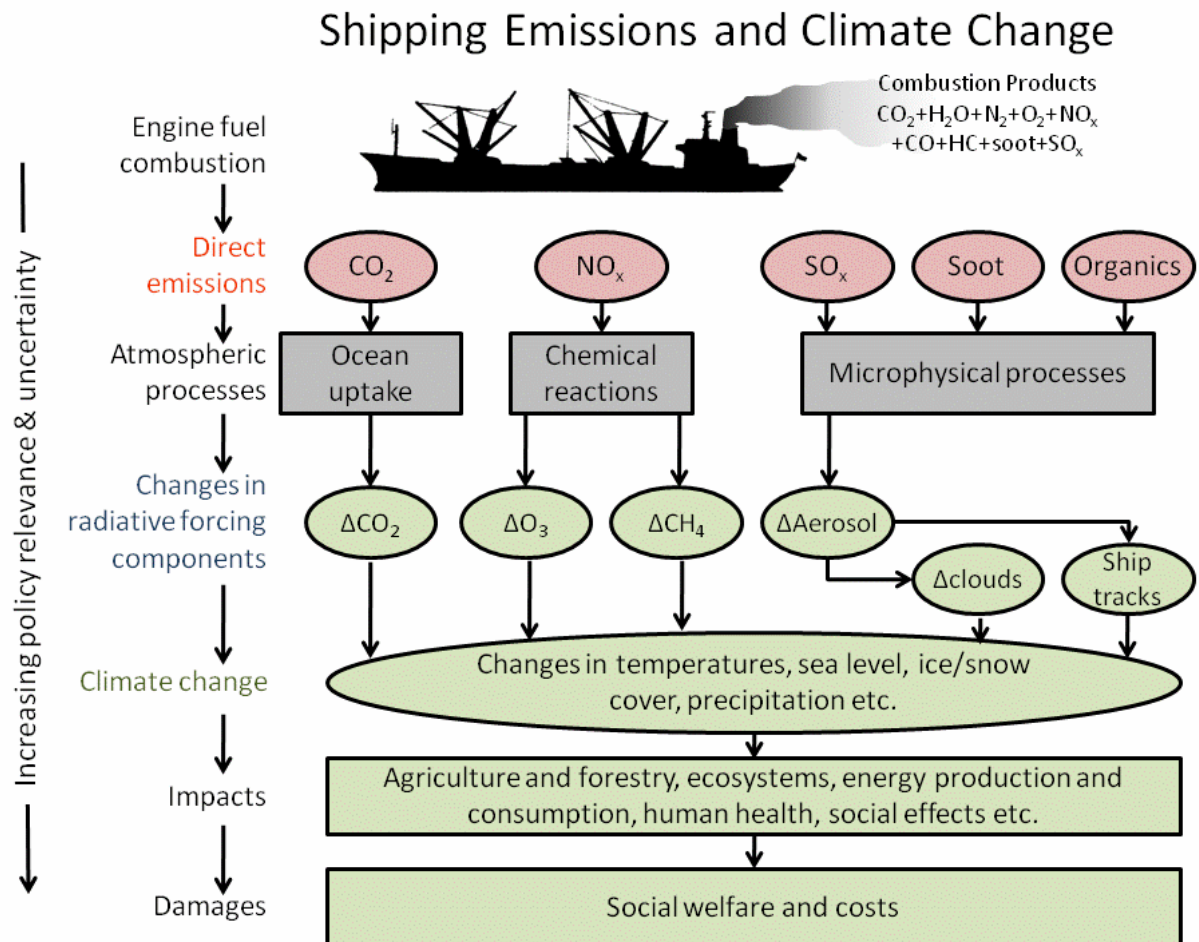


Greenhouse Gases

What are Greenhouse Gases?

Carbon dioxide (CO₂) is the most significant GHG emitted by ships both in terms of quantity and of global warming potential. Other exhaust emissions from ships are in the atmosphere for only days. The life of CO₂ in the atmosphere can be in excess of 300 years and in terms on its effects on global temperatures it can be decades. Greenhouse gases such as CO₂ lead to positive radiative forcing and to long lasting global warming. Other exhaust gases are precursors to CO₂ and may contribute to impairment of the ecosystem including nitrogen nutrient loading, acidification, smog caused by NO_x and VOC and ozone depletion.

What are the effects?



Health Considerations

There are few studies on the negative health effects of exhaust emissions from vessels and most data available has been based on comparisons with public health data and studies carried out in other fields.

- Particulate Matter (PM) and ozone-related human health impacts include premature mortality, chronic bronchitis, increased hospital admissions, acute respiratory symptoms. Particulate Matter may be either fine PM (2.5) or coarse PM (10) and whilst the coarse PM is

considered the most dangerous to the health of individuals, the World Health Organisation (WHO) does not identify any threshold that may be considered safe.

- Carcinogens are normally associated with volatile organic compounds that may be in fuel emissions particularly where combustion is poor which is more likely to be an issue with vessels' cargo. Evidence, however, is that ozone exposure contributes to cardiopulmonary-related mortality.

- It has been estimated that PM emissions from commercial ships could be linked to 60,000 premature deaths annually. In the application for an emissions control area (ECA) around USA and Canada it is estimated that currently ship emissions within the ECA account for 11,500 premature deaths, 12,000 hospital admissions and 580,000 days off work. The submission believes that the ECA would reduce the non-fatal health impacts by 78% and avoid between 3,400 – 7800 premature deaths in 2020.
- The Flag of Convenience system accepts that the flag a ship flies need have no genuine link to the owner of the vessel. This effectively allows owners of over 50% of vessels under FOCs to minimise taxes, reduce crew costs and generally escape responsibilities for crew and their own country of origin.
- Of the ten top trading nations only one (China) is classed a developing country, whereas, of the top ten ships registered by tonnage only one (Greece) is considered a developed country.

Policy Options

- Technical and operational options include the introduction of the energy efficiency design index, EEDI and the energy efficiency operational index, EEOI. With the improvement of engines, hulls, propellers power systems and the use of solar power and wind assistance, the technical and operational options are favoured by the industry and may give between 25-75% efficiency improvements.
- If the climate is to be stabilized at no more than 2°C warming over pre-industrial levels and emissions from shipping continue as projected, they would constitute between 12-18% of the total global CO₂ emissions in 2050 with a chance of success at less than 50%.

Market Solutions

- There are two primary market based instruments being considered by the IMO. They are a maritime emissions trading scheme (METS) and an International Compensation Fund (ICF). The difference in these options is the way in which revenue is raised; the ICF is raised by a fuel levy whereas the METS raises revenue by auctioning allowances.
- The alternative method being proposed by the EU requires capping emission levels and paying subsequent levies to the EU emission trading system.

Application of Kyoto Protocol in Maritime Situation

- The Kyoto Protocol establishes the principle of 'common but differentiated responsibility' recognising differences in the contributions of developed countries and developing countries. The Flags of Convenience (FOC) system of the IMO and their basic principle of 'no more favourable treatment' is totally contrary to the Kyoto principle. Within the IMO many developing countries would wish to benefit from a market based solution, however, it would only lead to an increased exodus from national flags.

- It is obvious that within the FOC system the distribution of any fund such as the International Compensation Fund (ICF) to shipping, or any subsidy to developing countries based on flags ships are flying to shipping related industries, will only exacerbate what is already an inequitable system and would in effect be classified as 'carbon leakage'.
- There are approximately 1.2 million seafarers currently working in the world international fleet predominately from labour supply, developing countries. The FOC system deprives many of these seafarers of a fair wage and social provisions. This is generally a globalised, casualised workforce that may operate under almost any flag but are unlikely to directly benefit from any carbon trading or levy system.
- Given the major pressure on shipping and their crews to comply with ever-more stringent maritime environmental legislation, seafarers are extremely conscious of their responsibility to the environment. The unfortunate situation however is that the public and political perception of the shipping industry is not sympathetic when there is an accident and too often the seafarer is unfairly criminalised.

The ITF Seafarers' Section is actively involved in addressing the issue of Greenhouse gases in a number of forums, including the International Maritime Organisation (IMO) and will be attending UNFCCC COP 15 in December 2009 as part of an ITF Delegation.

For further information, please contact:

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