

Trade and Environment Briefings: International Transport



International Centre for Trade
and Sustainable Development

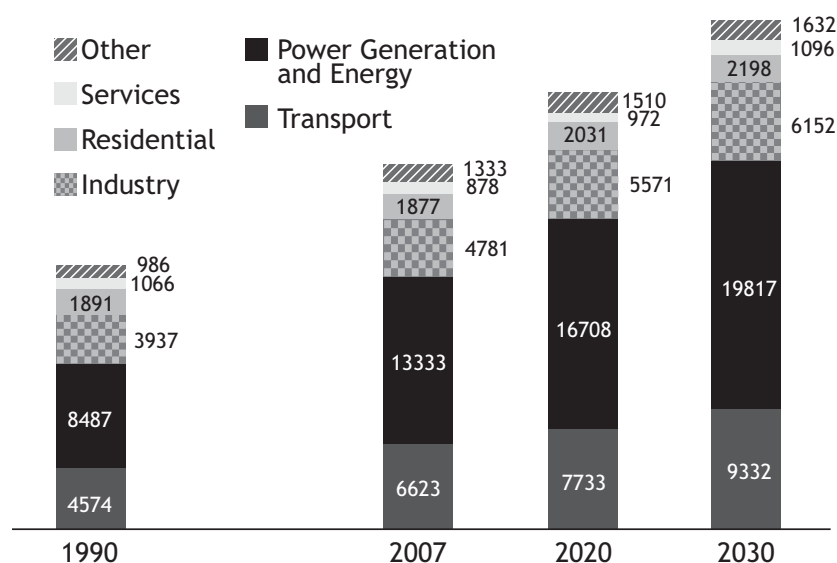
Introduction

While international transport - aviation and maritime shipping - is an important facilitator and driver of trade, it also contributes significantly to climate change. The regulation of greenhouse gas (GHG) emissions from international transport would help mitigate climate change, as well as support a green economy transition. Meanwhile, new regulations could potentially lead to higher costs for moving goods and people around the globe. This has implications for trade and equity, particularly for Small Island Developing States (SIDS), which have a large trade exposure and are situated in remote locations.

Background

Currently, 90 percent of world trade (by volume) and 60 percent by value is transported by sea. Aviation transports less than 10 percent of the world trade by volume, but 40 percent by value. The transport sector as a whole accounts for a significant share of global GHG emissions: between 1990 and 2008, CO₂ emissions from transport (including domestic and international transport) grew 45 percent from 4.58 Gt to 6.6 Gt. According to the *World Energy Outlook* of 2009, as global CO₂ emissions continue to increase, by 2030 transport emissions could rise to over 9Gt, despite significant mitigation policies built into the scenario depicted below (see Figure 1).

Figure 1 - Projected world energy-related CO₂ emissions (Mt)



Source: World Transport Forum, 2010.

Box I - European Union's decision to include aviation under its Emissions Trading Scheme (ETS)

The inclusion of aviation under the European Union's Emissions Trading Scheme (ETS) came into effect on 1 January 2012. Under the scheme, all airlines - regardless of nationality - need to provide emission permits (some of which are allocated free of charge in the beginning) for intra-EU flights, as well as flights to and from the EU bloc. For flights between the EU and other regions, emissions are calculated for the entire last 'leg', which results in higher costs for transatlantic and other long-distance flights.

Including all airlines is important for the integrity of the ETS, as it reduces the possibility of carbon leakage. Otherwise, the reduction of emissions by EU airlines could end up being offset by an increase in emissions by non-EU airlines.

The inclusion of airlines into the EU plan has come under criticism from various non-EU countries. A group, including Russia, the US, China and India have threatened to retaliate, prompting fears of a 'trade war' over the aviation issue.

Currently, the additional cost for airlines flying long-haul into and out of Europe has been calculated to amount to approximately US\$3 per passenger. Carbon prices within the ETS are at a historic low, at around €8 per tonne, compared with a 2008 peak of nearly €30 per tonne.

Despite resistance from both within and outside the union, as long as there is no international agreement (the option all parties agree would be the best solution) the EU intends to maintain aviation within the ETS.

International bunker fuels (i.e. fuels used for aviation and maritime shipping) account for 3.3 percent of the world's GHG emissions. Aviation alone currently accounts for 42 percent of that figure (or 1.4 percent of the world total). However, the aviation sector accounts for between 4 and 9 percent of the climate change impact of human activities because of the heat-trapping effects of condensation trails and other induced cloud formation. According to the Intergovernmental Panel on Climate Change (IPCC)'s worst case scenario, aviation emissions could increase from 0.3 Gt CO₂ per year now to 1.5Gt CO₂ per year by 2050.

Opportunities

A transition to a greener economy will necessitate greater fuel efficiency and the use of alternative fuel sources in the transport sector as part of wider domestic measures. International consensus and co-operation will be crucial.

Climate change mitigation related to bunker fuels has been discussed under the United Nations Framework Convention on Climate Change (UNFCCC) for many years. The principle of "common but differentiated responsibilities" lies at the core of efforts to mitigate climate change under the convention. It means that developed countries - which are responsible for the

bulk of historic emissions - must take the lead in mitigation. However, the UNFCCC does not have a clear mandate to tackle bunker fuels, and the issue has proven controversial. The Kyoto Protocol (Article 2.2) calls on Annex I Parties (developed countries) to work on international transport through the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO).

The ICAO Assembly adopted a resolution in 2010, which included an intention to develop a global framework of market-based measures to address GHG emissions. In 2011, the Marine Environment Protection Committee of the IMO adopted amendments to a technical annex containing *Regulations for the prevention of air pollution from ships*. This represents the first mandatory global greenhouse gas reduction regime for an international industry sector, and requires the implementation of energy efficient designs for new ships, as well as certain provisions for older ships. The measures are expected to enter into force on 1 January 2013. The IMO is hoping to build on these regulations to develop a global GHG mitigation regime for maritime transport.

Meeting the combined challenges of climate change mitigation and ensuring that the green economy does not act as a barrier to trade requires a multi-faceted approach to emissions reductions in international transportation. Combining the use of policy-driven technological changes (e.g. efficiency standards),

operational measures (e.g. speed reductions) and the use of market-based mechanisms, such as emissions trading, would be one possibility. Figure 2 below

outlines and compares some of the proposed market-based mechanisms and voluntary measures for the transport sector.

Figure 2 - Evaluation of market-based and voluntary measures aimed at mitigating GHG emissions in the transport sector

Instrument	Effectiveness	Efficiency	Equity (distributional)	Equity (export impact)
Carbon tax	High, if applied globally	High, if applied globally	Potentially regressive, although can be made revenue neutral	Insignificant
Cap-and-trade scheme	High, if applied globally, upstream and with auction of permits ¹	High, if applied globally	Potentially regressive, but depends on capacity to compensate losers	Insignificant
Border tax adjustment	Low ²	Low ³	Ambiguous, depends on sector	May disadvantage some developing countries but favour others
Carbon labelling	Low	Low	Favours larger exporters	Negative impact on countries using air freight or shipping over long distances ⁴
Food miles initiatives	Low, perverse effects possible	Low, marketing costs	Favours local producers	Negative impact on countries using air freight or shipping over long distances

Source: Kasterine, A. & Vanzetti, D. (2010)

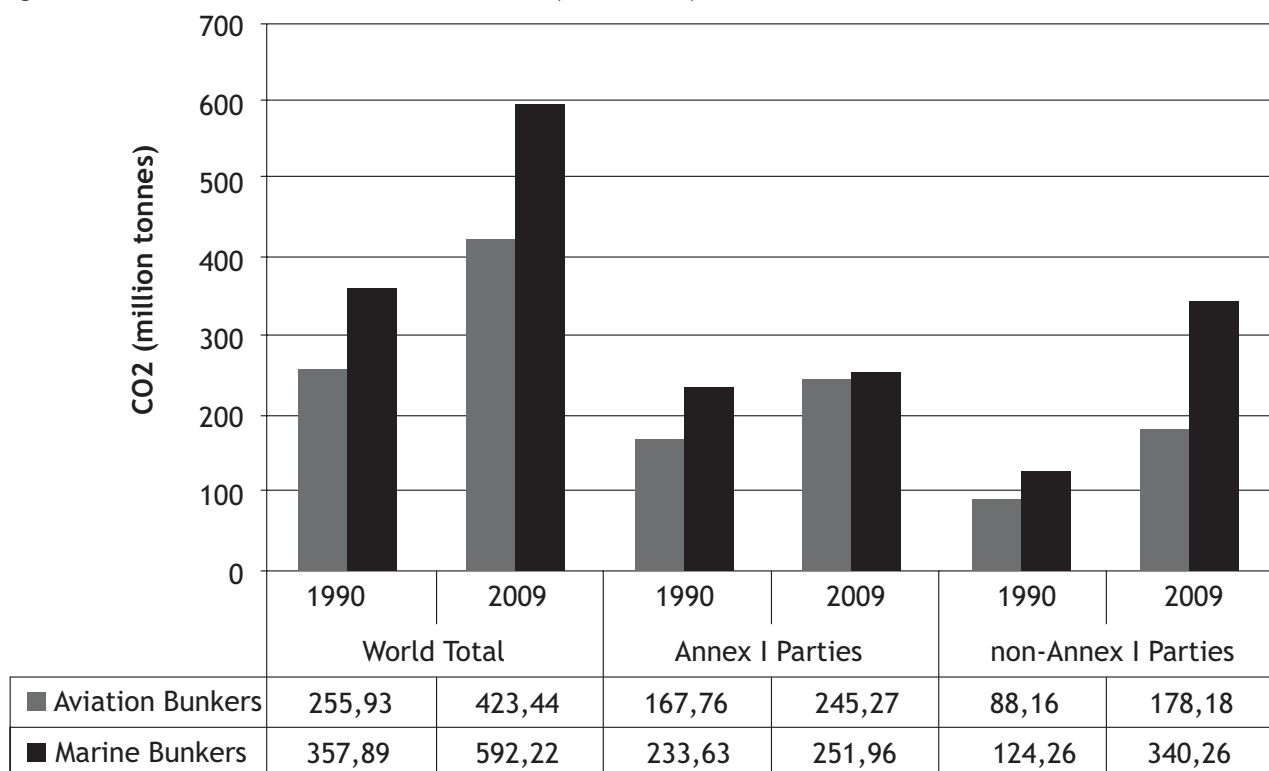
1. Concern over price volatility. Limited impact on non-carbon GHG emissions.
2. More effective for carbon-intensive items.
3. Need to measure embedded carbon in imports.
4. Inaccuracy in the data is especially likely for developing countries. Potentially high compliance costs for exporters.

Challenges

Global emissions from international bunker fuels have increased by 65.5 percent over the past two decades.

Developing countries have seen the highest levels of growth in aviation and marine bunker emissions, with increases of 102.1 percent for the former and 173.6 percent for the latter between 1990-2009 (see figure 3).

Figure 3 - International bunker fuel emissions (1990-2009)



Source: International Energy Agency, 2011

Future regulation faces some particular challenges. Under the principle of common but differentiated responsibilities, developing countries would be less likely to face emissions limits. In terms of shipping, re-flagging is quick and uncomplicated. Already, many shipping companies have taken the pragmatic decision to shift their flags from Annex I (developed) to non-Annex I (developing) countries. Around 80 percent of shipping capacity is now registered in non-Annex I countries. On the positive side, this trend has seen developing countries move up the maritime value chain.

Imposing emissions limits or a carbon tax on the international transport sector, which is currently exempt, would imply a new financial burden and a potential decrease in demand for such services. This could have knock-on effects for developing countries, which might experience an increase in food prices due to transport costs, lower demand for their export products, or declining numbers of tourists. This would be most prevalent for low value-to-weight goods, for which the cost of transport is proportionally higher than for higher value-added products. Raw materials fall into this category.

What's next?

Working towards a comprehensive international agreement on climate change under the UNFCCC, including international transport, provides the first-best option for moving ahead. Currently, progress is slow in this area. In this context, other options forward exist, and discussions are ongoing on a number of topics.

- Actions under the ICAO and IMO can lead to partial success and help pave the way for agreement under the UNFCCC. Some progress has been made in these fora, more so at the IMO. However, with movement towards comprehensive and binding action blocked, both institutions are considering global market-based mechanisms. Some countries remain unwilling to commit to mandatory emissions reductions, in part out of concern that any agreement on emissions in international transport would deviate from the principle of common but differentiated responsibilities, with implications for the wider climate negotiations.

- There is a risk of an eventual ‘patchwork quilt’ of regulations, something that the aviation and shipping industries have been keen to avoid.
- Unilateral action by the EU on addressing aviation emissions has increased the polarisation of positions within the ICAO. Yet, the middle road of turning towards voluntary CO2 emissions reductions, while attractive to more participants, may not meet the target for climate change mitigation set by other stakeholders and the UNFCCC.
- Financing remains crucial to discussions. One way to offset costs for developing countries and to implement the principle of common but

differentiated responsibilities would be to install a rebate mechanism. Under such a mechanism, part of the collected emissions charges would be rebated to developing countries in support of their mitigation and adaptation measures. In fact, the UN High-Level Advisory Group on Climate Financing has calculated that up to US\$24 billion per year could be raised from the aviation and maritime sectors through market-based mechanisms. That would go a long way towards the US\$100 billion per year that the developed countries have pledged to assign to climate financing for developing countries by 2020. These funds could also be used to offset the increased costs of freight transport for developing countries.

Resources

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This paper was produced jointly by the United Nations Environment Programme (UNEP), the International Trade Centre (ITC) and the International Centre for Trade and Sustainable Development (ICTSD).

Citation: UNEP, ITC and ICTSD; (2012); *Trade and Environment Briefings: International Transport*; ICTSD Programme on Global Economic Policy and Institutions; Policy Brief No. 5; International Centre for Trade and Sustainable Development, Geneva, Switzerland, www.ictsd.org

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Formed in 1964, the International Trade Centre (ITC) has been the focal point within the United Nations system for trade related technical assistance (TRTA). ITC's mission is to enable small business export success in developing and transition-economy countries, by providing, with partners, sustainable and inclusive development solutions to the private sector, trade support institutions and policymakers. Working with partner organisations, both within and outside the United Nations, ITC works to promote projects and programmes with global efforts to achieve the Millennium Development Goals and the Aid for Trade agenda.

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ISSN 1816 6970