Allocating emissions permits to European airlines

The European Commission plans to incorporate air travel into the European Union emissions trading scheme (ETS)\(^1\) from 2012. Low-cost airlines would bear the greatest impact from the introduction of air transport emission permits, according to a new study, which looks at the allocation of permits in Europe.

Initially, the focus of the air transport ETS would be on emission levels of CO\(_2\) from aircraft engines. There is also growing interest in other types of emissions from aviation and the EU is likely to introduce a directive which sets standards for local air quality around airports.

The study looked at methods of allocating air transport emissions permits in Europe. The International Air Transport Association, (IATA), has set voluntary targets for airlines to improve fuel efficiency, including a 26 per cent improvement between 1990 and 2012. However, this could be seen as insufficient given that by 2005 British Airways had already increased fuel efficiency by 27 per cent. In all, airlines have achieved a 70 per cent improvement in the past 40 years. Today’s aircraft have a fuel consumption similar to that of a modern compact car. However, in the longer term, improvements in efficiency and the reduction of CO\(_2\) emissions are expected to slow, and with air traffic increasing by 4-5 per cent per year, emissions will increase significantly.

It is unlikely that a global aircraft engine emissions trading scheme can be introduced in the near future. European member states are, however, keen to see aviation included in the European Union’s ETS. It was proposed that the scheme will initially apply only to flights between EU nations. These flights produce around 42 million tonnes of CO\(_2\) compared with about 213 million tonnes for all flights to and from EU airports. Using information on aircraft and engine types from 2003/4, the study compared the potential impact on three different types of UK carriers: a network carrier (British Airways), a low-cost airline (easyJet) and a charter/leisure operation, (Britannia/Thomsonfly).

The study considered three main allocation systems:

- grandfathering, which is based on free allocations derived from previous emission levels
- auctioning, with airlines bidding for the levels of CO\(_2\) emissions they expect to produce
- benchmarking, which sets a baseline efficiency measure

In all cases, the impact was greatest on the low cost carrier. The grandfathering approach penalised the faster growing low cost airline and favoured the network carrier, which could absorb costs on more long-haul flights. And, EU network carriers would be at a slight disadvantage when compared with foreign hub carriers. The most costly alternative for airlines would be auctioning, and further evaluation would be needed on how the proceeds raised would be used. The study recommends using a benchmark scheme based on two elements: landing and take off (LTO) cycles and per kilometre emissions. Although more complex, this would avoid distortion and would not penalise smaller low-emission aircraft.

1 To find out more about EU ETS, see: [http://ec.europa.eu/environment/climat/emission/review_en.htm](http://ec.europa.eu/environment/climat/emission/review_en.htm)


Contact: p.s.morrell@cranfield.ac.uk

Theme(s): Climate change & energy