

Summary Paper | Introduction of Aviation into the European Union Emissions Trading Scheme

May 2009

Overview

On 2 February 2009, Directive 2008/101/C formally brought aviation into the European Emissions Trading Scheme (EU ETS). Aviation activities will be included in the EU ETS from 1 January 2012, although aircraft operators will have to submit benchmarking plans by 31 August 2009 and verified pre-compliance emissions reports by 31 March 2010.

All flights arriving at or departing from EU airports are covered, regardless of the nationality of the aircraft operator. Member States will be responsible for ensuring compliance with the requirements of the legislation by those aircraft operators to which they issued an operating licence and whose emissions in 2006 were mostly attributable to that Member State. On 11 February 2009 the Commission issued the preliminary list of over 2,700 aircraft operators and their administering Member States. Around a quarter of all aircraft operators, some 780 carriers, will be regulated by the UK.¹

Only commercial aircraft operators that (a) fly fewer than 243 flights for three consecutive four month periods or (b) emit less than 10,000 tonnes of carbon dioxide a year or (c) operate aircraft weighing less than 5,700kg will escape inclusion in scheme. However, simplified monitoring, reporting and verification procedures will still apply to small emitters (i.e. (a) and (b) above). Total exemptions apply for State, military, training, test, ferry and repositioning flights.

Aviation Emissions

Emissions from aviation currently account for 700 million tonnes of CO₂ or about 1.6% of global anthropogenic greenhouse gas emissions². To put this in context, in 2008, the UK's total emissions were approximately 624 million tonnes of CO₂ equivalent³. It is estimated that aviation's inclusion in the EU ETS will lead to a reduction of 194 million tonnes of CO₂ across the EU by 2020⁴.

-
- 1 Each Member State will assign a 'Competent Authority' to monitor its aviation emissions. The Competent Authority for England and Wales is the Environment Agency, for Scotland the Scottish Environmental Protection Agency and for Northern Ireland the Chief Inspector for Northern Ireland.
 - 2 The Stern Review: Economics of Climate Change
 - 3 Department for Energy and Climate Change (DECC) Statistical Release, March 2009
 - 4 DECC, Consultation on the Transposition of EU Directive (EC/2008/101)

Whilst the EU's total greenhouse gas emissions fell by 3% from 1990 to 2002, emissions from international aviation increased by almost 70%⁵. Although there has been significant improvement in aircraft technology and operational efficiency, it has not been enough to compensate for the effect of increased traffic; the growth in emissions is therefore likely to continue.

Annual UK passenger numbers are expected to double from 241m in 2007 to 455m by 2030⁶. Aviation accounted for some 6.4% of the UK's total emissions in 2006⁷. Even considering the current economic climate, the UK government has predicted that by 2030 aviation could account for up to 25% of the UK's total contribution to global warming⁸.

Allocation of Allowances

For the first qualifying period, that is from 1 January 2012 to 31 December 2012, the total number of allowances to be allocated to aircraft operators will be equivalent to 97% of historical aviation emissions. Historical emissions are defined as the mean average of annual emissions in the calendar years 2004, 2005 and 2006 from aircraft covered by the scheme. Historical emissions will be calculated from data held on the Eurocontrol billing system. 15% of allowances will be auctioned and 3% set aside in a special reserve for new operators and operators whose activity has significantly increased⁹. The remaining allowances will be allocated to operators free of charge in accordance with a benchmark drawn up by the Commission based upon operators' verified tonne-kilometre data¹⁰.

From 2013 onwards, the total number of allowances for aviation will be reduced from 97% to 95% of historical emissions, although the amount of allowances required to be purchased at auction will remain at 15%¹¹.

On 30 April 2013 and annually thereafter, aircraft operators will have to surrender a number of allowances equivalent to their CO₂ emissions, calculated from the previous year.

Monitoring, Reporting and Verification

In 2007 Eurocontrol recorded 9.7m flights that would have qualified had the EU ETS been in effect at that time. To qualify for free allowances, aircraft operators must submit a monitoring ('benchmarking') plan for approval that sets out the measures the operator will adopt to monitor and report tonne-kilometre data and emissions data for each flight in 2010.

5 European Commission, Aviation and Climate Change, http://ec.europa.eu/environment/climat/aviation_en.htm

6 DfT 2009, UK Air Passenger Demand and CO₂ Forecasts

7 Government Parliamentary answer, <http://www.parliament.the-stationery-office.com/pa/cm200607/cmhansrd/cm070322/text/70322w0003.htm>

8 DfT 2003, White Paper 'The Future of Air Transport'

9 Allowances in this reserve will be allocated for free in accordance with special provisions set out in Directive 2008/101/EC.

10 The 'allowances per tonne-kilometre' benchmark will be calculated by dividing the total number of allowances to be allocated for free by the sum of tonne-km data submitted by operators. The number of free allowances that any individual operator will receive is then calculated by multiplying the operator's tonne-kilometres by this benchmark.

11 This percentage may be increased at any time as part of the general review of Directive 2008/101/EC.

For the purpose of clarity:

Tonne-kilometres = Distance x Payload, where:

- Flight distance is measured by the great circle distance between two aerodromes plus a real-world up-lift of 95km
- Payload is the total mass of freight, mail & passengers (excluding crew) carried. This can be calculated by using either actual measured weight or a default value of 100kg per passenger

Emissions data is calculated by fuel consumption (including fuel consumed by the auxiliary power unit) x an emissions factor. Default emissions factors are taken from the 2006 IPCC Inventory Guidelines and subsequent updates. Fuel consumed by each aircraft is to be measured by the amount of fuel contained in the aircraft tanks once fuel uplift is complete minus the amount of fuel contained in the aircraft tanks once fuel uplift for the subsequent flight is complete plus fuel uplift for that subsequent flight.

Penalties

Failure to submit emissions benchmarking plans by 31 August 2009 and verified monitoring and emissions reports by 31 March 2010 will result in the inability to claim free allowances up to 2020. This means that in order to comply with the ETS (if applicable), the aircraft operator would have to buy all of its allowances each year at auction.

Whilst the submission of **tonne-km benchmarking plans** is voluntary (but would result in no free allowances being allocated up to 2020), submission of **emissions plans** is mandatory. Failure of an aircraft operator to submit an emissions benchmarking report by 31 August 2009 would incur a penalty, which in the UK would be a minimum of £5,000 plus £500 per day thereafter (up to 90 days), resulting in a maximum penalty of £50,000.

A similar penalty would also be incurred should an aircraft operator fail to submit its **verified emissions report** by 31 March each year.

Should the aircraft operator fail to submit sufficient **allowances** before 30 April each calendar year (commencing 2013), then an automatic fine of €100 per tonne of CO₂ would be payable plus the full current market cost of purchasing outstanding allowances that are due for surrender. Failure to pay fines or surrender sufficient allowances may also result in the withdrawal of the aircraft operator's licence and confiscation and sale of its aircraft.

The average fuel burn for an intra-European flight is about 3-4 tonnes of kerosene which produces approximately 10 tonnes of CO₂. Therefore, should an intra-European aircraft operator default on its obligations under the EU ETS, it could face penalties in excess of €1,500 per flight, equating to over €2,000,000 per aircraft per annum. Assuming the cost of allowances will be approximately €30 per tonne in 2013, then the additional cost of surrendering overdue allowances would equate to approximately €100,000 per aircraft. For medium and long haul aircraft operators, the cost could exceed two or three times this amount.

Compliance with the EU ETS

It is important that aircraft operators understand the requirements and timelines for the inclusion of aviation within the EU ETS. Aircraft operators registered in Europe may have a clearer comprehension of the requirements and the data that needs to be collected concerning compliance under the scheme. Bigger carriers, such as the major European airlines and large low cost carriers have been working on data collection and compliance for some time. Some smaller carriers and some aircraft operators located outside of the EU may not be fully aware of the reporting requirements and their obligations under the EU ETS.

Timeline

31 August 2009	Aircraft Operators to submit benchmarking plans and emissions plans to their respective competent authorities for approval
1 January 2010 and every year thereafter	Aircraft operators to monitor their total CO ₂ emissions every year, starting with calendar year 2010. However, 2012 is the first monitoring year for which operators must surrender the correct number of allowances to cover their CO ₂ emissions
1 January 2011 – 31 March 2011	Aircraft operators to have their emissions reports verified by a verifier who is approved by the relevant regulator (it is not necessary to have the emissions plan verified)
31 March 2011	Aircraft operators to submit pre-compliance verified benchmark tonne-km reports and annual emissions reports for the monitoring period 1 January 2010 to 31 December 2010
30 September 2011	Commission produces benchmark number for calculating emissions
31 December 2011	Regulator publishes final allocations to each operator
28 February 2012	Regulators issue allowances to operators
31 March 2012	Aircraft operators to submit pre-compliance annual emissions reports for the monitoring period 1 January 2011 to 31 December 2011
31 December 2012	End of first emissions reporting year for which allowances must be

	surrendered by operators. Submission of first verified emissions report.
April 2013 and every year thereafter	Aircraft operators surrender the correct number of allowances from their registry accounts to cover their CO ₂ emissions

Further Information

Further information is available at:

<http://www.defra.gov.uk/environment/climatechange/trading/eu/future/aviation.htm>

and

http://ec.europa.eu/environment/climat/aviation_en.htm

The Directive is available at:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32008L0101:EN:NOT>