

EU ETS & Aviation

1. Background

In 2005, European Union (EU) policy makers turned their attention on regulating emissions from the aviation sector. Although aviation only accounted for 3% of global carbon emissions in 2009, the industry's carbon footprint has increased by 98% between 1990 and 2006.¹ Due to an emissions growth forecast of 667% from 2006 to 2050, the sector stands to become a more important source of GHG emissions in the future unless mitigation policies are being taken. It is unlikely that the airline industry will be able to improve fuel efficiency at the same rate as air traffic expands. If total EU emissions were to be cut by 80% in 2050, airlines would 'consume' almost the entire allocation of CO₂ allowances in the EU's Emissions Trading Scheme (ETS).² The European Commission (EC) therefore decided to include aviation into the EU ETS as of 2012, on the basis that this was "the most cost-efficient and environmentally effective option for controlling aviation industry emissions".³ Emissions trading also received the support as best mitigation policy by the main industry body, the International Aviation Transport Association (IATA), in a letter to the EC in 2004.

Rules

All 'attributed aviation emissions', e.g. "emissions from all flights falling within the aviation activities listed in Annex 1 [of this Directive] which depart [...] from the territory of a Member State and those which arrive [...] from a third country"⁴ are included in the regional cap and trade scheme. The ETS rules for the aviation industry will follow similar rules as those for industrial installations. The airline operators will receive free allowances (EU Aviation Allowances – EUAAs) to cover most of their past emissions, but they will have to buy allowances through auctions or on the market if they emit more than the allocated amount. Operators can sell or buy allowances depending on whether they have a surplus or shortage in GHG allowances. It is also possible for the aviation industry to use allowances from industrial installations (EU Allowances – EUAs) or to offset their emissions using units generated under Kyoto Protocol mechanisms (Certified Emission Reductions – CERs or Emission Reduction Units – ERUs). Furthermore, it is possible to 'bank' allowances from one compliance period to the next to cover future emissions. The EU ETS next compliance period (phase 3) runs from 2013-2020.

¹ United Nations Framework Convention for Climate Change (UNFCCC)

² Anderson, K. et al. (2006), 'Growth Scenarios for EU & UK Aviation: Contradictions with Climate Policy', Tyndall Centre for Climate Change Research Working Paper 84.

³ Homepage Directorate-General for Climate Action (European Commission)

⁴ European Commission (2003), Directive 2003/87/EC, Establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC

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Quick facts

The cap	<ul style="list-style-type: none">• Sizes the total quantity of allowances allocated to the aviation sector• The cap is set at<ul style="list-style-type: none">○ 97% (2012)○ 95% (2013-2020)
The baseline	<ul style="list-style-type: none">• Is the average of the annual aviation emission for the years 2004, 2005 and 2006• Baseline was published by the EC in March 2011 and is approx. 221 million tonnes of CO₂
The benchmark	<ul style="list-style-type: none">• Is used to allocate the free of charge allowances to the operators• Is calculated by dividing the total cap by the sum of tonne-km data provided by the operators in 2010• The benchmark is set at<ul style="list-style-type: none">○ 0.6797 allowances/1000 tonne-km (2012)○ 0.6422 allowances/1000 tonne-km (2013-2020)
Free allocation	<ul style="list-style-type: none">• Operators had to report their tonne-km data for 2010 to get free allocation• Amount of allowances for a certain operator is calculated by multiplying the benchmark with the 2010 tonne-km data of the operator• The operators will receive<ul style="list-style-type: none">○ 85% of the calculated allowances in 2012 and○ 83% in 2013-2020
Special reserve	<ul style="list-style-type: none">• In each period 3% of the cap will be set aside in a special reserve for operators<ul style="list-style-type: none">○ Who start performing aviation activity after the monitoring year○ Whose tonne-km data increase by an average of more than 18% annually between the monitoring year and the second calendar year of the period
Offset use	<ul style="list-style-type: none">• Airline operators can use<ul style="list-style-type: none">○ 15% of their emissions (2012)○ at least 1.5% of their verified emissions (2013-2020)

Cost impact

Aircraft carriers will face additional operating costs due to the inclusion of the sector into the EU ETS but the extent of the impact depends on fuel efficiency of the fleet and operational practices of the carrier. The cost impact also depends on the extent the carriers can pass on ETS costs to the consumers, which can be more or less difficult according to the operator's business model, his exposure to competition and his position in the market. Several studies⁵ try to predict the impact on e.g. ticket prices or demand of tickets. For the impact on ticket prices, the estimations vary from €1-6.60 for short-haul flights, €1.80-9 for medium-haul flights and €8-40 for a long-haul flight. Other studies provide rough estimations based on fuel prices which result

⁵ European Commission (2006), Directive 2003/87/EC, Impact assessment of the inclusion of aviation activities in the scheme for greenhouse gas emission allowances trading within the community; ICTSD (2011), The Inclusion of Aviation in to the EU ETS: Economic and Environmental Consequences; CD Delft (2007), Allocation for aviation in the EU ETS: The impact on the profitability of the aviation sector under high levels of auctioning



in an increase of ticket prices of 1.3-6.5% depending on the prevailing allowance prices. The effect on demand (passenger & goods) is predicted to not be significant.

The EC's assessment - which is scrutinized by an independent board - found only a marginal impact in terms of flight deviation, also because there are only few major airports just outside the EU's territory. It is also unlikely that carriers will switch to hub airports outside the EU. Currently only 1% of all passengers use the EU as a hub and it is estimated, that only 2.6% of these passengers would change the hub. On the other hand, other studies point out that carbon leakage is likely to take part due to a switch to alternative transport modes, switch to alternative hub airports and a diversion of tourism away from the EU.

Mitigation impact

Emission trading is an effective mitigation instrument with a high environmental incentive effect. The environmental objective is set through the cap on emissions and will be reached independently of the carbon price. Yet, the cost-effectiveness of investments in abatement options is a function of the expected CO₂ price. An EU ETS price of €27 incentivizes efficiency gains in the aviation sector⁶ but the cost goes up sharply if one moves up the marginal abatement curve and security concerns might limit options. Few analysts today expect the price to even reach that level over the next 10 years, unless additional measures are taken to tackle a recession-induced oversupply in the EU ETS. In practice, it will also be difficult to disentangle the effect of the carbon price from the most dominant cost factors such as increasing fuel prices.

A more recent study⁷ quotes research by CE Delft that, at current CO₂ prices, airlines would rather buy allowances from other sectors than implement expensive measures themselves. Emissions by ETS-compliant airlines are not expected to decrease by more than 13 Mt or 5% by 2020 with the reference scenario foreseeing an emissions growth of 91% or 184Mt (based on 2005 levels). Most of the allowances, and hence the reductions needed, to close the remaining 170Mt gap to the aviation cap will however have to be delivered by other sectors with cheaper abatement options, thereby making the scheme more economic for the aviation industry. Overall, the inclusion of aviation will lead to an additional abatement of 183 Mt of CO₂ by 2020: 13 Mt will be achieved within the aviation sector, 170 Mt by other sectors (see table below).

Source	CO ₂ emissions aviation	CO ₂ emissions bought from other EU ETS sectors	Total CO ₂ reduction
CE Delft (2007)	-0.4 to -3.2% (2012)	N.A.	N.A.
CE Delft et al. (2005)	-2 to -9 Mton (2012) *	-17 to -23 Mton (2012)	-19 to -32 Mton (2012)
CE Delft et al. (2007)	-13 Mton (2020) **	-170 Mton (2020)	-183 Mton (2020)

* Reference scenario for aviation emissions is 155-180 Mton in 2012.

** Reference scenario for aviation emissions is 401 Mton in 2020.

⁶ Frontier Economics (2006): A report prepared for the European low fares airline association (ELFAA)

⁷ International Centre for Trade and Sustainable Development (2011) based on research by CE Delft: ictsd.org/downloads/2011/11/the-inclusion-of-aviation-in-the-eu-emissions-trading-system.pdf



Penalties⁸

If by the 30th of April each year, an aircraft operator fails to surrender the necessary allowances to cover the emissions generated in the preceding year, the EC will impose penalties on this operator. These penalties apply to all sectors included in the EU ETS. The operator has to pay an excess emission penalty which is currently set at €100 for each tonne for which he has not surrendered allowances. This payment does not release the operator from the obligation to surrender the allowances. He is committed to provide the missing allowances when surrendering the allowances for the following year's emissions. If other enforcement measures also fail to ensure compliance of an aircraft carrier, its administering Member State is able to request an operating ban on the concerned aircraft operator. The EC is responsible for deciding whether a carrier is banned or not. Once the EC decide to ban an operator the Member State has to enforce the ban.

2. International perspective

While the EU ETS applies to all airlines flying in, into or out of European airspace as of January 2012, a large number of non-EU countries, have questioned and challenged their participation into this regional scheme. Through a series of collective statements, the opponents - most vocally the United States - argue that regulating aircraft emission should be dealt within a global, not regional, aviation emission scheme and that such a scheme should pass by the International Civil Aviation Organization (ICAO) - as mandated by the Kyoto Protocol.⁹ The non-EU ICAO members insist that any international scheme must follow the UN's voting procedure - be adopted by consensus and implemented on a voluntary basis by each member of ICAO. However, despite all efforts the agency was not able to produce an international scheme that would satisfy its 188 members and has failed to structure or implement any other plan that would reduce the industry's carbon footprint. Consequently, the inclusion of aviation into the EU ETS stands as the sole market-based legislation that regulates the industry's emissions.

Early emission trading efforts

Talks for a global aviation emission reduction scheme have been ongoing in ICAO and IATA - the latter representing members accounting for 93% of scheduled international air traffic - for many years prior to the adoption of the EU ETS Directive. Following the exclusion of international aviation emission from 1997 Kyoto caps, ICAO was mandated to develop an appropriate scheme.¹⁰

⁸ European Commission (2003), Directive 2003/87/EC, Establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, Article 16

⁹ UNFCCC (1997): Kyoto Protocol; Article2(2)

¹⁰ UNFCCC (1997): Kyoto Protocol – Under Article2(2), the Parties included in Annex I shall pursue limitation or reduction of emissions of greenhouse gases not controlled by the Montreal Protocol from aviation, working through the International Civil Aviation Organization.



As requested in 2001, the UN agency explored policy options to reduce emissions including market based measures stating that “such measures could achieve environmental goals at the lower costs and in a more flexible [...] manner than traditional regulatory measures”. However by 2006, no actions from an agreed measure were being put forward.

European action

In December 2005, the EU Council recognized that the inclusion of the aviation sector into the EU ETS seemed the best way forward and urged the Commission to come up with a legislative proposal.¹¹ The Commission published a draft Directive in 2006. While the EU was busy finalizing its legislation, ICAO’s Committee on Aviation Environmental Protection (CAEP) agreed by consensus on draft guidance for incorporating international aviation into national ETS and published the guide reflecting the views of the 36 members ICAO Council in late 2007. This confirmed the route taken by the EU and a draft Directive was adopted in December 2008, entered into force in February 2009 and became effective as of January 1, 2012.

In a 2010 letter to an Austrian Chancellor, IATA cautiously welcomed the EC’s proposal to include aviation in the EU ETS and even favoured it over governmental tax.¹² Both ICAO and IATA members recognized the benefits of an emission trading scheme for their industry. However, while none has formulated a global comprehensive action plan since 1997 they both strongly disagreed with the inclusion into the ETS and several members have taken legal action against the EU.

Legal treat and fallout

In an attempt to slow the operationalization of the scheme, the Air Transport Association of America (ATA), the industry trade organization for the leading U.S. airlines, along with American Airlines, Continental Airlines and United Airlines channelled their disapproval in a lawsuit against the UK government challenging the unilateral application of the EU ETS to international aviation in December 2009.¹³

The UK was the first EU member state to transpose the regulation in 2009 into its national regulations. Since legal action cannot be taken against the EU itself, the airlines had just a limited window in accordance to UK law to challenge the implementation of the early stages of the ETS rules into UK regulation. The English High Court of Justice later referred the case to the European Court of Justice as under EU law, only the Court of Justice of the European Union (ECJ) has power to declare the EU legislation invalid.

One of the many arguments the claimants advanced is that unilateral implementation of the EU ETS to the aviation industry is a violation of Arts. 15 and 24 of the Chicago Convention of 1944 as it “*imposes fees, dues or other charges on airlines in respect of rights of transit, entry and exit of*

¹¹ Link: <http://curia.europa.eu/jcms/upload/docs/application/pdf/2011-10/cp110104en.pdf>

¹² IATA press release: <http://www.iata.org/pressroom/Documents/iata-letter-austria-chancellor-nov2010.pdf>

¹³ Case C-366/10 Air Transport Association



*aircraft, or in respect of fuel.*¹⁴ The measure is also claimed to be contrary to the EU-US “Open Skies Agreement” as it imposes a tax on aviation fuel.¹⁵ International law of sovereignty of State is also being disputed. Under the Chicago Convention, flights between EU and non-EU states or intra non-EU states are governed by a set of rules that support absolute State sovereignty over its national airspace. The EU established one single air transport market in the 1990s. By doing so, the Member States gave unconditional access to their collective airspace and expanding traffic rights to EU airlines within the EU territory. The plaintiff group argue that this type of bilateral agreements does not extend to airlines based outside the EU and thus regulation within that space should not apply to external airlines.

On October 6, 2011, ECJ’s Advocate General Juliane Kokott stated that EU legislation was compatible with the relevant international agreements particular in that the EU ETS was not equivalent to a tax.¹⁶

The United States’ position

Two weeks after the opinion was released, the U.S. House of Representatives passed the EU ETS Prohibition Act whereby “the Secretary of Transportation shall prohibit an operator of a civil aircraft of the United States from participating in any emissions trading scheme unilaterally established by the European Union.”¹⁷ The bill by itself holds no legal weight. However going forward if this bill is passed by the Senate and later in a third step signed by President Obama, this would mean that the Department of Transportation would be forced to bar U.S. airline operators from complying with the EU ETS Directive. Thus far, the bill has been referred to the Senate Committee on Commerce, Science, and Transportation on December 17th 2011 but there has been no word on it since.

A few days prior to the December 2011 ECJ ruling, US Secretary of State Hillary Rodham Clinton and Transportation Secretary Ray LaHood, signed a letter to several European Commission officials, voicing their objections to the ETS both on policy and legal grounds and while not giving specifics, warned that the US government would be “compelled to take appropriate action” if ETS application to US carriers was not removed. In a response letter, the EC’s Commissioners for Transport and Climate stated that while the EU firmly stood by with its legislation¹⁸ the bloc also reaffirmed it’s willingness to exempt nations that would introduce equivalent measures for the aviation sector and that legislation would be revised in the event of an international agreement for limiting GHG emissions from this industry.

¹⁴ http://www.eenews.net/assets/2011/08/01/document_gw_03.pdf

¹⁵ Air Transport Agreement between the US and EU (2007); Article 11(2)(c)

¹⁶ <http://curia.europa.eu/jcms/upload/docs/application/pdf/2011-10/cp110104en.pdf>

¹⁷ <http://thomas.loc.gov/cgi-bin/query/z?c112:H.R.+2594>:

¹⁸ Quoted on Bloomberg (17/01/2012): ‘While remaining of the firm belief that respecting each others’ rules and regulations is indispensable for deepening our cooperation, we reaffirm the strong willingness of the EU and its member states to work collaboratively with the U.S. and all other international partners towards a global solution in ICAO.’



China's position

In late September 2011, China and Russia released a joint statement demanding the EU not to implement the system or to suspend it until 2020 as the law infringes upon other countries' sovereignty and burdens global air carriers. As the plea fell on deaf ears, China announced that it would file lawsuit in Germany against the EU and called on its airlines to be non-compliant with the scheme. According to the China Air Transport Association (CATA), the scheme will cost Chinese airlines 800 million Yuan in the first year and more than triple that by 2020¹⁹.

India's position

In addition to having signed alongside a dozen other countries an ICAO letter disapproving the scheme back in October 2011, the Indian Environment Minister Jayanthi Natarajan warned in a letter to EU Commissioner Connie Hedegaard that the 'carbon emissions tax' demanded from international airlines using European airspace was illegal and will hurt future climate-change negotiations. Like its Chinese counterpart, India has asked its airlines such as Air India, Jet Airways and Kingfisher Airlines to refrain from submitting carbon emissions data to the EU. India estimates that the scheme will cost the carriers \$57 million in 2012²⁰.

Legal decision and reaction

On December 21, the ECJ rejected the argument that the EU ETS infringes on the sovereignty of non-EU nations and confirmed the validity of the extension of the EU ETS to aviation as foreseen in the ETS Directive.²¹ The court also said the EU was not bound by the Chicago Convention because it is not a party to the convention. Moreover, uniform application to all flights departing from or arriving at an EU airport is consistent with Open Skies Agreement designed to prohibit discriminatory treatment between American and European operators.

The ECJ further reaffirms the difference between emissions trading and a tax in that "[t]he actual cost for the operator depends, in as much as a market-based measure is involved, not directly on the number of allowances that must be surrendered, but on the number of allowances initially allocated to the operator and their market price when the purchase of additional allowances proves necessary in order to cover emissions. Nor can it even be ruled out that an aircraft operator, despite having held or consumed fuel, will bear no pecuniary burden resulting from its participation in the emissions trading scheme, or will even make a profit by assigning its surplus allowances for consideration."

The ruling by the EU's highest court has triggered hostile reaction from airlines around the world. In the meantime, several airlines have announced that they will raise fees as a result of

¹⁹ Quoted on Reuters (04/01/2012) <http://www.reuters.com/article/2012/01/04/us-airlines-carbon-tax-asia-idUSTRE8030MC20120104>

²⁰ 2012 United Press International: http://www.upi.com/Business_News/Energy-Resources/2012/01/11/India-protests-EU-airline-emissions-tax/UPI-25031326279600/

²¹ Judgment by the European Court of Justice can be accessed here.



the scheme. Interestingly carriers could well profit from the scheme since the current cost for complying is likely to be lower than the added fees because of the large amount of free allowances operators are given. The blessing in disguise was revealed in a MIT study in early January 2012.²²

Nonetheless, pending the outcome of various lawsuits, all airlines (some more reluctantly than others) submitted their kilometre / tonne data within the deadlines as required by the Directive to become eligible for free allocation as of 2012. The real test is however yet to come: in April 2013 airline operators will for the first time have to surrender allowances to cover their 2012 emissions. Will they comply?

²² The impact of the European Union Emissions Trading Scheme on US aviation, *Journal of Air Transport Management* Volume 19, March 2012, Pages 36–41.