

## Introduction

From the 1<sup>st</sup> January 2012 all flights taking off from, and landing at airports in the European Union<sup>1</sup> will have to surrender emissions permits to match the emissions produced during the flight. This legislation will cover all commercial aviation flights, including non European airlines. There are, however, some notable exceptions in which flights will be exempt from the scheme, including: flights transporting monarchs, heads of state and government, as well as emergency services and humanitarian flights. Exceptions will also be made for commercial flights operating on a 'low volume route'<sup>2</sup>. This exemption will be particularly beneficial to airlines from developing countries. Non EU countries can also be exempt from the scheme by implementing 'equivalent measures' to reduce aviation emissions.

## About Sandbag

Sandbag is a UK based not-for-profit organisation campaigning for environmentally effective carbon markets and focusing on the EU Emissions Trading System.

Our campaigns are supported by in-house research monitoring the environmental robustness of the caps, the distribution of allowances, and how key sectors, installations and companies in the scheme are affected by it.

For more information visit our website at [www.sandbag.org.uk](http://www.sandbag.org.uk) or email us at [info@sandbag.org.uk](mailto:info@sandbag.org.uk)

## Setting a cap on aviation emissions

The EU emissions trading scheme (ETS) has been operating since 2005 and is now in its final year of its second phase (2008-2012). The third phase of the ETS will run from 2013-2020. To date the scheme has regulated emissions in ten economic sectors and an emissions cap has been set on their emissions. The introduction of aviation marks the largest expansion of the scope of the EU ETS since its start. The European Commission forecasts that when aviation joins the EU ETS in 2012 it will be the second largest sector in terms of emissions, secondly only to electricity generation<sup>3</sup>. The European Commission has set a separate cap for the aviation sector for 2012-2020. This cap is different to the declining annual cap provided for the other economic sectors included in the EU ETS. The 2012 aviation cap has been set at 97% (212Mt) of the average aviation emissions over 2004-2006 (219Mt), dropping to 95% (208Mt) for the period of 2013-2020. By 2020, the European Commission estimates that 183Mt of CO<sub>2</sub> will be saved per year on flights covered by the scheme<sup>4</sup>.

## Free allocations

Just as the original ten economic sectors<sup>5</sup> were issued with a generous number of free allocations so too will the aviation sector. In 2012 airlines will receive 85% of their allowances (known as Aviation EUAs - AEUAs) free of charge, based on the 2004-2006 average of their emissions, with the remainder being auctioned. From 2013 to 2020 the number of free

<sup>1</sup> As well as EEA-EFTA countries (Iceland, Liechtenstein and Norway).

<sup>2</sup> A low route volume is defined as an operator with fewer than 243 flights per period for three consecutive four-month periods, or flights with total annual emissions lower than 10,000 tonnes per year.

<sup>3</sup> EC. (07/03/2011) *Questions and Answers on Historic Aviation Emissions and the Inclusion of Aviation in the EU's Emission Trading Scheme (EU ETS)*. [Online] Available from: <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/11/139> (Accessed 15/02/2012)

<sup>4</sup> EC. (07/03/2011) *Questions and Answers on Historic Aviation Emissions and the Inclusion of Aviation in the EU's Emission Trading Scheme (EU ETS)*. [Online] Available from: <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/11/139> (Accessed 15/02/2012)

<sup>5</sup> Ranging from the power generation to cement and iron and steel production

allowances will reduce to 82% and the remaining 15% will be auctioned. In addition, 3% will be set aside to create a reserve of allowances for new entrants and fast growing airlines<sup>6</sup>.

Grandfathering of allowances according to recent emissions benefits those operators who dominate a large segment of the market. Airlines with the largest emissions in 2004-2006 will receive the largest share of free allocations going forward to 2020. Rapidly growing airlines are set to lose out the most given that their free allowances were set when their emissions were lower than they are now, and are likely to dramatically increase over the coming decade. Provisions set out in the new entrants reserve (NER) go some way to addressing this by making free emissions permits available to new airlines that started after 2010, as well as fast growing airlines. Airlines that experience a growth of emissions in excess of 18% annually between 2010 and 2014 will be eligible for additional free allocations. Both new and fast growing airlines will be able to apply for additional free allocations.

### Offsetting

Airlines will be required to surrender EUAs and AEUAs to comply with their emissions reduction obligations. In addition, airlines will also be permitted to 'offset' up to 15% of the sectors emissions for 2012, using cheaper emissions credits generated in projects overseas. This gives airlines an allowance in 2012 of around 32 million international offsets<sup>7</sup>. Unused 2012 offset allowance will be allowed to be surrendered in the following phase of the scheme, from 2013 – 2020. In Phase III airlines will be entitled to offset a minimum of 1.5% of their verified emissions from 2013-2020.

### Why is the EU acting alone?

Despite their public endorsement of emissions trading as a preferred way of mitigating global emissions from the aviation sector, both the UNFCCC and the UN agency, the International Civil Aviation Organisation (ICAO) have failed to successfully implement a global framework to reduce aviation emissions. ICAO's resolution on climate change adopted in October 2010 sought to develop a feasibility study on the creation of a global market based mechanism, which will be reviewed in 2013. Voluntary commitments by ICAO to achieve a global annual average fuel efficiency improvement of 2% until 2020<sup>8</sup> have been deemed insufficient by the EU. The resolution also recognised that some states may take action prior to 2020. With aviation emissions accounting for 3%<sup>9</sup> of the EUs total greenhouse gas (GHG) emissions and with the sector's emissions growing fast, the EU sought to unilaterally bring aviation emissions into the EU ETS. The EU argues that aviation's inclusion into the EU ETS will act as a good framework for establishing a global market based mechanism to tackle global aviation emissions. What's more, the EU has included a provision into the legislation that would exempt other countries airlines from the scheme should they implement 'equivalent measures'. What these equivalent measures might be are as of yet unclear, nevertheless, it gives a clear indication that the EU would welcome international efforts to tackle aviation emissions.

### Controversy

Despite the provisions for additional free allowances and the possibility to be exempt from scheme, the introduction of non-EU airlines' emissions into the EU ETS has led to an increasingly acrimonious attack on the policy from international carriers, their respective trade bodies and national governments. The EU has angered many international airlines who see it as an example of the EU over stretching its legislative remit. In response to the inclusion into the EU

<sup>6</sup> EC. (26/09/2011) *European Commission Sets the Rules for Allocation of Free Allowances to Airlines*. [Online] Available from: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/1077> (Accessed 15/02/2011)

<sup>7</sup> Certified Emission Reduction units (CERs) and Emission Reduction Units (ERUs)

<sup>8</sup> Set out in the Resolutions 37<sup>th</sup> ICAO Assembly: [http://legacy.icao.int/icao/en/assembl/A37/Docs/a37\\_res\\_prov\\_en.pdf](http://legacy.icao.int/icao/en/assembl/A37/Docs/a37_res_prov_en.pdf)

<sup>9</sup> See Footnote 1

ETS the Air Transport Association of America, United Continental and American Airlines launched a legal challenge against the EU. They argued that aviation's inclusion into the EU (ETS) contravenes the Chicago Convention, the Open Skies Agreement and the Kyoto Protocol.

This legal challenge failed as the European Court of Justice (ECJ) ruled that the inclusion of aviation into the EU ETS is fully compliant with international law. This ruling follows the Advocate General opinion, issued on the October 2011, which determined that "EU legislation does not infringe the sovereignty of other states or the freedom of the high seas guaranteed under international law, and is compatible with the relevant international agreements"<sup>10</sup>.

Despite the court's ruling pressure continues to come from a number of parties reluctant to comply with the EU ETS. Republican senators in the USA have moved to introduce 'EU ETS prohibition act'<sup>11</sup> which would make it illegal for US airlines participate in the scheme. The Civil Aviation Administration of China (CAAC) has, following the authorization of the State Council, prohibited Chinese airlines from participating in the EU ETS<sup>12</sup>. High profile pressure has been applied by India with the Environment Minister, Jayanthi Natarajan, warning the EU Commissioner for Climate and Energy, Connie Hedegaard, in a letter<sup>13</sup> that a "unilateral measure as the one proposed to be taken by EU, stands not only in violation of the principles and provisions of the international convention (UNFCCC) but will also not augur well for the success of future climate change negotiations".

Though the debate continues it has not prevented airlines from complying so far. All international airlines have submitted the necessary emissions data and documentation in order to be eligible to receive their fee allocation. Under the current rules if airlines fail to comply with the EU ETS they would receive a fine of €100 per missing allowance and be required to purchase and surrender allowances to make up for the shortfall. Further non-compliance by airlines could lead EU Member States to impound planes or even ban airlines from operating in their territories.

### How much will the EU ETS cost the airlines?

The cost of complying with the EU ETS will differ among airlines depending on its emissions and the size of the free allocation they received. Larger airlines will receive a larger share of free allowances; airlines whose emissions have grown since 2004-2006 will need to buy more permits to comply with the scheme. Those with newer, more efficient fleets should produce less emissions per journey and will need to purchase fewer allowances if they face a shortfall.

Using 2010 emissions data from the UK it is possible to estimate the scale of airlines allowance shortfall in 2012 as well as the potential cost they will incur. Applying the current EUA price to the shortfall makes it easy to establish how much ETS compliance will cost the UK's top 20 emitting airlines in 2012. For example:

- EU ETS compliance in 2012 will cost British Airways in the region of £30,8 million
- EU ETS compliance will cost the UK top 20 emitting airlines in the region of £76 million
- Based on 2010 emissions levels Emirates will have an estimated surplus of 197,000 EUAs, with an estimated value of £1.3m

<sup>10</sup> Court of Justice of the European Union. (06/10/2011) *According to Advocate General Kokott the inclusion of international aviation in the EU emissions trading scheme is compatible with international law*. [Online] Available from: <http://europa.eu/rapid/pressReleasesAction.do?reference=CJE/11/104> (Accessed 15/02/2012)

<sup>11</sup> Nichols W, Anti-emissions trading bill could turn US airlines into 'outlaws', (08/12/11), *Business Green* [Online] Available from: <http://atwonline.com/eco-aviation/article/china-steps-eu-ets-protest-0221> (Accessed 15/03/2012)

<sup>12</sup> Buyck, C. China Steps Up EU ETS Protest, (21/02/2012) *Air Transport World*, [Online] Available from: <http://atwonline.com/international-aviation-regulation/news/china-prohibits-airlines-joining-eu-ets-0206>, (Accessed 15/03/2012).

<sup>13</sup> UPI. (11/01/2012) *India Protests EU Airline Emissions Tax*. [Online] Available from: [http://www.upi.com/Business\\_News/Energy-Resources/2012/01/11/India-protests-EU-airline-emissions-tax/UPI-25031326279600/](http://www.upi.com/Business_News/Energy-Resources/2012/01/11/India-protests-EU-airline-emissions-tax/UPI-25031326279600/) (Accessed 15/03/2012)

Table 1

Rank	Airline	2012 Allowances	2010 Emissions	Surplus / deficit	Surplus/deficit as % of emissions	EUA Cost (£) 2012
1	British Airways	10,343,937	14,865,507	-4,521,570	-30.4	-30,882,323
2	Virgin Atlantic	3,579,707	4,462,964	-883,257	-19.8	-6,032,645
3	Easyjet	3,697,330	4,438,790	-741,460	-16.7	-5,064,172
4	Emirates	4,327,310	4,130,151	+197,159	4.8	1,346,596
5	American Airlines	2,745,318	3,311,820	-566,502	-17.1	-3,869,209
6	United Airlines	2,440,010	3,041,660	-601,650	-19.8	-4,109,270
7	Cathay Pacific	2,377,669	2,936,700	-559,031	-19.0	-3,818,182
8	Singapore Airlines	2,240,200	2,931,581	-691,381	-23.6	-4,722,132
9	Continental Airlines	2,146,690	2,664,440	-517,750	-19.4	-3,536,233
10	Thomson Airways	2,364,253	2,433,410	-69,157	-2.8	-472,342
11	Air Canada	1,832,089	2,056,151	-224,062	-10.9	-1,530,343
12	Thomas Cook Airlines	1,961,054	2,015,634	-54,580	-2.7	-372,781
13	Qatar Airlines	1,541,007	1,608,681	-67,674	-4.2	-462,213
14	Malaysia Airlines	1,224,539	1,565,415	-340,876	-21.8	-2,328,183
15	Qantas Airways	1,020,117	1,479,862	-459,745	-31.1	-3,140,058
16	Etihad Airways	1,013,498	1,158,781	-145,283	-12.5	-992,283
17	Air India	923,601	1,144,082	-220,481	-19.3	-1,505,885
18	Swiss	599,094	1,141,409	-542,315	-47.5	-3,704,011
19	Monarch Airlines Limited	1,046,529	1,113,035	-66,506	-6.0	-454,236
20	Jet Airways	1,043,249	1,109,568	-66,319	-6.0	-452,959
	<b>TOTAL</b>	<b>48,467,201</b>	<b>59,609,641</b>	<b>-11,142,440</b>		<b>-76,102,865</b>

### What will the cost be to the customer?

The European Commission has predicted only a small impact to ticket prices, current estimations are in the range of €2 - €12. The actual increased cost to passengers will depend on whether airlines pass through the full cost of allowances which they received for free. This occurred for example when the power sector was included in the ETS as company accounts took into account the 'profit-forgone' of using an allowance to cover an emissions even if it had been received for free. Some airlines have already announced an additional cost as a direct result of the ETS. The US airline Delta<sup>14</sup> announced a \$3 ETS surcharge and the Irish no frills carrier Ryan Air<sup>15</sup> had added a €0.25 one way charge to its flight.

### Carbon pricing Vs fuel tax

The inclusion of aviation into the ETS has generated a huge amount of media interest, especially in those countries where the airlines oppose the inclusion. A consistent problem with the reporting of the issue in the mainstream media is that the debate has focused on the introduction of a *tax* rather than the introduction of a *market mechanism*. Some may argue that it's simply semantics, and ultimately both levy an additional charge, but, legally, this is not correct. An emission trading scheme is, legally, not the same as a tax, the Advocate General in her opinion on the ruling on the legality of the EU ETS echoes this point:

"[The EU ETS is a] market-based measure, the purpose of which is environmental and climate protection. Accordingly the emission allowances that have to be surrendered in respect of flights that take off from or land at airports within the European Union are levied

<sup>14</sup> Black, R. (05/01/2012) EU's Aviation is a Drop for China's Airlines. *The BBC*. [Online] Available from: <http://www.bbc.co.uk/news/mobile/science-environment-16423633> (Accessed 15/02/2012)

<sup>15</sup> Ryan Air. (12/01/2012) *Ryan Air to Introduce €0.25 ETS Levy to Cover New EU Eco-Looney Tax*. [Online] Available from: <http://www.ryanair.com/en/news/ryanair-to-introduce-0-25-euro-ets-levy-to-cover-new-eu-eco-looney-tax> (Accessed 15/02/2012)

in respect of the emission of greenhouse gases, not merely fuel consumption or the persons or property on board”<sup>16</sup>.

The primary purpose for the inclusion of aviation emissions into the EU ETS is for environmental protection. It is intended to incentivise airlines to improve the efficiency of their fleet and, where possible, more away from fossil fuels. And to do so in the most cost effective way. In the UK this will be the first emissions based environmental charge levied on airlines. Other levies on airlines in the UK, such as the air passenger duty (APD) have a core objective of raising revenues for the Exchequer<sup>17</sup>.

When considering the cost borne by the aviation sector due to its inclusion in Europe’s carbon pricing mechanism it is worth remembering that the sector does not pay tax on its fuel. The exemption of tax on commercial aviation fuel, kerosene, was set out in the 1944 Chicago Convention on International Civil Aviation and remains in place to this day. This is in effect a subsidy compared to other forms of land based transport, for example, UK rail operators are subject to the standard rate of fuel duty. This subsidy contributes to the sector’s growth and as such helped to double emissions from international aviation since 1990.

To better understand what a tax on aviation fuel might look like Sandbag has estimated, based on 2010 emission<sup>18</sup>, the volume of fuel used by the top 20 emitting airlines in the UK. We then applied the current UK tax rate for Avgas - a fuel used in piston driven light aircraft – of £0.377 per litre<sup>19</sup>. The difference between the costs of the EU ETS compared to the cost of a potential tax on aviation fuel is stark (see table 2). EU ETS compliance for the UKs top 20 emitting airlines in 2012 is 99% cheaper than a potential duty on fuel.

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<sup>16</sup> Court of Justice of the European Union. (06/10/2011) *According to Advocate General Kokott the inclusion of international aviation in the EU emissions trading scheme is compatible with international law*. [Online] Available from: <http://europa.eu/rapid/pressReleasesAction.do?reference=CJE/11/104> (Accessed 15/02/2012)

<sup>17</sup> HM Treasury. (2011) *Reform of Air Passenger Duty: A Consultation*. PU1136. London, HM Treasury. [Online] Available from: [http://cdn.hm-treasury.gov.uk/2011budget\\_airpassenger.pdf](http://cdn.hm-treasury.gov.uk/2011budget_airpassenger.pdf) (Accessed 15/02/2012)

<sup>18</sup> DEFRA. (2007) *Guidelines to Defra’s GHG Conversion Factors for Company Reporting*. London, DEFRA. [Online] Available from: <http://archive.defra.gov.uk/environment/business/reporting/pdf/conversion-factors.pdf> (Accessed 15/02/2012)

<sup>19</sup> HM Treasury. Fuel Duty Rates, [Online] Available from: <http://www.hmrc.gov.uk/tiin/tiin866.pdf>, (Accessed 15/02/2012)



Rank	Airline	2010 Emissions Tonne/CO <sub>2</sub> <sup>20</sup>	2012 ETS Cost (£) <sup>21</sup>	2012 Kerosene tax Costs (£) <sup>22</sup>
1	British Airways	14,865,507	30,882,323	2,225,693,463
2	Virgin Atlantic	4,462,964	6,032,645	668,203,903
3	Easyjet	4,438,790	5,064,172	664,584,523
4	Emirates	4,130,151	+1,346,596 <sup>23</sup>	618,374,475
5	American Airlines	3,311,820	3,869,209	495,852,319
6	United Airlines	3,041,660	4,109,270	455,403,423
7	Cathay Pacific	2,936,700	3,818,182	439,688,602
8	Singapore Airlines	2,931,581	4,722,132	438,922,175
9	Continental Airlines	2,664,440	3,536,233	398,925,290
10	Thomson Airways	2,433,410	472,342	364,335,016
11	Air Canada	2,056,151	1,530,343	307,851,043
12	Thomas Cook Airlines	2,015,634	372,781	301,784,757
13	Qatar Airlines	1,608,681	462,213	240,854,939
14	Malaysia Airlines	1,565,415	2,328,183	234,377,067
15	Qantas Airways	1,479,862	3,140,058	221,567,901
16	Etihad Airways	1,158,781	992,283	173,495,011
17	Air India	1,144,082	1,505,885	171,294,247
18	Swiss	1,141,409	3,704,011	170,894,040
19	Monarch Airlines Limited	1,113,035	454,236	166,645,828
20	Jet Airways	1,109,568	452,959	166,126,742
	<b>TOTAL</b>	<b>59,609,641</b>	<b>76,102,865</b>	<b>8,924,874,764</b>

Table 2

### Is including international airlines into the EU ETS fair?

Central to non-EU airlines protests has been the fact that the ETS will apply to emissions emitted whilst outside of European airspace, which, they argue created an extraterritorial rule which contravenes the sovereign rights of third countries. The Advocate General countered this by clarifying that the ETS is “concerned solely with aircraft arrivals at and departures from aerodromes in the European Union, and it is only with regard to such arrivals and departures that any exercise of sovereignty”<sup>24</sup>.

Another grave concern, notably of airlines from Non-Annex I countries under the UNFCCC, is the principle of common but differentiated responsibility (CBDR). Enshrined in the Kyoto Protocol it places a heavier burden on ‘developed’ countries in terms of green house gas mitigation. The fundamental problem with the inclusion of aviation into the EU ETS is not so much the cost, but the fact that it’s blind to the CBDR distinction and treats all airlines the same. Given that the airline industry has been dominated by Western carriers since its commercialisation, there is a feeling that the responsibility to curb emissions remains, for the time being, with ‘developed’ countries.

<sup>20</sup> Emissions data taken from the DECC figures for EU ETS aviation operations regulated in the UK:

[http://www.decc.gov.uk/en/content/cms/emissions/eu\\_ets/aviation/aviation.aspx](http://www.decc.gov.uk/en/content/cms/emissions/eu_ets/aviation/aviation.aspx)

<sup>21</sup> EUA price of €8.17 take from 10<sup>th</sup> Feb 2012 [www.pointcarbon.com](http://www.pointcarbon.com)

<sup>22</sup> 2010 emissions levels were used to estimate the amount of kerosene used by each airline Using the DEFRA fuel conversion factors <http://archive.defra.gov.uk/environment/business/reporting/pdf/conversion-factors.pdf>

We assumed a kerosene tax based on the current UK AVgas duty of £0.377 per litre. Avgas or aviation gasoline is an aviation fuel used to power piston-engine aircrafts and commonly used for recreational light aircraft. <http://www.hmrc.gov.uk/tiin/tiin866.pdf>

<sup>23</sup> Emirates emissions in 2010 were 4,130,151, while their 2012 allocation is 4,327,310. Assuming Emirates’ emissions are similar to their 2010 levels, they will have a surplus of just under 200,000 EUAs in 2012.

<sup>24</sup>The Court of Justice. (2011) *The Air Transport Association of America and Others*. Case C-366/10. London, the Court of Justice. [Online] Available from:

[http://curia.europa.eu/juris/document/document.jsf?jsessionid=9ea7d0f130deb63182abaf3a4ccb82918cf919dd8cc4.e34Kaxil\\_c3eQc4\\_0LaxqMbn4NchyKe0?docid=110742&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&cid=385267](http://curia.europa.eu/juris/document/document.jsf?jsessionid=9ea7d0f130deb63182abaf3a4ccb82918cf919dd8cc4.e34Kaxil_c3eQc4_0LaxqMbn4NchyKe0?docid=110742&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&cid=385267) (Accessed 15/02/2012)

Airlines from fast developing economies, such as Chinese and Indian, may be disadvantaged in that their free allocations' were set based on 2004-2006 levels. If their emissions have grown since this period, their free allocation will reflect historic levels. The European Commission have, addressed this by making provisions for operators showing growth of more than 18% within a set period of time having access to new entrants reserve (NER) permits. What's more, a further provision excluding low volume airlines - operator with fewer than 243 flights per period for three consecutive four-month periods, or flights with total annual emissions lower than 10,000 tonnes per year – will be exempt from there scheme. This will be particularly beneficial to airlines from developing countries. Nevertheless, the inclusion of aviation in the EU ETS remains for some an infringement against the principle of CBDR.

What should be of greater concern to international airlines is the final destination of the revenues generated from the scheme. EU ETS auction revenues will be collected by the Member States where the airlines are registered. Under current ETS rules Member States auction revenues “*should be used to tackle climate change in the EU and third countries*”<sup>25</sup>. Some EU Member States have taken an innovative approach, such as Germany who will direct their auction revenues into a ‘Special Energy and Climate Fund’<sup>26</sup>. Other Member States, such as the UK are far less willing to hypothecate auction revenues.

Finally it must be reiterated that the inclusion of aviation into the EU ETS allow for airlines to be exempt if the home country implements ‘*equivalent measure*’. What these equivalent measures look like is yet to be determined, but the European Commission has made it patently clear that it wishes other countries to tackle growing emissions from air travel and to that end the EU ETS will serve as a good framework until counties develop their own scheme or a global solution is found.

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<sup>25</sup> Article 3d (4) Directive 2003/87/EC, [Online] Available from: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:02003L0087-20090625:EN:NOT>, Accessed 15/02/2012)

<sup>26</sup> Esch, A. An innovative approach: The German use of ETS revenues for national and international climate financing (11/11), *German Watch*, [Online] Available from: <http://www.germanwatch.org/klima/clifin-ets11.pdf>, Accessed 15/02/2012)