Written testimony for Senate Committee on Commerce, Science, and Transportation hearing on the European Union's Emissions Trading System

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Introduction

For more than 15 years, the EU has been seeking global agreement through the United Nations to tackle aviation's increasing contribution to greenhouse gas emissions, in particular through the International Civil Aviation Organisation (ICAO). The EU remains committed to the multilateral process and reaching a global agreement within ICAO. ICAO is the right place to advance global action on measures, including market-based measures, to address the climate change impacts of international aviation and the EU strongly supports this work. The EU welcomes ICAO's ongoing and intensive work programme in 2012. The EU continues to constructively engage in full with ICAO to find a solution, and wants in particular to engage with all States that are willing to work together to find a global solution.

The EU ETS is already applied by 30 sovereign states, with a combined population of over 500 million people, working together to implement a common approach to reduce aviation emissions as part of a comprehensive package of policy measures. Such a mechanism could serve as a building block for future global action.

Although it is the focus of this testimony, aviation actually only comprises around one-tenth of the overall EU ETS. In fact, the EU ETS covers more than 10,000 industrial plants – power plants, oil refineries, steel mills and pharmaceuticals. Since it began operation in 2005, it has included some installations operated in the European Union of large U.S.-based companies such as Intel, IBM, Exxon-Mobil, U.S. Steel and General Electric.

It is important to have an understanding of context. It is no longer generally questioned that human activities are affecting the composition of the atmosphere in a way that is expected to result in climate change. Climate change is an urgent problem and one that is important to EU politicians and to their constituents. The European Union is committed to transforming Europe into a highly energy-efficient and low greenhouse gas-emitting economy and made a firm independent commitment for the EU to reduce its greenhouse gas emissions to at least 20 % below 1990 levels by 2020. The EU ETS is a cornerstone of the EU's climate policy.

The vast majority of countries in the world, including the United States, have agreed that average global temperature increase should be kept below 2 degrees Celsius as compared to pre-industrial levels[1]. To achieve this goal, G8 leaders have as recently as last month 'recognize[d] the need for increased mitigation ambition in the period to 2020'[2]. To date there is no silver bullet to combat climate change. In order to achieve the global goal, all sectors of the economy should contribute.

Globally, CO_2 emissions from the aviation sector have been growing rapidly and are forecast to continue to increase. By 2020, global international aviation emissions are projected to be around 70% higher than 2005 levels. According

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[1] G8 summit: *13. We agree to continue our efforts to address climate change and recognize the need for increased mitigation ambition in the period to 2020, with a view to doing our part to limit effectively the increase in global temperature below 2°C above pre-industrial levels, consistent with science.*

[2] http://www.whitehouse.gov/the-press-office/2012/05/19/camp-david-declaration#.T7nkWPly1lw.

to ICAO forecasts emissions could further grow by some 300% to 700% by 2050. Europe has decided to address these emissions through a comprehensive approach comprising a wide range of policy measures, including technical and operational measures, as well as through the inclusion of aviation in the EU ETS.

For 2012, the expected reductions from application of the EU ETS to aviation are 27.9 million tonnes[3]. Given growth in aviation emissions, over the period up to 2015, the emission cumulative reductions are expected to be 176.4Mt[4].

EU and the United States - A Shared Objective

Both Europe and the US have clearly stated in the 2010 ICAO Assembly that they support global goals to limit global international aviation emissions at or below 2005 levels by 2020[5]. For the EU to contribute to achieving such a global goal, the implementation of our domestic climate change policy is vital. All analysis shows that market based measures are needed in Europe if this goal is to be reached in a cost-effective way. All the technical and operational measures being implemented in the EU are insufficient to achieve such an ambition level.

The EU values the important relationship with the United States on transport and climate change issues. In recent years, we made significant progress on a number of transport issues and particularly on aviation through the EU-U.S. air transport agreement. The EU recognises that the United States has strong concerns about the application of the EU ETS to aviation. The EU respectfully takes a differing view, seeing the EU legislation as a potential building block for a future agreement at international level.

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[3] Expected growth in emissions beyond free allocation and 32.2m aviation allowances offered at auction, meaning reductions in other sectors or through international credits, calculated on basis of projections at http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/11/631. Actual aviation emissions for 2012 may be lower. These projections do not include the reduction from reducing demand for aviation services. If costs of purchasing allowances and credits are passed on to consumers, future forecasted demand relative to business as usual levels has been estimated to be reduced by1.7%-2.9% for an allowance price of €30, while the increase in revenue tonne kilometres would still be a minimum of 135%, http://ec.europa.eu/clima/policies/transport/aviation/docs/sec_2006_1684_en.pdf.

[4] See http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/11/631, sum of emission reductions calculated in accordance with footnote 3.

[5] http://legacy.icao.int/icao/en/assembl/a37/wp/wp186_en.pdf.

The EU shares with the United States a strong commitment to work in ICAO on a global approach to reduce international aviation's climate impacts. The EU is keen to make progress on the issue. If an agreement on a global solution can be found within ICAO, then the EU is ready to review the EU ETS legislation. A major obstacle to progress has been differences of view between countries on the concept of Common but Differentiated Responsibilities and Respective Capabilities (CBDRRC) that is included in the UN Framework Convention on Climate Change and whether this concept is at all relevant in the context of international aviation emissions. Last month's UN climate negotiation session in Bonn has shown that differences between countries' views continue to make progress difficult. The EU is committed to work with the US and other States to make progress on this issue.

It should be noted that, in the absence of stronger action, the global goals that the EU and United States are aiming for in relation to international aviation emissions will not be met.

The EU ETS – An Introduction

Europe's comprehensive approach to reducing emissions from aviation includes a major modernisation of the EU's airspace, research and development of clean aviation technology, development of sustainable biofuels and market based measures.

As part of the EU's comprehensive approach, aviation is covered by the EU ETS from 2012. The legislation only applies to aircraft operators active in the EU market, i.e. to flights landing at or departing from European airports. Under the EU ETS, aircraft operators have been monitoring their CO2 emissions since 2010, and reported them for the first time in March 2011. Aircraft operators are required to surrender allowances in respect of their reported CO2 emissions on an annual basis, with the first compliance to take place by 30 April 2013 in respect of 2012 emissions.

The EU ETS is neither a tax nor a charge. It is fundamentally different from a tax or a charge, because airlines can meet their obligations by remaining within their caps or by purchasing additional allowances, either from government or on the open carbon market. Not only are allowances allowed in unlimited quantities from other sectors, but a proportion of international credits (JI and

CDM credits)[6] may be used to meet requirements under the system. The price of allowances is fixed by the market and not determined by a State. Even in respect of the small proportion of allowances which are offered at auction[7], the primary purpose is to limit emissions and not to increase revenues for the Member State Governments. Unlike taxes and charges where money is paid to the state funds or to cover the specific cost of a service provided, an operator who buys an allowance in an auction receives an allowance in return. An allowance has a value and can be bought and sold on the market for profit.

The EU ETS is a cost effective measure, inspired in part by one of the most successful pieces of United States environmental legislation ever designed, the SO_2 allowance trading system under the Clean Air Act. Cap and trade systems such as these incentivise cuts in emissions by setting a limit but allowing companies to freely manage their operations in the light of these limits. These types of measures are commonly referred to as market based measures (MBMs) because of the market (or carbon pricing) element inherent in their design. The benefit of emissions trading is that it enables reductions in emissions across the economy in the most cost-effective manner (at least cost). Reductions are incentivised where costs of abatement are lowest while the environmental outcome is guaranteed by the overall emissions ceiling. Hence, it allows the sector to continue to grow by becoming more efficient and by purchasing offsets and allowances from other sectors where emission reductions are more cost-effective. Market-based measures also have the potential to generate revenue that can be used for climate change mitigation and adaptation within and/or outside of the sectors covered by the measure.

Market-based measures also encourage technology improvements as they strengthen the business case for making investments in new technology that can reduce emissions. The EU ETS, as a market-based measure, improves the rate of return and reduces the payback period for technology investments that reduce fuel consumption. The EU ETS also incentivizes commercial use of sustainable biofuels for aviation. This is because the system gives a long term, predictable price incentive for take-up of these fuels because they count as zero emissions.

That means, for example, that to the extent sustainable biofuels are used by airlines, aircraft operators do not need to surrender any allowances or international credits in respect of the proportion of biofuels used during their

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[6] For emissions in 2012 aircraft operators may use international credits up to 15 % of the number of allowances they are required to surrender, for emissions in the period from 2013 to 2020 it may be not more than 1.5%.
[7] 15% of aviation allowances are offered at auctions in 2012 and in the period from 2013 to 2020.

flights. This also incentivises fuel producers to invest in the production of sustainable biofuels.

EU ETS and International Law

Aircraft operators operating flights to or from EU airports are subject to the rules of the EU ETS. The EU legislation contains no regulation of how aircraft operate, either within or outside EU airspace, and there is no constraint on activities except for flights that arrive at or depart from EU airports.

The EU ETS uses an approach based on the total emissions from a given flight, as a parameter applicable to flights which take off and land in the EU. This approach was identified by ICAO as one of the options States should consider when implementing market based measures.

ICAO has previously identified an approach based on the nationality of airspace to allocate responsibility for emissions as "impracticable"[8]. The same conclusion was also reached by the United Nations Framework Convention on Climate Change (UNFCCC) as early as 1998[9]. Moreover, allocating responsibility for emissions on the basis of nationality of airspace has not subsequently been proposed by any country in discussions in ICAO or in the UNFCCC.

Regular commercial flights between the United States and Europe are operated not only by EU and US airlines, but also by other airlines such as Air India, Jet Airways based in India and even by airlines from our least developed country partners, such as Ethiopian Airways. In addition, US carriers like UPS and Fedex operate substantial flights within the EU. It is clear that applying differential requirements on aircraft operators of different nationalities would distort competition between those operating on the same routes. Hence, the EU ETS is non-discriminatory and applies to all airlines operating in the European market without distinction as to nationality.

The EU ETS is fully consistent with the Chicago Convention and bilateral air service agreements which clearly state that Contracting States have the

[8] ICAO Doc 9885, para 3.2.34: "...delimitation of geographical scope based on national airspace appears impracticable."
[9] Report of the Subsidiary Body for Scientific and Technological Advice on the work of its fourth session, Geneva 16-18 December 1996, Item IV.B.2. – conclusions.

sovereign right to determine the conditions for admission to or departure from their territory and require all airlines to comply. There is no extra-territorial effect because no obligations are imposed in the territory of another State. The EU fully recognizes that this is a fundamental principle of international aviation law, and should be fully respected. The requirement to report emissions and to surrender allowances under the EU ETS only arises when an aircraft enters or departs from an airport in an EU Member State.

Perhaps no other business sector is as international as aviation, and non-discrimination between aircraft operators is crucial. Creation of any distortive effect for airlines operating in a global competitive marketplace must be avoided. In line with this, the EU is working for climate measures to be agreed in ICAO or applied by States that are non-discriminatory for all airlines.

In December 2011, the European Court of Justice, the highest court in the EU, reached a final judgement in light of a challenge by several airlines based in the United States against the EU legislation. The Court confirmed that the EU ETS law is fully compatible with the relevant principles of customary international law and with the provisions of the EU/US Open Skies Agreement.

In addition to the principle of non-discrimination, which is key under the Chicago Convention, equal treatment is important for effective policy. Many airlines based outside the EU and the United States fly to and from US and EU destinations.

The EU and ICAO

ICAO has long recognised the role that market-based measures can play in achieving environmental goals cost-effectively and in a flexible manner.

ICAO first endorsed the use of "open emissions trading" for international aviation in 2001. It has long been recognised in ICAO that offsetting emissions growth in aviation through reductions in other business sectors by means of an open system is an attractive option. This is due to the high growth in demand forecast in the aviation market and the limited number of cost-effective abatement opportunities within aviation.

Following on from this endorsement in 2001, ICAO studied three options for implementation. In 2004, this work led ICAO, with United States' backing, to conclude that implementation of a unified global system based on a new legal instrument under ICAO auspices should not be pursued further. Instead, ICAO States unanimously agreed to pursue implementation through other avenues, one of which was "to incorporate emissions from international aviation into Contracting States' emissions trading systems"[10].

This is precisely the avenue that the EU followed. Legislation to include aviation in the EU ETS was first proposed in 2006 and entered into force in 2009. This legislation was developed, negotiated and adopted with complete transparency.

In the intervening years, discussions on aviation and climate change have continued at ICAO and UNFCCC. A breakthrough has not yet been achieved in ICAO and the States represented there have been unable so far to agree on binding global goals and measures to address emissions from international aviation.

An aspirational goal to limit emissions was adopted in ICAO's 2010 Assembly Resolution on international aviation and climate change. However, the medium-term goal is only in respect of limiting emissions from 2020 onwards at 2020 levels. As such, this goal falls short of both the EU and US goals for global aviation emissions in 2020 to be no higher than 2005 levels. The 2010 ICAO Assembly Resolution also recognises that some States may take more ambitious action before 2020, and includes 15 principles for the application of market-based measures by States. The EU ETS is fully consistent with these principles.

In recent months ICAO has re-started its discussions on aviation and climate change. In January 2012, the President of the ICAO Council, Mr Roberto Kobeh, initiated a process to develop options for global market-based measures to address aviation emissions. His aim is to come forward with a proposal by the end of 2012. To that end, a working group of six ICAO Council members (one from each ICAO region) and an aviation industry representative was set up to define and develop a shortlist of possible options for global market based

[10] http://legacy.icao.int/env/a35-5.pdf.

measures for international aviation. The EU strongly supports this ICAO process and is actively engaged in this work together with experts from the United States and other countries.

The EU ETS is the world's largest market based measure for GHG mitigation. While the EU ETS legislation is an important step, the EU seeks greater global reductions to be agreed through ICAO. The EU has also made it clear that it is willing to employ flexibilities in its legislation, in light of meaningful action in ICAO.

In terms of what the EU wants to achieve in ICAO, there are three key elements[11].

- The first is that what is agreed on market-based measures in ICAO should deliver environmental benefits in terms of emissions reductions, equal to or beyond those delivered from the measures currently in place in third countries and in the 30 countries applying the EU emissions trading system.
- The second point is that, whether market-based measures involve taxes, levies or emissions trading, the system adopted by ICAO or applied by States must be non-discriminatory for all airlines. Non-discrimination is one of the most important principles of international aviation law, and should be fully respected. We must avoid creating any distortive effect for airlines operating in a global competitive marketplace.
- Thirdly, a robust worldwide system should contain targets and measures for ICAO member countries.

Flexibility in EU legislation

The EU fully supports global action on aviation emissions. The EU legislation therefore contains two flexibilities.

Firstly, the legislation foresees that it could be amended to take into account any future agreement adopted at global level. Indeed, given our commitment to finding a global solution, it is not overstating the case to say that our legislation is designed to be amended in the event of an agreement on global measures to reduce greenhouse gas emissions from aviation. The European Commission is required by the law to review the EU ETS legislation in light of

[11] http://ec.europa.eu/clima/news/docs/speech_en.pdf .

such an agreement on global measures in ICAO. Pending the entry into force of such a global agreement, the EU legislation will continue to apply.

Secondly, the legislation contains provisions to recognise the measures by other States to reduce the growth of aviation emissions. This would allow for the exemption of all incoming flights operating from those countries to the EU on a non-discriminatory basis. This flexibility contained in the EU law can be exercised on the basis of action by other countries, which could include measures set out in state Action Plans that are submitted to ICAO.

There is no prospect of suspending the EU legislation. The legislation to include aviation in the EU ETS has been adopted after three years of intensive public debate and negotiation. It has been adopted unanimously by the 27 Member States that are represented in the Council of Ministers and with a more than 90 percent majority in the European Parliament. Any significant amendment to the legislation other than exempting incoming flights, as outlined above, would need to undergo the same legislative process. Aviation in EU ETS is strongly supported by all Member States, and as recently as 15 March 2012, the European Parliament adopted a statement calling for the EU to continue to implement the EU ETS legislation.

Compliance costs

In the EU ETS, the large majority of emissions allowances are allocated to individual aircraft operators free of charge. All commercial airlines with significant operations to or from EU airports submitted applications for free allocation in early 2011.

For administrative ease, each aircraft operator is administered by a single Member State for all of their aviation activities covered by the system. Under this approach, most U.S.-based airlines are regulated by either the United Kingdom or Germany[12]. Comparing the published[13] free allocation figures with recent emissions (e.g. in 2010) indicates that for major aircraft operators based

[12] Aircraft operators based in the United States are administered by Belgium, Denmark, France, Germany, Ireland, Romania and the United Kingdom, see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:039:0001:0132:EN:PDF.
[13] http://ec.europa.eu/clima/policies/transport/aviation/allowances/links_en.htm.

in the United States these free allowances do not deviate substantially from expected needs. On top of these free allowances a certain amount of international credits can be used for compliance[14].

The level of free allocation is fixed in the legislation for all future years up to 2020, subject to adjustments if any incoming flights were to be exempted from the system. Allocations to aircraft operators are based on their respective flight activity in 2010 (measured in terms of the total distance travelled and the total mass of passengers and freight carried). Allocations are therefore based on activity and not emissions, and thus reward those that are more efficient and those that have already invested in fuel efficiency.

In 2012, 85% of aviation allowances will be distributed to airlines for free and 82% in subsequent years (up to 2020). This high free allocation of allowances also means that the costs for the aircraft operators should be modest. For example, using the ICAO carbon calculator[15], 0.448 tonnes of CO_2 is emitted per passenger on a typical flight from Brussels to Washington DC. As airlines will receive the majority of their allowances for free, the cost per passenger would be less than $2 each way at current carbon prices. This is less than most airport taxes and charges. Many airlines, like several major United States airlines, have included a $3 fee to compensate for the EU ETS in their ticket prices.

The EU ETS allows for additional flexibility as it enables the aviation sector to increase its emissions by offsetting a portion with international credits. As part of a comprehensive approach, it makes sense to enable aviation to fund emissions reductions through other sectors to allow for further continued growth in aviation activity.

There have been some exceptionally high estimates of costs, which are unfounded. The degree of costs passed through to passengers depends inter alia on the commercial decision of airlines. An IATA study in 2007[16] suggested cost pass through of 75% of the marginal cost onto airfares, and a MIT study[17] has also looked into this issue, concluding that in case of full pass through all costs, including the opportunity costs associated with free allowances, to

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[14] see footnote 6.
[15] http://www2.icao.int/en/carbonoffset/Pages/default.aspx.
[16] IATA – Financial impact of extending the EU ETS to airlines – 9th January 2007.
[17] http://www.sciencedirect.com/science/article/pii/S0969699711001268.

consumers, profits for United States carriers would increase. Reports have also been prepared by the U.S. Government Accountability Office[18] and the U.S. Congressional Research Service. Other publicly available analyses include one by Bloomberg New Energy Finance[19]. Given the inconclusive nature of studies, empirical evidence in this area is useful to progressing on market-based measures in ICAO.

Revenue from auctioning aviation allowances

The EU Member States agreed in the legislation that all revenue from EU ETS auctions of aviation allowances should be used to tackle climate change in the EU and in third countries. This includes the funding of research and development in the fields of aeronautics and air transport. This degree of commitment is unprecedented in EU legislation. In addition, the legislation requires Member States to publicly report the use of revenues for these purposes. No auctions of aviation allowances have yet taken place, so no revenues have yet been generated.

The extent to which the EU ETS will raise revenue in the future for EU Member States has sometimes been overstated. Accurate figures have been published online[20].

Year	2012	2013	2014	2015
Number of aviation allowances auctioned (rounded)	32.2 m	31.6 m	31.6 m	31.6 m

In terms of the quantities of revenue likely to be generated, this will of course depend on the carbon price, which varies according to supply and demand. Over the period 2013-2020, 31.6 million aviation allowances will be auctioned each year. At current carbon prices of approximate €6.32 (~$7.81), less than €200 million ($247m) per year would be generated across 30 countries. The

[18] http://www.gao.gov/new.items/d09554.pdf.

[19] http://www.newenergyfinance.com/free-publications/white-papers/, "Including aviation in the EU ETS - the burning question".

[20] http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/11/631&format=HTML&aged=1&language=EN&guiLanguage=fr.

majority of flights covered by the EU ETS are between airports in the EU or by airlines based in the EU. The proportion of flights operated by airlines based in the United States is less than 10% of the total.

Airlines make up around 10% of the total EU ETS, and auction revenues from aviation allowances are estimated to make up a small fraction (only 6%) of overall EU ETS auction revenue that Member States have agreed should be used to tackle climate change, inter alia to fund research and development for mitigation and adaption, including in particular in the fields of aeronautics and air transport[21].

Nor does any aircraft operator have to participate in auctions. It is their decision how to comply, including by reducing emissions, acquiring aviation allowances from other airlines, acquiring allowances from other companies from the other 90% of the system, or acquiring international credits.

If an airline wants to buy allowances from an auction and be sure that the revenues are used to tackle climate change, then this can be done today with certainty from any auction by Germany. According to existing German legislation, all revenues from auctioning of allowances, including aviation allowances, go directly into the Energy and Climate Fund and are dedicated by law to climate purposes[22].

Related to the introduction of aviation in EU ETS, Germany reduced its Air Passenger Duty as of 1 January 2012[23].

Conclusion

The EU wants to see a comprehensive and non-discriminatory multilateral agreement in ICAO on aviation emissions as soon as possible, and the US, EU

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21 http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/11/631&format=HTML&aged=1&language=EN&guiLanguage=fr; an independent estimate of auctioning shares has been made by the German Aerospace Centre: http://www.trforum.org/forum/downloads/2010_14_Economic_Impact_EU_Emissions_Airlines.pdf.

22 http://www.bundesfinanzministerium.de/nn_3380/DE/BMF__Startseite/Aktuelles/Aktuelle__Gesetze/Gesetze__Verordnungen/005__a.templateId=raw,property=publicationFile.pdf; http://www.bmu-klimaschutzinitiative.de/en/news.

23 http://www.buzer.de/gesetz/10010/a174272.htm.

and other players now need to work together to develop renewed momentum for substantive talks in ICAO at global level.

The European Union and the United States have a key role to play in crafting such an international consensus. Our strategic partnership on aviation issues has produced positive results before, with Open Skies and Aviation Safety agreements being just two examples, and we should build on this. Working together also requires respecting each others' rules and regulations.

We very much look forward to continued cooperation with the United States to tackle the important challenges ahead of us in ICAO and to working together with the goal of achieving an effective global agreement.