Economic consideration of extending the EU ETS to include aviation

A REPORT PREPARED FOR THE EUROPEAN LOW FARES AIRLINE ASSOCIATION (ELFAA)

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Executive summary

Frontier has been asked to prepare this report by the European Low Fares Airline Association (ELFAA)[1]. The role of this report is to provide an objective assessment of the economic issues related to including aviation in the European Union Emissions Trading Scheme (EU ETS). It will contribute to the outcomes of the Aviation Working Group and the process being followed by the European Commission. Specifically, this report:

- carries out a systematic assessment of the literature to set out the evidence on the economic aspects of applying the EU ETS to aviation in an objective and robust manner;
- sets out a framework that focuses the debate on the important economic aspects of including aviation in the ETS and (where possible) comments on the impacts of proposed options;
- draws conclusions about the properties that should be reflected in an effective and well designed application of EU ETS to the aviation sector; and
- addresses the impact that EU ETS may have on competition in the airline sector.

The following is a summary of the key conclusions from this report:

Economic impact

- A full cost-benefit analysis is needed to make an objective judgement of the net benefits of aviation relative to the emissions that it generates and the relative merits of targeting policy at aviation relative to other sectors. The analysis would be used to come to a decision on whether environmental policy should be targeted towards aviation, and if so, what form it should take.
- Only after a proper cost-benefit analysis has been conducted should the options for how to deal with aviation emissions be considered. If it is determined that the inclusion of aviation in the ETS is the most appropriate option, then careful design is required to ensure that extending the EU ETS to aviation encourages efficient abatement in the aviation sector at the lowest possible cost.
- The contribution of aviation to total CO_2 emissions is material, but still relatively small. While within the EU-15 airline emissions may amount to around 4% of total CO_2 the figure is likely to be significantly lower once the 10 new member states are taken into account. Furthermore, while aviation is growing, research suggests that its share of total emissions is likely to be only

[1] ELFAA airline members are: easyJet, Flybe, Hapag-Lloyd Express, Norwegian, Ryanair, Sky Europe, Sterling, Sverige Flyg, Transavia and WIZZ Air. For more details, visit www.elfaa.com.

around 5% by 2030. Overall, aviation is a small contributor to carbon emissions compared to sectors such as power generation and road transport. Hence disproportionate attention may be being paid to aviation in comparison to other sectors from which greater reductions in CO_2 could be achieved.

- Aviation is a significant contributor to EU employment and GDP (reported to be 3.1 million jobs and GDP of €221bn in the EU-15), having particularly important knock-on implications for many other sectors, such as tourism. Aviation is also a key driver for integration with the new member states and growth under the EU Lisbon Agenda. Any impact that EU ETS may have on aviation is likely to have a disproportionate impact on the economies of the new member states where the aviation sector is currently less developed. There are additional concerns relating to the impact which uncertainty over allowance prices may have on a dynamic sector such as aviation given the experience of ETS Phase 1.
- While the European Commission has set out a broad cost-benefit framework for developing environmental policy it does not appear that this has been applied in deciding to place aviation in the EU ETS. An assessment of the net benefits (gross economic value added/tonne of CO_2 emitted) of aviation relative to other sectors that are major producers of CO_2 would show that although aviation emissions are material, the net benefits of aviation are considerably higher than several other sectors. This suggests that abatement in these other sectors should take a higher priority than abatement in aviation.

Scope for abatement and scheme design

- It is unclear how much additional scope for abatement there is within the aviation sector. Aviation already faces strong incentives to reduce fuel burn – and therefore CO_2 emissions – due to high jet fuel prices. The EU ETS would increase this incentive at the margin, but the impact on reduced CO_2 emissions is unclear. The value of including aviation in the EU ETS is therefore questionable.
- We have identified general opportunities for abatement in EU aviation of the order of some 17% of all emissions generated by EU flights. However, of these opportunities, almost half (or 8% of all emissions) are constrained by the way in which Air Traffic Management (ATM) acts and therefore putting aviation into the ETS would have no effect on these emissions. By contrast, replacing aircraft (one of the most effective steps airlines can take) could achieve a reduction of 1% of all emissions generated by EU flights per annum. Given the scale of the emissions issue that is due to inefficiencies in ATM there is an urgent requirement for the Commission to consider further policy that will include ATM activities within efforts to reduce CO_2 emissions and how this should be coordinated with other programmes to modernise ATM, such as SESAR.
- In designing the scheme for aviation, a scheme that covers the largest quantity of emissions would be most effective. This suggests that if aviation is included in ETS it should cover all flights into and out of the EU, regardless

of destination or origin of flight. Restricting ETS to only intra-EU flights would reduce its coverage to only 20% of EU aviation emissions and less than 1% of total EU emissions.

- At the same time, it is important that any scheme is based on robust science in order to have credible outcomes. Emissions directly linked to the environmental impact (rather than to an arbitrary multiplier of fuel burn) would have most chance of actually inducing the most efficient behaviour.

Allocating allowances

- Much of the present work in the area assumes that the long-run price of allowances will be lower than the current market price of c. €27 per tonne. However, this assumption is made without asking whether low allowance prices would be consistent with promoting a material level of abatement. Moreover, little consideration has been given to the key underlying drivers: the determination of the total quantity of allowances, the true shape of the marginal abatement cost curve of all participating sectors and the likelihood, or otherwise, of being able to offset commitments by abatement in other countries outside the EU through the use of Kyoto Protocol-based mechanisms.
- Once the quantity of allowances is determined, a process is needed for allocating these allowances to the aviation sector. We find that defining aircraft as EU ETS "installations" for allocation purposes is not a feasible solution. We conclude that, of the options considered to date, defining the installation as either the operator of the passenger (or freight) aircraft or as an airport would be workable options. Applying ETS directly to airports may, in practice, provide the most effective mechanism to pass on the incentives of ETS to airlines through landing charges.
- The quantity of any allocations to an installation must not depend on "grandfathering" of emissions, as this would discourage abatement before the EU ETS is introduced and would reward operators that have done less to reduce emissions. Allocations must be made on the basis of benchmarking of industry averages or hypothetical best practice. Out of the options available, revenue tonne kilometres (RTKs), has the potential to provide a relevant measure although there remain some practical issues to be resolved. This principle applies whether airline operators or airports are designated as the relevant installations.

The impact of the EU ETS on competition in the aviation sector

- Because the demand for aviation is sensitive to price, ETS may have a greater impact on the demand for air transport than it has had on the demand for products already included in the scheme.
- Furthermore, because the demand for the services of Low Fares Airlines (LFAs) is more sensitive to price than the demand for the services of the Full Service Airlines (FSAs) the relative impact of ETS would be greater on the LFA segment than on the FSAs.

- Current ETS allowance prices could add 5% to 8% to an LFA's average ticket price which would in turn reduce demand for LFA services by between 7.5% and 12%. In response to such price movements, it is likely that there would be a reduction in services on many routes, which would reduce the intensity of aviation competition. By contrast the impact of ETS on FSAs would be much more limited, reducing demand by only 2% to 3%. As LFAs tend to operate newer and cleaner aircraft than the FSAs (on average) other things being equal the distortion of competition between LFAs and FSAs may have the effect of reducing the drive towards introducing cleaner more energy efficient operations in the sector as a whole.
- In addition the process of allocating allowances may further affect competition between airlines. To avoid this effect, allocation must be made in a way that treats growing and static (or declining) airlines on a level playing field. This cannot be achieved if allocations are made to airlines in such a way that initial allocations and subsequent allocations for new services are made using different methods (e.g. granting allowances to airlines in one instance and requiring operators to purchase allowances in the other). A dynamic process of allowance allocation therefore needs to be developed that preserves a competitive level playing field for aviation over the entirety of the phase. Such a process would take account of growth of successful airlines and decline of unsuccessful airlines, and would not tilt their competitive advantage by virtue of their success or decline. Treating airports as the relevant installation may resolve this problem because all movements, regardless of whether or not they are "new" would impose the same marginal ETS cost on the airport operator.
- It seems to us that the only way to ensure that ETS allowances are allocated on an even-handed basis to all operators in the EU is that the allocation process has harmonised rules and administration through a central EC level process. It is our view that a process driven by the Member States is too susceptible to discrepancies and asymmetries of treatment between different Member States. This may have a material impact on competition between airline operators based in different countries if they have received very different treatment under the ETS by their own national governments.

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