

Climate Change (Scotland) Act 2009 – Secondary Legislation

A response to the consultation from Friends of the Earth Scotland

International Aviation and Shipping

1. Do you think that the methodology adopted by AEA Technology (as described in Appendix 3 of its report - *Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990-2007*)¹ for disaggregating the UK figures for emissions from IA&S for each of the four UK countries is appropriate for the purposes of the Act?

It is acceptable as an initial approach, but has significant weaknesses, which we would prefer to see rectified. At a minimum we believe the Scottish Government should undertake or commission work to develop a parallel passenger-based methodology – to form part of the consumption reporting track required by the Act.

1b) If you think that this methodology is appropriate for the purposes of the Act, please outline your reasons why.

1c) If you do not think that this methodology is appropriate for the purposes of the Act, please outline your reasons why. What revisions would you suggest?

There are several ways in which the proposed methodology may not fairly allocate emissions between countries:

a) Constraining the totals by the total fuel sales within the UK is likely to underestimate UK and Scottish responsibility for *shipping* emissions, and much refuelling is undertaken elsewhere.

b) For *aviation* the methodology accounts all emissions from outgoing flights, and none from incoming. This underestimates responsibility because flights both into and out of the UK are disproportionately filled with UK origin passengers. We would prefer an approach which adjusted the emissions account in relation to the overall share of passengers (both in- and out-bound) who are UK/Scottish citizens.

c) Furthermore for *aviation*, the methodology only attributes outbound emissions until the first stop of the aircraft or arrival at a hub. We believe for international flights, the total emissions to the final destination of the aircraft should be included in Scotland's total. This provides a better measure of responsibility, and greater parity between consideration of direct and indirect flights. It also prevents the onward emissions from failing to appear in national accounts if the intermediate stop is in a country which has not adopted a similar methodology.

d) A robust measure for *aviation* would also attribute shares from the UK's hub airports to the devolved administrations in proportion to the passenger origin data. Otherwise

¹Available at

http://www.airquality.co.uk/reports/cat07/0909240905_DA_GHGI_report_2007_Appendix_3_Issue_1.pdf

Scotland's responsibility for international aviation emissions will be dramatically reduced by the ways in which use of hub airports is accounted. For instance in 2006 this meant that just 3% of the UK's international aviation emissions would be attributed to Scotland (contrasting with our roughly 10% share of other emissions), although it is inconceivable that Scots fly this much less than other UK citizens.

2. Which greenhouse gases should be covered by this Order, and is it appropriate for the same methodology to be applied to each gas?

We would suggest it is reasonable to use CO₂, CH₄ and NO_x – as long as they are combined into a single radiative forcing or global warming potential factor which, for *aviation*, also accounts for aviation induced cloudiness.

We recognise that combining separate factors may make it easier to adjust the overall factor for the design and routes of existing or new aircraft or ships. This might be particularly useful for *shipping*. However, in our view, for *aviation*, the additional accuracy from this would be less than could be gained by adopting a robust passenger-based approach as suggested above.

3. What is the appropriate radiative forcing factor for each greenhouse gas in relation to emissions from international aviation? Please provide reasons for your choice.

There is still some uncertainty here, but in our judgement a factor of 2 (the upper end of the CCC cited estimates by Lee et al² relating to 100 year Global Warming Potential) on CO₂ emissions is appropriate. We do not accept that the effects of aviation induced cloudiness should be excluded, and given the consistent underestimation effects of the other issues raised under Q 1, suggest the use of a factor at the upper end of the figures calculated by Lee et al.

4. Are there any further comments that you would like to make on this subject?

The Scottish Government is to be congratulated on taking the initiative to incorporate figures for international aviation and shipping. We would encourage the Government to continue to work to refine methodologies to best allocate responsibility for emissions from this sector, even after adopting a practical approach for the implementation of its obligations under the Act.

Friends of the Earth Scotland welcomes the opportunity to comment on these proposals. We trust that if the CCC should recommend a significantly different approach than those considered here, the Scottish Government will undertake further consultation.

Contact: Duncan McLaren
Dmclaren@foe-scotland.org.uk 0131 243 2700

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D.S. Lee, G. Pitari, V. Grewe, K. Gierens, J.E. Penner, A. Petzold, M.J. Prather, U. Schumann, A. Bais, T. Berntsen, D. Iachetti, L.L. Lim, R. Sausen Transport impacts on atmosphere and climate: Aviation in Atmospheric Environment (2009) pp 1-57

Respondent Information

Please complete the details below and return along with your response. This will help ensure we handle your response appropriately. Thank you for your help.

1. I am responding on behalf of Friends of the Earth Scotland
3. We are happy for the content of our response to be made publically available
4. We are content for the Scottish Government to contact us again in the future in relation to this response.
5. We are content for you to share this response with the TICC Committee