



Calculating Carbon Costs

1 Introduction

- 1.1 During my re-examination Inspector Clegg asked me to provide a table which set out my view of the errors which Mr Chapman had made in his carbon calculation and the results which should have been returned had he performed the calculation correctly.
- 1.2 To be clear, as stated in my oral evidence I consider that monetization of costs and benefits is not required or appropriate in this case and this note should not be taken as suggesting that it is.

2 Corrections

- 2.1 The three errors which Mr Chapman fell into are:
 - i) He should have identified which emissions are traded as the second step in his calculation (after specifying the counter-factual) whereas he has done it at the end (paragraph 3.3.3 of TAG Unit A5.2 (CD16.11));
 - ii) Non-CO2 effects of aviation can be dealt with qualitatively, or presented as a sensitivity test, not as part of the core assessment (paragraph 3.3.3 of TAG Unit A5.2 (CD16.11)); and
 - iii) He has overestimated the cost of non-CO2 effects of aviation
- 2.2 If those errors were corrected then, as explained in my oral evidence, his table should have returned the figures set out in the table below.
- 2.3 The non-CO2 costs would then be reported as a sensitivity test. Dr Chapman's estimate of these (corrected to maximum of £25.1m) are likely to be an over-estimate because measures to reduce aviation CO2 such as Sustainable Aviation Fuels would also reduce non-CO2 effects, but at zero additional cost.



2.4 I have added cell references to Table 1 of Dr Chapman's Corrigendum, together with the correction of Dr Chapman's figures as follows (my correction figures are in the last row of the table below):

		A	B	C	D	E	F	G	H	I
		Aviation CO2 (tonnes)	Total CO2 (tonnes)	CO2 and Non- CO2 (tonnes CO2)	CO2 value	CO2 and non-CO2 value	CO2 discounted value	CO2 and Non- CO2 discounted value	Proportion of total value paid by industry	Proportion of total value not paid by industry
1	Annual average 2023-2050	24,079	61,032	109,189	£18.6m	£33.7m	£11.7m	£20.5m	£5.4m (26%)	£15.2m (74%)
2	Total 2023-2050	674,200	1,708,900	3,057,300	£538.6m	£978.4m	£339.9m	£595.8m	£155.5m	£440.3m (74%)
Corrected	Annual average 2023-2050				£10m [=18.6 x (1- 5.4/11.7)]	Less than £25.1m [=33.7 – (18.6 x 5.4/11.7)]	£6.3m	Less than £15.1m		