NEW ECONOMICS FOUNDATION

Corrigendum: Submitted by Dr Alex Chapman for LADACAN

Socioeconomic impacts

PINS ref: APP/B0230/V/22/3296455 | Dr Alex Chapman | October 2022

APPLICATION BY LONDON LUTON AIRPORT OPERATIONS LTD

(REF APP/B0230/V/22/3296455)

VARIATION OF CONDITIONS RELATING TO EXTENSIONS AND ALTERATIONS TO THE AIRPORT

LONDON LUTON AIRPORT, AIRPORT WAY, LUTON

1. Corrigendum to Section 4 of the proof of Dr Alex Chapman

1.1. Footnote 1 on page 9 should state CD16.07 not CD16.09.

2. Corrigendum to Section 8 of the proof of Dr Alex Chapman

2.1. Dr Osund-Ireland is right to point out that I made an error in my calculation of the scheme's emissions costs in Section 8 of my original proof of evidence. This error was to apply the non-CO2 multiplier to the emissions arising from non-aviation sources, i.e. ground transportation and building operations. This multiplier should only have been applied to aviation emissions.

2.2. In addition, during the course of rectifying this issue, I have identified one further error. This relates to the application of the discount rate (3.5% as per the Green Book) to my monetised estimates. An incorrect formula was acting to erroneously reduce the total value of discounted emissions. This has been corrected in this submission.

2.3. Dr Osund-Ireland is incorrect in his rebuttal, paragraph 3.1.8, in assuming that I interpolated in a straight line between 2025 and 2050. In fact I interpolated in the more precise manner he describes in para 3.1.9 of his rebuttal, as can be seen in Tables 4 and 5. For transparency on the input data I have used I have presented my full emissions and emissions costs data tables below at Table 4 and Table 5. I note that my corrected CO2 emissions figures now align closely with those of Dr Osund-Ireland.

2.4. In Table 1 below I show the corrected headline emissions and emissions costs. In Table 2 I show the percentage changes versus my previously submitted (and erroneous) data. For completeness, I also show below the revised equivalent number of UK residents' annual emissions these figures equate to (based on World Bank data) in Table 3.

2.5. Following these amends, paragraph 8.29 of my original proof <u>should</u> state:
I estimate that over the period in question (2023-2050) the scheme will result in CO2 and non-CO2 emissions with a value (using BEIS central carbon values) of £980m, which falls to £596m when discounting is applied according to the Green Book methodology. Of this figure, under current policy, £440m would not be paid for by the industry and therefore would fall on wider society.

2.6. I note that the emissions costs associated with the scheme remain considerable.

2.7. I submit my apologies to the inquiry for these errors.

Table 1: Revised scheme emissions and emissions costs estimates, including estimation of the proportion paid by the aviation industry and proportion levied on wider society.

	Aviation CO2 (tonnes)	Total CO2 (tonnes)	CO2 and Non-CO2 (tonnes CO2 equivalent)	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
Annual average 2023-2050	24,079	61,032	109,189	£18.6m	£33.7m	£11.7m	£20.5m	£5.4m (26%)	£15.2m (74%)
Total 2023-2050	674,200	1,708,900	3,057,300	£538.6m	£978.4m	£339.9m	£595.8m	£155.5m (26%)	£440.3m (74%)

Table 2: Changes between revised scheme emissions and emissions costs, and the data presented in my original Proof of Evidence.

	Aviation CO2 (tonnes)	Total CO2 (tonnes)	CO2 and Non-CO2 (tonnes CO2 equivalent)	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
Change in annual average 2023-2050	N/A	0.0%	-40.4%	0.0%	-39.5%	80.2%	5.3%	5.3%	5.3%
Change in total 2023-2050	N/A	0.0%	-40.4%	0.0%	-39.5%	80.2%	5.3%	5.3%	5.3%

Table 3: Greenhouse gas emissions associated with the proposed scheme in annual UK residents' emissions equivalents.

	Equivalent number of UK residents' annual emissions in 2020
Annual average 2023-2050	20,998
Total 2023-2050	587,942

Table 4: Full interpolated emissions estimates, with values adopted from ES4 and proof of Dr Osund-Ireland highlighted in yellow.

Year	Flight CO2 (tonnes)	Total CO2 (tonnes)	Total impact with non-CO2 (tonnes CO2 equivalents assuming a 3x multiplier)
2023	0	0	0
2024	8,600	41,750	58,950
2025	17,200	83,500	117,900
2026	19,700	85,600	125,000
2027	22,200	87,700	132,100
2028	24,700	89,800	139,200
2029	25,750	88,225	139,725
2030	26,800	86,650	140,250
2031	27,850	85,075	140,775
2032	28,900	83,500	141,300
2033	28,788	80,000	137,575
2034	28,675	76,500	133,850
2035	28,563	73,000	130,125
2036	28,450	69,500	126,400
2037	28,338	66,000	122,675
2038	28,225	62,500	118,950
2039	28,113	59,000	115,225
2040	28,000	55,500	111,500
2041	27,370	53,320	108,060
2042	26,740	51,140	104,620
2043	26,110	48,960	101,180
2044	25,480	46,780	97,740
2045	24,850	44,600	94,300
2046	24,220	42,420	90,860
2047	23,590	40,240	87,420
2048	22,960	38,060	83,980
2049	22,330	35,880	80,540
2050	21,700	33,700	77,100
Average 2023-2050	24,079	61,032	109,189
Sum 2023-2050	674,200	1,708,900	3,057,300

Table 5: Scheme emissions costs with and without non-CO2 and discounting applied, using BEIS 2021 carbon values for appraisal.

Year	Total CO2 undiscounted value	Total impact with non-CO2 undiscounted value	CO2 discounted value	Total impact with non-CO2 discounted value
2023	£0	£0	£0	£0
2024	£10,688,000	£15,091,200	£9,952,933	£14,053,303
2025	£21,710,000	£30,654,000	£19,509,303	£27,546,669
2026	£22,598,400	£33,000,000	£19,596,881	£28,616,940
2027	£23,503,600	£35,402,800	£19,668,487	£29,626,079
2028	£24,425,600	£37,862,400	£19,724,642	£30,575,391
2029	£24,350,100	£38,564,100	£18,975,444	£30,052,070
2030	£24,262,000	£39,270,000	£18,245,052	£29,531,085
2031	£24,246,375	£40,120,875	£17,595,136	£29,114,961
2032	£24,131,500	£40,835,700	£16,898,862	£28,596,517
2033	£23,440,000	£40,309,475	£15,840,105	£27,240,030
2034	£22,797,000	£39,887,300	£14,866,388	£26,011,320
2035	£22,046,000	£39,297,750	£13,873,463	£24,729,923
2036	£21,336,500	£38,804,800	£12,957,033	£23,565,021
2037	£20,592,000	£38,274,600	£12,067,248	£22,429,540
2038	£19,750,000	£37,588,200	£11,168,738	£21,256,343
2039	£18,939,000	£36,987,225	£10,335,259	£20,184,411
2040	£18,093,000	£36,349,000	£9,528,010	£19,141,859
2041	£17,648,920	£35,767,860	£8,968,857	£18,176,569
2042	£17,183,040	£35,152,320	£8,426,481	£17,238,531
2043	£16,695,360	£34,502,380	£7,900,769	£16,327,611
2044	£16,185,880	£33,818,040	£7,391,579	£15,443,628
2045	£15,654,600	£33,099,300	£6,898,746	£14,586,363
2046	£15,101,520	£32,346,160	£6,422,087	£13,755,559
2047	£14,566,880	£31,646,040	£5,977,910	£12,986,802
2048	£13,968,020	£30,820,660	£5,531,526	£12,205,402
2049	£13,383,240	£30,041,420	£5,114,448	£11,480,424
2050	£12,738,600	£29,143,800	£4,697,713	£10,747,587
Average 2023-2050	£18,572,683	£33,737,050	£11,719,039	£20,543,569
Sum 2023-2050	£538,607,818	£978,374,455	£339,852,139	£595,763,506

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