pure

The Clean Planet Trust

Flight calculation methodology

The starting point for calculating the emissions from your flight is to establish the distance. You select the appropriate departure and destination airports and the distance between them is then calculated using the Great Circle measurement. This is a straight-line distance between the two airports using standard global longitude and latitude coordinates to measure the shortest flight path. An additional 9% uplift is applied to the distance to take into account indirect routing, circling and other similar real-world factors. The 9% distance inflation is recommended by DECC. The total distance is then multiplied by a CO_2 intensity factor (kg CO_2 per mile flown) to arrive at the total amount of CO_2 emitted. The calculator uses the latest government approved average emissions factors for domestic, short- haul or long-haul as appropriate. There is no provision for different classes of flight.

The emission factors used refer to CO_2 emissions only. There is still some uncertainty over the non CO_2 climate change effects of aviation such as water vapour, contrails, Nox etc. The best scientific evidence currently available recommends applying a radiative forcing multiplier of 1.9 to account for these other emissions. The PURE calculator applies this factor to all flight calculations. Once this final figure has been established we multiply the CO_2 figure by the number of people who are travelling and whether it is a single or return journey.

Mode	Seating Class	Emission Factor $KgCO_2$/passenger km
Domestic flights	Average	0.16313
Short-haul flights	Average	0.09589
Long-haul flights	Average	0.11037

Emission factors are from the latest Defra/DECC GHG Conversion Factors for Company Reporting 2011.

http://www.defra.gov.uk/environment/economy/business-efficiency/reporting/