

## National Carbon Dioxide Footprint.

This footprint shows effective CO<sub>2</sub> output by end consumer industries from the fuel or electricity used. It is derived using the DEFRA and DTI 2003 figures for fuel consumption by industries. The derivation uses the following ideas:-

- \* It does not include the energy industries per se; since energy is never produced for its own sake.
- \* Rather the energy used by the energy industries in producing the end user fuel and energy is used to scale up the CO<sub>2</sub> output by appropriate amounts.
- \* The actual CO<sub>2</sub> produced by Flying is scaled up by a factor of 3 since the effect of flying is about 3x as bad as the actual CO<sub>2</sub> produced.

Because of the difficulties of getting accurate figures and because of rounding etc the figures do not tie up completely with those in our analysis, nevertheless differences are quite small.

For anyone who is interested the industry data is given in "Where Energy is Consumed". Skip this unless you are really committed!

		CO <sub>2</sub> Mt	% of national total.
Home	Total	133.8	21.7%
Home heating		94.6	15.3
Domestic electricity		39.2	6.3
Travel	Total	248.5	40.2%
Private cars		94.6	15.3
Commercial vehicles		46.2	7.5
Trains		5.2	0.8
Air Travel & Transport		35.7	(actual CO <sub>2</sub> 6% of smaller total)
Air Travel & Transport		98.2	15.9 (effective emissions)
Other		4.3	0.7
<b>Stuff.</b>	Total	176.6	28.5%
Basic steel		28.5	4.6
Steel		4.3	0.7
Non-ferrous metals		4.0	0.6
Mineral products		7.1	1.1
Chemicals		59.9	9.7 (includes plastics)
Mechanical Engineer		6.4	
Electrical engineer		3.8	1.7 (with mechanical)
Vehicles assembly		5.3	0.9
Food processing		11.9	1.9
Paper printing		9.4	1.5
Agriculture		3.9	0.6
Construction		2.8	0.5
Other industry		29.3	4.7
<b>Other.</b>	Total	71.4	11.6 %
Commerce		40.6	6.6
Public Admin (gov)		23.4	3.8
Unclassified at all		7.4	1.2

TOTAL	actual	556	(more or less spot on!)
	Effective	618	(includes the 3x factor for flying)

It can be seen that the major sources of consumer driven CO<sub>2</sub> output are:-

Our homes	21%	
Travel not air	24%	
Air travel + freight	16%	(effective CO <sub>2</sub> equivalent)
Production of stuff	28%	(This includes public commodities as well as Consumer goods).
Services (+ unclassified)	12%	

#### Notes.

1. Many industries particularly:- vehicle manufacture, construction, and electrical and mechanical engineering use ferrous and non-ferrous metals and the figures for these form part of the CO<sub>2</sub> footprint for these activities.
2. Because we have arranged for so many of our goods and services to be produced and supplied from overseas our "true" footprint is higher than that given by the figures. Probably at least 30%, perhaps as much as 50% more. This will add to the figures for "Stuff".
3. Domestic electricity consumption averages about 10 kwh per day per home ignoring off-peak heating. If off-peak heating is included the overall average rises to about 13 kwh.  
N.B. This does not mean that the average electricity use for off-peak heating is only 3 kwh. (Since only a small proportion of homes use off-peak heating).
4. Aircraft produce emissions of about 6% of our raw CO<sub>2</sub> emissions. Much of this is produced by air freight. However aircraft emissions have a much larger global warming effect than those produced at ground level. The factor is about 3x's. So the effect of aircraft emissions scales to about 16% of our modified national total, this value is used above

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