

ANNEX A



Carbon Calculations

Scenario A - 200 staff work from office in the UK

Travel	Percentage of employees travelling by mode*	Total No. of employees	Average No. of Miles travelled per round trip (miles)*	Total No. of Miles travelled by all employees (miles)	Total No. of trips made per year per employee (travel days)***	Emissions per km (2019 BEIS emissions factors) kgCO ₂ e per mile	Carbon emissions per day (all employees) kgCO ₂ ****	Total Annual Carbon emissions per year (all employees) (kgCO ₂ /yr)	Total Annual Carbon emission per year per employee (kgCO ₂ /yr)
Car*	65%	130	19.5	2539	231	0.27901	708.3	163622.3	818.11
Bus**	9%	17	10.6	184		0.16851	31.1	7176.1	35.88
Rail***	11%	21	34.2	718		0.06622	47.5	10981.2	54.91
Walking	12%	23	1.8	42		0	0.0	0.0	0.00
Bicycle	4%	8	6.6	53		0	0.0	0.0	0.00
Office Environment	Treated floor area (m ²)*****	Energy (kWh/m ²)	Total Energy (kWh/year)	Total Carbon (kgCO ₂ /yr)	Total Carbon per employee (kgCO ₂ /yr)				
Total Gas	1800	97	174600	32100	160.5				
Total Electricity	1800	128	230400	72802	364.0				

TOTALS FOR SCENARIO A

Total Annual Carbon Emissions per employee (kgCO ₂ /yr)	Total Annual Carbon Emissions all employees (kgCO ₂ /yr)	Total Annual Carbon Emissions for Average office per Employee (kgCO ₂ /yr)
Travel by Car	286681.5	1433
Travel by Bus		
Travel by Rail		
Walk to work		
Cycle to work		

* National Travel survey NTS0412 26 July 2018
** National Statistics, 2006 and Transwatch UK, 2004
*** Total No. of trips made per year per employee 231 (This figure is calculated based on no of weekdays in a year, taking into account employee annual leave)
**** Carbon conversion factor for petrol = 2.30kgCO ₂ /litre
*****Total Floor Space 2000m ² (10m ² per employee), assumed treated area 90% = 1800m ² , total floor area Assumed best practice

Scenario B - 200 staff work from home in the UK, and heat just their home office - not the whole house

Working Environment	Area of home office space (m ²)*	Energy (kWh/yr)****	Annual Carbon (kgCO ₂ /yr)
Gas**	20	2000	367.70
Electric**		500	157.99
PC***		288	91.00
Small power (printers etc)*****		9.6	3.03

TOTALS FOR SCENARIO B

Total Annual Carbon Emissions per employee (kgCO ₂ /yr)	Total Annual Carbon Emissions all employees (kgCO ₂ /yr)
619.7	123945

* Figures based on 80m ² flat however this is reduced to 25m ² to compensate for area utilised during the working day
**Gas and Electricity figure include heating and lighting (Gas figures based on 80 kWh/m ² and Electric figures based on 25 kWh/m ²)
***PC Energy consumption 150W
****Hours of operation 1920 hrs/yr (5 days per week, 10 hour days, 48 weeks (Taking account of employee annual leave and public holidays) and a diversity factor of 0.8)
*****Allow 5W/m ² for small