

Julie's Bicycle

SUSTAINING CREATIVITY

This is a list of the emission conversion factors used on the Creative IGTools for the purposes of calculating an organisation's carbon footprint.

Last updated: 22nd August 2014

The source for the emission conversion factors unless otherwise stated is:

2014 Guidelines for Defra/DECC's GHG Conversion Factors for Company Reporting. (Referred to as 'DEFRA')

Type	Name	2014 Factor	Units	Source:	Explanation
Energy (transport and operational)	Diesel (litres)	2.60240	kg CO2e per litre	DEFRA	
	Petrol (litres)	2.19140	kg CO2e per litre	DEFRA	
	Biodiesel (litres)	0	kg CO2e per litre	2012 JB Factors	Julie's Bicycle zero rate all waste vegetable oil and UK grown biofuels, in recognition of the short timescale of the carbon cycle and that life cycle emissions are not included in fossil fuel conversion factors
	Renewable (kWh)	0	kg CO2e per kWh	2012 JB Factors	Julie's Bicycle zero rate all renewable electricity sources, in recognition of exclusion of life cycle emissions from fossil fuel conversion factors
	LPG (litres)	1.50225	kg CO2e per litre	DEFRA	
	Grid electricity (kWh)	0.53748	kg CO2e per kWh	DEFRA	
	Mains Gas (kWh)	0.18497	kg CO2e per kWh	DEFRA	Gross CV
	Oil (litres)	2.53797	kg CO2e per litre	DEFRA	Burning oil (kerosene) is most common oil for domestic heating.
Waste	Landfill (tonnes)	289.836	net kg CO2e per tonne	DEFRA	Waste is assumed to be closest in character to mixed municipal waste. It is assumed waste is going to landfill rather than EfW (88% of UK waste, see Table 9d, note 4.)
	Recycling (tonnes)	0	net kg CO2e per tonne	N/A	Recycling factors from DEFRA are not applied as data splitting recycling into fractions is generally unavailable and factors vary considerably.
	Compost (tonnes)	0	net kg CO2e per tonne	N/A	Composting factors from DEFRA are not applied.
Water	Water supply (m3)	0.34410	kg CO2e per cubic metre	DEFRA	
	Water treatment (m3)	0.70850	kg CO2e per cubic metre	DEFRA	
Transport	Dedicated coach (veh km)	0.67440	kg CO2 per veh km	National Atmospheric Emissions Inventory Vehicle Speed, Emission Factors Version 02/3	Assume bus, average speed 96km per hour; Euro II. More accurate than Defra conversion factors considering how full dedicated coaches are, compared to average occupancy of UK buses.
	Average petrol car (km)	0.19388	kg CO2e per km	DEFRA	Assume average petrol car as worst case (not diesel, not small, not motorbike)
	Average diesel car (km)	0.18546	kg CO2e per veh km	DEFRA	
	Average LPG car (km)	0.20881	kg CO2e per veh km	DEFRA	
	Average petrol hybrid car (km)	0.13443	kg CO2e per veh km	DEFRA	
	London bus (km)	0.08142	kg CO2e per veh km	DEFRA	London bus to take account of bus being more full than national local average due to event
	Local bus (not London) (km)	0.10946	kg CO2e per veh km	DEFRA	
	National rail (pkm)	0.04738	kg CO2e per passenger km	DEFRA	
	Eurostar	0.01212	kg CO2e per passenger km	DEFRA	
	Regular taxi	0.24857	kg CO2e per veh km	DEFRA	
	Tube (km)	0.06312	kg CO2e per passenger km	DEFRA	
	Domestic flight	0.15504	kg CO2e per passenger km	DEFRA	
	Shorthaul average	0.08790	kg CO2e per passenger km	DEFRA	
	Shorthaul economy	0.08373	kg CO2e per passenger km	DEFRA	
	Shorthaul business	0.12560	kg CO2e per passenger km	DEFRA	
	Longhaul average	0.11116	kg CO2e per passenger km	DEFRA	
	Longhaul economy	0.07960	kg CO2e per passenger km	DEFRA	
	Longhaul premium economy	0.12735	kg CO2e per passenger km	DEFRA	
	Longhaul business	0.23082	kg CO2e per passenger km	DEFRA	
	Longhaul first class	0.31837	kg CO2e per passenger km	DEFRA	
	Ferry (pkm) (average all passengers)	0.11608	kg CO2e per passenger km	DEFRA	Average for all passengers (foot and car)
	Average petrol motorbike	0.11955	kg CO2 per veh km	DEFRA	
	Buggies	0.14356	kg CO2 per km	DEFRA	Unknown Fuel, Minicar
	Hotel night	32.6300	kg CO2 per room per night	WBSCD 2004 and CIBSE 2004	WBSCD 2004 and CIBSE 2004
	Diesel minibus (vkm)	0.25092	kg CO2e per veh km	DEFRA	Diesel van up to 3.5t
	LPG minibus (vkm)	0.26406	kg CO2e per veh km	DEFRA	Van up to 3.5t
	MPV petrol (vkm)	0.21101	kg CO2e per veh km	DEFRA	
MPV diesel (vkm)	0.19450	kg CO2e per veh km	DEFRA		
Light diesel rigid	0.59051	kg CO2e per veh km	DEFRA	3.5-7.5 t UK average load	
Medium diesel rigid	0.72678	kg CO2e per veh km	DEFRA	7.5-17t UK average load	
Heavy diesel rigid	0.97317	kg CO2e per veh km	DEFRA	>17t UK average load	
Light diesel articulated	0.88929	kg CO2e per veh km	DEFRA	3.5-33t UK average load	
Heavy diesel articulated	0.99460	kg CO2e per veh km	DEFRA	>33t UK average load	
Domestic air freight	2.53199	kg CO2e per tonne.km	DEFRA		
Shorthaul air freight	1.10805	kg CO2e per tonne.km	DEFRA		
Longhaul air freight	0.62754	kg CO2e per tonne.km	DEFRA		
Ferry freight (tkm)	0.38742	kg CO2e per tonne.km	DEFRA	Large RoPax Ferry	
Container average (tkm)	0.01605	kg CO2e per tonne.km	DEFRA		
Rail freight (tkm)	0.02831	kg CO2e per tonne.km	DEFRA		
		2.85			
	Small jet (vkm)	7.03	kg CO2 per veh km	Personal correspondence, Dr. Graham Sinden, Carbon Trust	
	Large jet (vkm)		kg CO2 per veh km	Personal correspondence, Dr. Graham Sinden, Carbon Trust	

Assumptions	Units	Source	Explanation
	50 people per coach		Assumed occupancy of dedicated coaches
	2 people per car for venues		
	2.6 people per car for outdoor events		
	202 km average return distance	Census 2001	Average commute distance
	463 domestic flight distance km	DEFRA	
	1108 shorthaul flight distance km	DEFRA	
	6482 longhaul flight distance km	DEFRA	
	1.60934 miles into km		
	km average UK train trip (London to Birmingham)	timeanddate.com distance calculator	
	166 km average shorthaul train trip (London to Berlin)	timeanddate.com distance calculator	
	929		
	CJ2 assume is small jet (6 passengers)		
	Metro 3 assume is large jet (19 passengers)		