

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

Last updated: August 2015

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

2015 Guidelines for Defra/DECC's GHG Conversion Factors for Company Reporting. (Referred to as 'DEFRA')

Type	Name	2015 Factor	Units	Source:	Explanation
Energy (transport and operational)	Diesel (litres)	2.67614	kg CO2e per litre	DEFRA	100% mineral diesel
	Petrol (litres)	2.29968	kg CO2e per litre	DEFRA	100% mineral
	Biodiesel (litres)	0.01976	kg CO2e per litre	2015 JB Factors	Using DEFRA conversion factor from 2015 onwards.
	Renewable (kWh)	0	kg CO2e per kWh	2015 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)	1.50938	kg CO2e per litre	DEFRA	
	Grid electricity (kWh)	0.50035	kg CO2e per kWh	DEFRA	Conversion factor inclusive of transmission and distribution (T&D) losses.
	Mains Gas (kWh)	0.18445	kg CO2e per kWh	DEFRA	Gross CV
	Oil (litres)	2.53215	kg CO2e per litre	DEFRA	Burning oil (kerosene) is most common oil for domestic heating.
Waste	Landfill (tonnes)	459.000	net kg CO2e per tonne	DEFRA	Waste is assumed to be closest in character to mixed municipal waste. The 2015 landfill conversion factor has significantly increased due to changes in the methane (CH4) emission factor. This is the result of changes in the GHG inventory methodology and updated Global Warming Potential (GWP) factors
	Recycling (tonnes)	21	net kg CO2e per tonne	DEFRA	Using DEFRA conversion factor from 2015 onwards.
	Compost (tonnes)	6	net kg CO2e per tonne	DEFRA	Using DEFRA conversion factor from 2015 onwards.
Water	Water supply (m3)	0.34400	kg CO2e per cubic metre	DEFRA	
	Water treatment (m3)	0.70800	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)	0.19126	kg CO2e per km	DEFRA	Assume average petrol car as worst case (not diesel, not small, not motorbike)
	Average diesel car (km)	0.18232	kg CO2e per veh km	DEFRA	
	Average LPG car (km)	0.20785	kg CO2e per veh km	DEFRA	
	Average petrol hybrid car (km)	0.12875	kg CO2e per veh km	DEFRA	
	London bus (km)	0.07917	kg CO2e per passenger km	DEFRA	London bus to take account of bus being more full than national local average due to event
	Local bus (not London) (km)	0.10883	kg CO2e per passenger km	DEFRA	
	Average local bus	0.10033	kg CO2e per passenger km	DEFRA	
	National rail (pkm)	0.04506	kg CO2e per passenger km	DEFRA	
	Eurostar	0.01205	kg CO2e per passenger km	DEFRA	Referred to as 'international rail' in conversion factors
	Regular taxi	0.24473	kg CO2e per veh km	DEFRA	
	Black cab	0.32809	kg CO2e per veh km	DEFRA	
	Tube (km)	0.05631	kg CO2e per passenger km	DEFRA	
	Domestic flight	0.29795	kg CO2e per passenger km	DEFRA	
Shorthaul average	0.16972	kg CO2e per passenger km	DEFRA		
Shorthaul economy	0.16634	kg CO2e per passenger km	DEFRA		
Shorthaul business	0.24954	kg CO2e per passenger km	DEFRA		
Longhaul average	0.19813	kg CO2e per passenger km	DEFRA		
Longhaul economy	0.15175	kg CO2e per passenger km	DEFRA		
Longhaul premium economy	0.24283	kg CO2e per passenger km	DEFRA		
Longhaul business	0.44010	kg CO2e per passenger km	DEFRA		
Longhaul first class	0.60703	kg CO2e per passenger km	DEFRA		
Ferry (pkm) (average all passengers)	0.11609	kg CO2e per passenger km	DEFRA	Average for all passengers (foot and car)	
Average motorbike	0.11966	kg CO2 per veh km	DEFRA		
Buggies	0.14284	kg CO2 per km	DEFRA	Unknown Fuel, Minicar	
Hotel night	32.63	kg CO2 per room per night	WBCSD 2004 and CIBSE 2004	WBCSD 2004 and CIBSE 2004	
Diesel minibus (vkm)	0.24999	kg CO2e per veh km	DEFRA	Diesel van up to 3.5t	
Petrol van (vkm)	0.20994	kg CO2e per veh km	DEFRA	Van up to 3.5t	
LPG minibus (vkm)	0.26306	kg CO2e per veh km	DEFRA	Van up to 3.5t	
MPV petrol (vkm)	0.21037	kg CO2e per veh km	DEFRA		
MPV diesel (vkm)	0.19479	kg CO2e per veh km	DEFRA		
Light diesel rigid	0.56530	kg CO2e per veh km	DEFRA	3.5-7.5 t UK average load	
Medium diesel rigid	0.69178	kg CO2e per veh km	DEFRA	7.5-17t UK average load	
Heavy diesel rigid	0.99874	kg CO2e per veh km	DEFRA	>17t UK average load	
Light diesel articulated	0.84167	kg CO2e per veh km	DEFRA	3.5-33t UK average load	
Heavy diesel articulated	0.98376	kg CO2e per veh km	DEFRA	>33t UK average load	
Domestic air freight	5.45119	kg CO2e per tonne.km	DEFRA	Inclusive of Radiative Forcing (RF) i.e. non-CO2 climate change effects of aviation (water vapour, contrails, NOx etc.)	
Shorthaul air freight	2.31277	kg CO2e per tonne.km	DEFRA	Inclusive of Radiative Forcing (RF) i.e. non-CO2 climate change effects of aviation (water vapour, contrails, NOx etc.)	
Longhaul air freight	1.27944	kg CO2e per tonne.km	DEFRA	Inclusive of Radiative Forcing (RF) i.e. non-CO2 climate change effects of aviation (water vapour, contrails, NOx etc.)	
Ferry freight (tkm)	0.38744	kg CO2e per tonne.km	DEFRA	Large RoPax Ferry	
Container average (tkm)	0.01605	kg CO2e per tonne.km	DEFRA		
Rail freight (tkm)	0.02601	kg CO2e per tonne.km	DEFRA		
		2.85			
	Small jet (vkm)		kg CO2 per veh km	Personal correspondence, Dr. Graham Sinden, Carbon Trust	
		7.03			
	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		
	20.2 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		
	166 km average UK train trip (London to Birmingham)	timeanddate.com distance calculator	
	929 km average shorthaul train trip (London to Berlin)	timeanddate.com distance calculator	
	CJ2 assume is small jet (6 passengers)		
	Metro 3 assume is large jet (19 passengers)		