

Julie's Bicycle

CREATIVE • CLIMATE • ACTION

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

Last updated: August 2019

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

The Department for Business, Energy and Industrial Strategy's 'Greenhouse gas reporting: conversion factors 2019' (referred to as 'BEIS').

Type	Name	2019 Factor	Unit	Source	Explanation
Energy	Electricity	0.2773	kg CO2e per kWh	BEIS	Conversion factor inclusive of transmission and distribution (T&D) losses.
	Gas	0.18385	kg CO2e per kWh	BEIS	Gross CV.
	Onsite renewables	0	kg CO2e per kWh	2019 JB Factors	Julie's Bicycle zero rate all renewable electricity sources, in recognition of exclusion of life cycle emissions from fossil fuel conversion factors.
Fuel	Oil	2.54042	kg CO2e per litre	BEIS	Burning oil (kerosene) is most common oil for domestic heating.
	Diesel	2.68697	kg CO2e per litre	BEIS	100% mineral diesel
	Petrol	2.31495	kg CO2e per litre	BEIS	100% mineral petrol
	LPG	1.5226	kg CO2e per litre	BEIS	
	Biodiesel	0.03572	kg CO2e per litre	BEIS	
Waste	Landfill	586.514	net kg CO2e per tonne	BEIS	Waste is assumed to be closest in character to mixed municipal waste.
	Recycled waste	21.354	net kg CO2e per tonne	BEIS	
	Energy from waste	21.354	net kg CO2e per tonne	BEIS	

	Composted waste	10.204	net kg CO2e per tonne	BEIS	
Water	Water use	0.344	kg CO2e per cubic metre	BEIS	
	Waste water	0.708	kg CO2e per cubic metre	BEIS	
Travel (road)	Average petrol car	0.28991	kg CO2 per veh km	BEIS	Assume average petrol car as worst case (not diesel, not small, not motorbike)
	Average diesel car	0.17336	kg CO2 per veh km	BEIS	
	Average LPG car	0.19901	kg CO2 per veh km	BEIS	
	Average petrol hybrid car	0.11473	kg CO2 per veh km	BEIS	
	MPV petrol	0.1994	kg CO2 per veh km	BEIS	
	MPV diesel	0.18101	kg CO2 per veh km	BEIS	
	Average petrol motorbike	0.11551	kg CO2 per veh km	BEIS	
	Regular taxi	0.21024	kg CO2 per veh km	BEIS	
	Black cab	0.31764	kg CO2 per veh km	BEIS	
	London bus	0.08208	kg CO2e per passenger km	BEIS	London bus to take account of bus being more full than national local average due to event
	Local bus (not London)	0.15018	kg CO2e per passenger km	BEIS	
	Average local bus	0.10471	kg CO2e per passenger km	BEIS	
	Diesel van/minibus	0.25213	kg CO2e per veh km	BEIS	Diesel van up to 3.5t
	Petrol van/minibus	0.23645	kg CO2e per veh km	BEIS	Van up to 3.5t
	LPG van/minibus	0.27244	kg CO2e per veh km	BEIS	Van up to 3.5t
	Dedicated coach	0.6744	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.
	Buggies	0.13958	kg CO2 per km	BEIS	Unknown Fuel, Minicar
Travel (rail)	National rail	0.04115	kg CO2e per passenger km	BEIS	

	Eurostar	0.00597	kg CO2e per passenger km	BEIS	Referred to as 'International rail' in conversion factors
	Tube	0.03084	kg CO2e per passenger km	BEIS	
Travel (air)	Domestic flight	0.25493	kg CO2e per passenger km	BEIS	
	Short haul average	0.15832	kg CO2e per passenger km	BEIS	
	Short haul economy	0.15573	kg CO2e per passenger km	BEIS	
	Short haul business	0.2336	kg CO2e per passenger km	BEIS	
	Long haul average	0.19562	kg CO2e per passenger km	BEIS	
	Long haul economy	0.14981	kg CO2e per passenger km	BEIS	
	Long haul premium economy	0.2397	kg CO2e per passenger km	BEIS	
	Long haul business	0.43446	kg CO2e per passenger km	BEIS	
	Long haul first class	0.59925	kg CO2e per passenger km	BEIS	
	Small jet	2.85	kg CO2 per veh km	Personal correspondence , Dr. Graham Sinden, Carbon Trust	
	Large jet	7.03	kg CO2 per veh km	Personal correspondence , Dr. Graham Sinden, Carbon Trust	
Travel (sea)	Ferry	0.01874	kg CO2e per passenger km	BEIS	Average for all passengers (foot and car)
Travel Accommodation	Hotel night	17.4	kg CO2 per room per night	BEIS	UK room per night
Travel (freight)	Light diesel rigid	0.49215	kg CO2e per veh km	BEIS	3.5-7.5 t UK average load
	Medium diesel rigid	0.60103	kg CO2e per veh km	BEIS	7.5-17t UK average load
	Heavy diesel rigid	0.95556	kg CO2e per veh km	BEIS	>17t UK average load
	Light diesel articulated	0.78531	kg CO2e per veh km	BEIS	3.5-33t UK average load
	Heavy diesel articulated	0.93505	kg CO2e per veh km	BEIS	>33t UK average load
	Rail freight	0.03333	kg CO2e per tonne.km	BEIS	

	Ferry freight	0.37667	kg CO ₂ e per tonne.km	BEIS	Large RoPax Ferry
	Container ship	0.01614	kg CO ₂ e per tonne.km	BEIS	
	Domestic air freight	4.99674	kg CO ₂ e per tonne.km	BEIS	Inclusive of Radiative Forcing (RF) i.e. nonCO ₂ climate change effects of aviation (water vapour, contrails, NO _x etc)
	Short haul air freight	2.37968	kg CO ₂ e per tonne.km	BEIS	Inclusive of Radiative Forcing (RF) i.e. nonCO ₂ climate change effects of aviation (water vapour, contrails, NO _x etc)
	Long haul air freight	1.13174	kg CO ₂ e per tonne.km	BEIS	Inclusive of Radiative Forcing (RF) i.e. nonCO ₂ climate change effects of aviation (water vapour, contrails, NO _x etc)