



Tools & Resources for Low Carbon Living

**Emission Factors Ready Reckoner,
India, March 2012**

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no2co2 National Emission Factor Ready-Reckoner - India
Version: March 2012

Activity Group	Activity Common Name	Weight Based x1	Units	Volume Based x1	Units	Cost Based x1	Units	Distance (Vehicle) Based x1	Units	Distance (Passenger) Based x1	Units	Distance (Passenger) Based x0	Units	Energy (kWh) Based x1	Units	Journey Based x1	Units	piece based x1	Units
Energy - Indirect	Electricity					0.290	kg CO2e/Rs							1.04	kg CO2/kWh				
Energy - T&D Losses	Electricity T&D Losses					0.081	kg CO2e/Rs							0.29	kg CO2/kWh				
Water & Wastewater	Water			0.002	kg CO2e/liter														
Energy - Direct	Petrol	3.08	kg CO2e/kg																
Energy - Direct	Diesel	3.20	kg CO2e/kg	2.66	kg CO2e/liter														
Energy - Direct	Coal	1.89	kg CO2e/kg																
Energy - Direct	Wood	1.78	kg CO2e/kg	0.89	kg CO2e/liter														
Mobility	Scooter/Motorbike	3.08	kg CO2e/kg	2.30	kg CO2e/liter	0.042	kg CO2e/Rs	0.04	kg CO2e/vehicle-km										
Mobility	Car - AC - Diesel	3.20	kg CO2e/kg	2.66	kg CO2e/liter	0.068	kg CO2e/Rs	0.26	kg CO2e/vehicle-km										
Mobility	Car - Non-AC - Diesel	3.20	kg CO2e/kg	2.66	kg CO2e/liter	0.068	kg CO2e/Rs	0.21	kg CO2e/vehicle-km										
Mobility	Car - AC - Petrol	3.08	kg CO2e/kg	2.30	kg CO2e/liter	0.042	kg CO2e/Rs	0.29	kg CO2e/vehicle-km										
Mobility	Car - Non-AC - Petrol	3.08	kg CO2e/kg	2.30	kg CO2e/liter	0.042	kg CO2e/Rs	0.23	kg CO2e/vehicle-km										
Mobility	Autorickshaw					0.010	kg CO2e/Rs	0.08	kg CO2e/vehicle-km										
Mobility	AC Taxi					0.015	kg CO2e/Rs	0.25	kg CO2e/vehicle-km										
Mobility	Non AC Taxi					0.018	kg CO2e/Rs	0.19	kg CO2e/vehicle-km										
Mobility	Local AC Bus					0.021	kg CO2e/Rs			0.030									
Mobility	Local Non-AC Bus					0.031	kg CO2e/Rs			0.016									
Mobility	School/Office Non-AC Bus							0.76	kg CO2e/vehicle-km	0.010									
Mobility	School/Office AC Bus							0.99	kg CO2e/vehicle-km	0.020									
Mobility	Long Distance AC Bus							0.82	kg CO2e/vehicle-km	0.011									
Mobility	Long Distance Non-AC Bus							1.06	kg CO2e/vehicle-km	0.022									
Mobility	Domestic Short Haul Flight									0.091	34.39					113.71	kgCO2e/pass-flight		
Mobility	Domestic Medium Haul Flight									0.091	34.39					153.38	kgCO2e/pass-flight		
Mobility	Domestic Long Haul Flight									0.091	34.39					192.64	kgCO2e/pass-flight		
Mobility	International Short Haul Flight									0.062	19.19					238.23	kgCO2e/pass-flight		
Mobility	International Medium Haul Flight									0.069	-14.08					470.45	kgCO2e/pass-flight		
Mobility	International Long Haul Flight									0.084	-83.89					803.75	kgCO2e/pass-flight		
Services	5 Star Hotel																	204.32	kgCO2e/overnight stay
Services	4 Star Hotel																	101.79	kgCO2e/overnight stay
Services	3 Star Hotel																	60.56	kgCO2e/overnight stay
Services	2 Star Hotel																	27.50	kgCO2e/overnight stay
Food & Beverage	Beer			0.53	kg CO2e/liter														
Food & Beverage	Bulk Bottled Water			0.01	kg CO2e/liter														
Food & Beverage	Retail Bottled Water			0.13	kg CO2e/liter														
Food & Beverage	Milk			0.83	kg CO2e/liter														
Food & Beverage	Beef	8.61	kg CO2e/kg																
Food & Beverage	Avg. Meat	9.66	kg CO2e/kg																
Food & Beverage	Mutton	12.69	kg CO2e/kg																
Food & Beverage	Pork	5.53	kg CO2e/kg																
Food & Beverage	Rice	0.92	kg CO2e/kg																
Food & Beverage	Fish & Seafood	3.76	kg CO2e/kg																
Waste	Mixed Solid Waste - Landfilled	0.55	kg CO2e/kg																
Waste	Biodegradable Waste - Landfilled	0.60	kg CO2e/kg																
Waste	Biodegradable Waste - Composted	0.27	kg CO2e/kg																
Waste	Non-Biodegradable Waste - Landf	1.34	kg CO2e/kg																
Materials	Fertilizer	8.67	kg CO2e/kg																
Materials	Urea	6.40	kg CO2e/kg																
Materials	Pesticide	12.03	kg CO2e/kg																
Materials	Detergent	2.70	kg CO2e/kg																
Materials	Printer Paper - Non-Recycled	2.58	kg CO2e/kg															0.0125	kg CO2e/sheet
Materials	Printer Paper - Partially-Recycled	2.10	kg CO2e/kg															0.0102	kg CO2e/sheet
Materials	Printer Paper - Fully-Recycled	1.63	kg CO2e/kg															0.0079	kg CO2e/sheet
Materials	Cardboard - Non-Recycled	2.62	kg CO2e/kg																
Materials	Cardboard - Partially-Recycled	2.65	kg CO2e/kg																
Materials	Cardboard - Fully-Recycled	2.68	kg CO2e/kg																
Materials	Plastic	2.53	kg CO2e/kg																
Materials	Glass	3.09	kg CO2e/kg																
Materials	Brick	0.22	kg CO2e/kg																
Materials	Concrete	0.20	kg CO2e/kg																
Materials	Cement	0.86	kg CO2e/kg																

Disclaimer:

The emission factors presented here are compiled through multiple approaches including primary research of industry data, technical literature review, and emission factors suggested through the IPCC Tier1 Emission Factor Databases. These factors do not include the entire product life-cycle and largely include only direct emissions from fuel combustion and electricity consumption. These factors are for indicative purposes only, have a finite degree of uncertainty and are expected to vary with time. These emission factors shall only be used for educational and fair-use purposes and are not recommended for commercial GHG inventorying projects.

