



Annexure 1: Common Emission Factors

SCOPE 1	Units	Emission Factor	Unit	Source
Fuel Combustion				
Diesel (HFO)	litres	2.6855	kgCO ₂ /litres	GHG Protocol
Petrol	litres	2.2800	kgCO ₂ /litres	GHG Protocol
Liquid Petroleum Gas	litres	1.6130	kgCO ₂ /litres	GHG Protocol
Bituminous coal	kg	2.4532	kgCO ₂ /kg	GHG Protocol
Owned Transport				
Road Petrol Use	litres	2.2715	kgCO ₂ /litres	GHG Protocol
Road Diesel Use	litres	2.6763	kgCO ₂ /litres	GHG Protocol
Chemical Production				
Ammonia	kg	1.5000	kgCO ₂ /kg	IPCC
Titanium Dioxide Production	kg	1.4300	kgCO ₂ /kg	IPCC
Polyethylene Production	kg	2.5000	kgCO ₂ /kg	IPCC
SCOPE 2				
Purchased Energy				
Eskom Electricity (2007)	kWh	0.8689996	kgCO ₂ /kWh	GHG Protocol
Purchased Steam	MBtu	0.2486	kgCO ₂ /MBtu	GHG Protocol
SCOPE 3				
Freight				
Rail	tonne/km	0.021	kgCO ₂ /tonne/km	GHG Protocol
Ship	tonne/km	0.01	kgCO ₂ /tonne/km	GHG Protocol
Flight Domestic	tonne/km	2.071	kgCO ₂ /tonne/km	GHG Protocol
Flight Long	tonne/km	0.6649	kgCO ₂ /tonne/km	GHG Protocol
Staff Commuting				
Average petrol car	km	0.2070	kgCO ₂ /km	GHG Protocol
Average diesel car	km	0.1979	kgCO ₂ /km	GHG Protocol
Average motorbike	km	0.1059	kgCO ₂ /km	GHG Protocol
Taxi (mini van) per pax	km/pax	0.1073	kgCO ₂ /km/pax	GHG Protocol
Average bus per pax	km/pax	0.0290	kgCO ₂ /km/pax	GHG Protocol
Staff Flights				
Domestic	km/pax	0.1911	kgCO ₂ /km/pax	GHG Protocol
International Economy	km/pax	0.0880	kgCO ₂ /km/pax	GHG Protocol
International Business	km/pax	0.2551	kgCO ₂ /km/pax	GHG Protocol