

02 WHO IS EMITTING?

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Current global emissions

As per analysis of the Washington DC-based global research organisation World Resources Institute (WRI) for 2011, China, comprising almost 20 per cent of the world's population, was the world's leading emitter of carbon dioxide (CO₂), with 28 per cent emissions. The United States, with less than 5 per cent of world's population, was the second largest emitter of CO₂, with almost 16.5 per cent of the global share. India, with around 17 per cent of global population, accounted for less than 6 per cent emissions.

Table 1: CO₂ emissions in Africa

Country	Emissions in MT CO ₂ (excluding land-use change and forestry)
South Africa	374.290
Egypt	211.520
Nigeria	83.920
Kenya	11.640
Ghana	10.820
Congo (Dem. Rep.)	3.27
Madagascar	1.84
Africa (total)	1040.47
Africa (per capita)	1.03 t CO ₂

Source: WRI, 2014

Table 2: Share of global CO₂ emissions and population, 2011

Country	Total CO ₂ excluding land-use change and forestry in 2011 (MT CO ₂)	Share of global CO ₂ emissions in 2011 (%)	Share of world population in 2011 (%)
China	9034.97	28	19.29
US	5333.06	16.52	4.47
European Union (28 member states)	3667.37	11.36	7.22
India	1860.92	5.77	17.53
Russian Federation	1712.15	5.31	2.05
Rest of the world	1009.93	3.12	72.15
Japan	1211.60	3.75	1.83
Germany	765.98	2.37	1.17
Korea (South)	611.70	1.9	0.71
Iran	579.19	1.8	0.46
Canada	538.84	1.67	0.49
Saudi Arabia	481.40	1.5	0.4
Mexico	458.06	1.41	1.71
United Kingdom	447.96	1.39	0.91
Indonesia	447.18	1.39	3.5
Brazil	443.16	1.37	2.83
Italy	410.38	1.27	0.87
Australia	401.75	1.24	0.32
South Africa	374.29	1.16	0.74
France	338.16	1.05	0.94
Turkey	317.33	0.98	1.05
Poland	309.12	0.96	0.55
Ukraine	290.60	0.9	0.66
Spain	280.23	0.87	0.67
Taiwan	273.06	0.85	0.33
Thailand	261.47	0.81	0.96
Kazakhstan	237.99	0.73	0.24
Netherlands	175.88	0.54	0.24

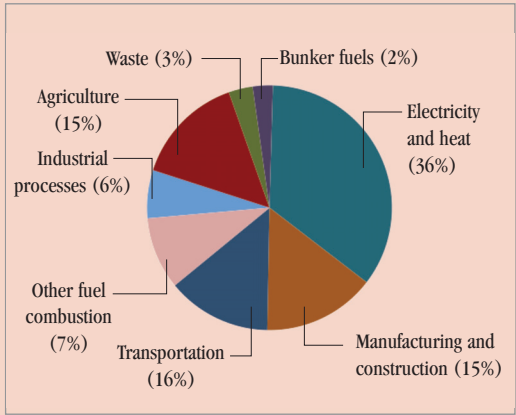
Source: Climate Analysis Indicators Tool (CAIT) Version 2.0 (Washington, DC: World Resources Institute, 2014)



Sectors: Where emissions come from

WRI has also examined global, national and sectoral CO₂ emissions. The following graphical representations and sectoral analysis are based on this data.

Graph 1: World GHG emissions by sector in 2011 (excluding land-use change)



Source: Climate Analysis Indicators Tool (CAIT) Version 2.0 BETA (Washington, DC: WRI, 2014)

Electricity and heat

Electricity and heat accounted for 36 per cent of the global GHG emissions, making it the largest sector. Transportation accounted for 16 per cent and agriculture for 15 per cent of GHG emissions. With regard to global share of emissions from electricity and heat, China, the US and EU-28 took the top spots, with around 29, 17 and 10 per cent respectively of the global total, with India

following in fifth position. The top six countries, including the EU-28, account for around 70 per cent of carbon emissions from electricity and heat.

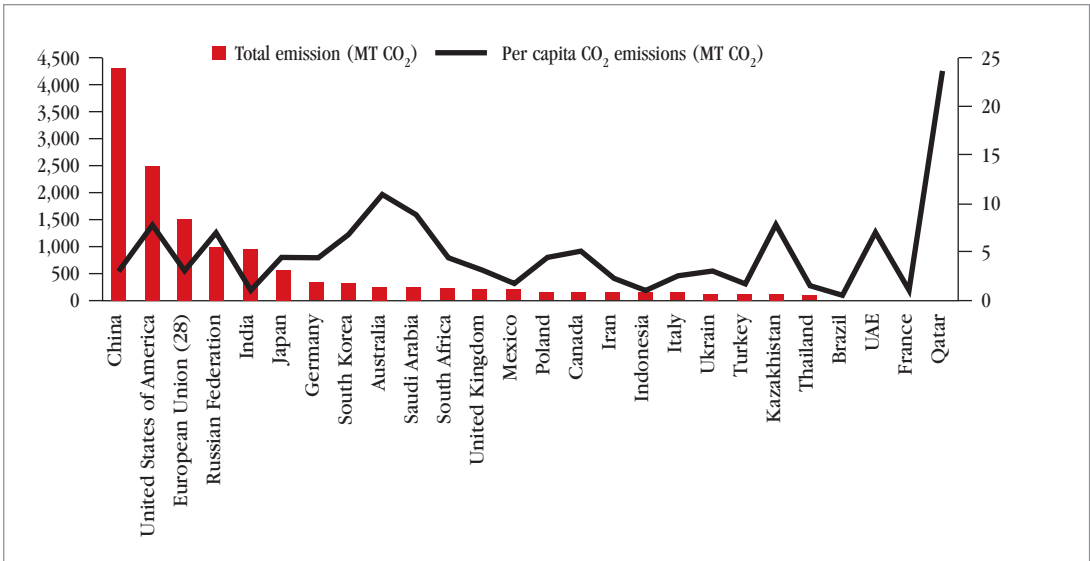
Graph 2 below indicates that while China and India figure in the top five total emitters, the picture is completely different when per capita emissions are taken into account. The black line shows that India's and China's per capita emissions from heat and electricity are very low compared to that of developed countries like US, Japan, Australia and Canada. As is evident, Qatar stands out in the list.

Table 3: Share of CO₂ emissions from electricity and heat

Country	Percentage of world total (2010)
China	29.20
USA	16.96
European Union-28	10.23
Russian Federation	6.85
India	6.59
Japan	3.84
South Korea	2.32
Australia	1.65
Canada	1.13
South Africa	1.57
Brazil	0.43
Rest of the world	19.22

Source: WRI, 2014

Graph 2: Total per capita CO₂ emissions from electricity and heat, 2011



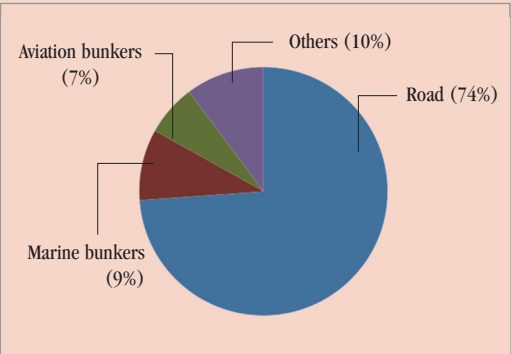
Source: WRI CAIT 2 version, 2014

Transport

The transport sector is responsible for 23-24 per cent of global CO₂ emissions from fossil fuel combustion, with road transport responsible for the largest share, and is expected to grow to one third by 2050. The transport sector has the highest CO₂ emissions growth of all sectors; aviation and road transport are drivers of this growth.

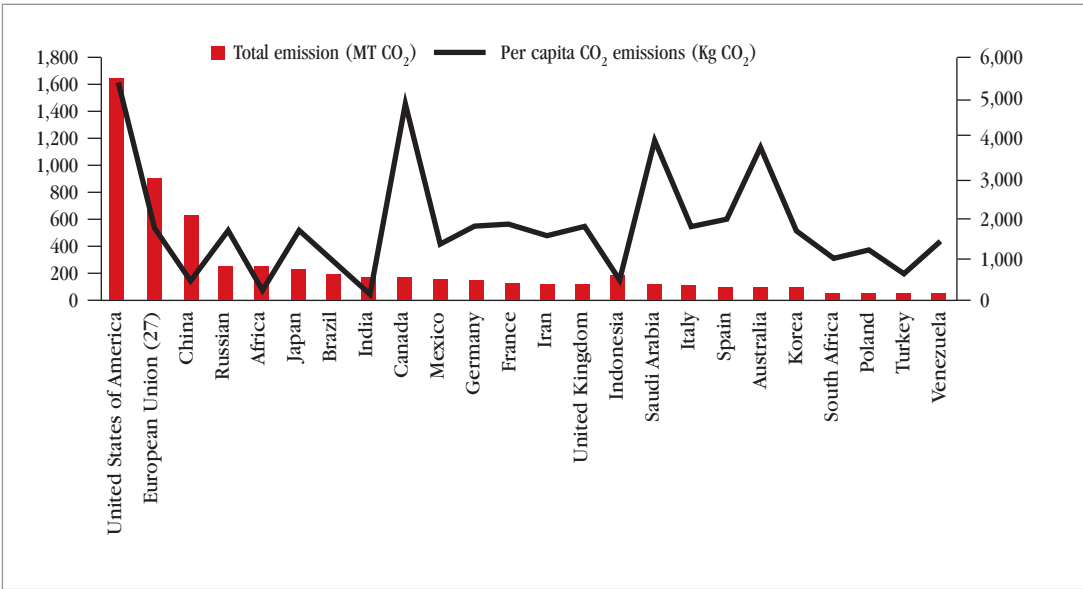
The graph below indicates that total and per capita emissions from the transport sector are highest in the US. Mexico follows closely behind.

Graph 3: Emissions from transport sub-sectors



Source: IEA, 2014

Graph 4: Total and per capita emissions from transport

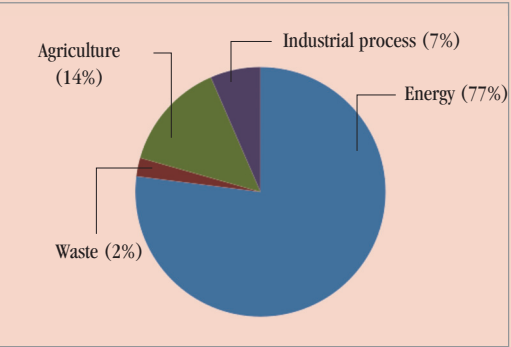


Source: IEA, 2014

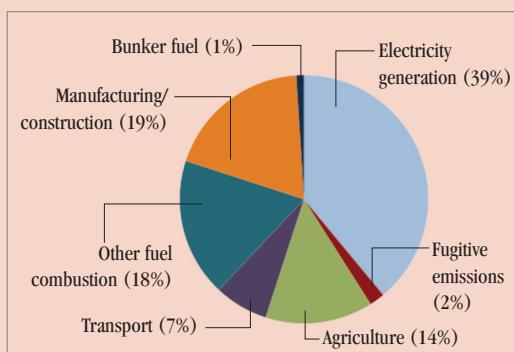
Emissions: India

As per WRI data for 2011, the energy sector accounted for the most GHG emissions among all sectors. Graph 5 shows that the energy sector contributed to 77 per cent of total GHG emissions while the agriculture sector accounted for 14 per cent.

Graph 5: Sectoral contribution to GHG gases, 2011



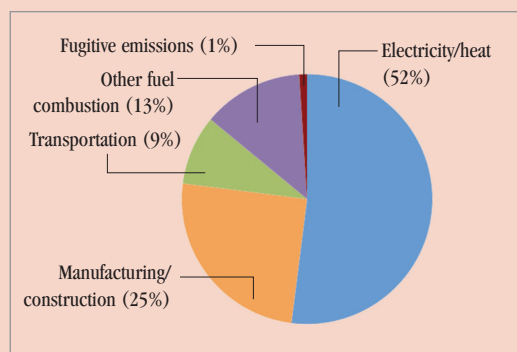
Graph 6: GHG emissions by energy sub-sector, 2011



Total net greenhouse gas (GHG) emissions from India in 2011 were 2486.17 million tonnes of CO₂, equivalent (eq) of which:

- CO₂ emissions were 1860.92 million tonnes
- CH₄ emissions were 492.93 million tonnes
- N₂O emissions were 91.54 million tonnes
- Total carbon dioxide emissions by India in 2011

Graph 7: CO₂ emissions by sub-sector, 2011



were 1860.92 MT CO₂

- Per capita CO₂ emissions for 2011 were 1.52 t CO₂
- Electricity and heat, at 52 per cent, accounted for highest CO₂ emissions within GHG

Within the energy sector, electricity emitted the maximum GHG.