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WHO IS EMITTING?

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Current global emissions

As per World Resources Institute's Climate Analysis Indicators Tools (CAIT) version 2.0 BETA, USA had less than 5 per cent of the world's population, but accounted for 17 per cent of the global carbon dioxide emissions in 2010. India, with nearly 18 per cent of global population accounted for 5 per cent of the emissions. China stood at the top of the chart wth over 27 per cent emissions and around 20 per cent of the global population.

Table 1: Share of global CO₂ emissions and population, 2010

Country	Total CO ₂ emissions in 2010 (Mt CO ₂)	Share of global CO ₂ emissions in 2010 (%)	Share of world population in 2010 (%)
China	8,895.7	27.04	19.51
United States of America	5,670.3	17.24	4.51
European Union (27)	4,056.7	12.33	7.33
Germany	808.2	2.46	1.19
United Kingdom	532.7	1.62	0.91
Italy	434.9	1.32	0.88
France	397.8	1.21	0.95
Poland	312.7	0.95	0.56
Spain	337.3	1.03	0.67
The Netherlands	256.2	0.78	0.24
India	1,710.9	5.20	17.86
Russia	1,667.4	5.07	2.08
Japan	1,205.5	3.66	1.86
South Korea	604.6	1.84	0.72
Canada	552.9	1.68	0.50
Iran	592.0	1.80	1.08
Saudi Arabia	491.8	1.49	0.40
Mexico	449.4	1.37	1.65
Indonesia	439.7	1.34	3.50
Australia	427.9	1.30	0.32
Brazil	480.4	1.46	2.84
South Africa	478.4	1.45	0.73
Ukraine	285.8	0.87	0.67
Turkey	300.6	0.91	1.06
Thailand	290.0	0.88	1.01
Kazakhstan	181.6	0.55	0.24
Rest of world	4,117.9	12.52	32.12

Source: Climate Analysis Indicators Tool (CAIT) Version 2.0 BETA (Washington, DC: World Resources Institute, 2013)

Sectors: Where emissions come from

The World Resources Institute (WRI) and IEA also examined global, national and sectoral co_2 emissions. The following graphical representations and sectoral analysis are based on this data.

Graph 1: World GHG emissions by sector in 2010 (excludes land use change)

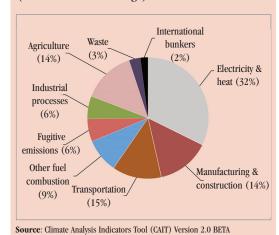


Table 2: World GHG emissions by sector in 2010

(Washington, DC: World Resources Institute, 2013)

Sector	Percentage share of global GHG emissions	
Energy		
Electricity & heat	32	
Manufacturing & construction	14	
Transportation	15	
Other fuel combustion	9	
Fugitive emissions	6	
Industrial processes	6	
Agriculture	14	
Waste	3	
International bunkers	2	

Source: Climate Analysis Indicators Tool (CAIT) Version 2.0 BETA (Washington, DC: World Resources Institute, 2013)

Electricity and heat

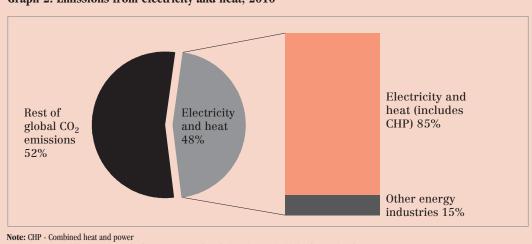
Electricity and heat accounted for about 41 per cent of global CO_2 emissions, making it the largest sector. In terms of global share of CO_2 emissions from electricity and heat, China, US and EU-27 took up the top spots — 29, 19, and 11 per cent, respectively, of the global total — with India following at the fourth position. The 10 largest emitters accounted for 82 per cent of the emissions from this sector. The major per capita emitters, in order, were the Middle East countries, Australia and the US.

Table 3: Share of ${\rm CO_2}$ emissions from electricity and heat

Country	Percentage of world total (2010)
China	28.7
USA	18.5
EU-27	11.0
India	7.0
Russia	6.7
Japan	3.7
South Korea	2.2
Australia	1.6
South Africa	1.9
Canada	0.9
Brazil	0.4
Rest of World	17.4

Source: International Energy Agency (IEA): ${\rm CO}_2$ emissions from fuel combustion, highlights (2012 edition)

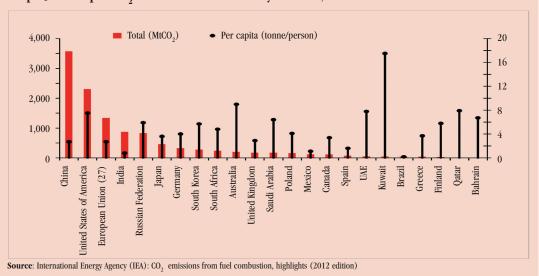
Graph 2: Emissions from electricity and heat, 2010



Source: International Energy Agency (IEA): CO₂ emissions from fuel combustion, highlights (2012 edition)

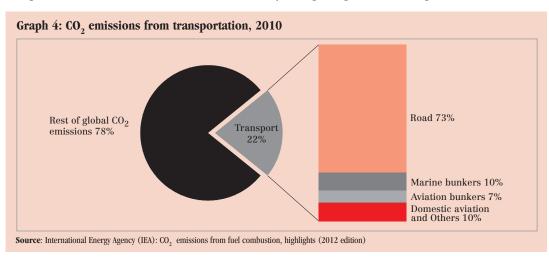


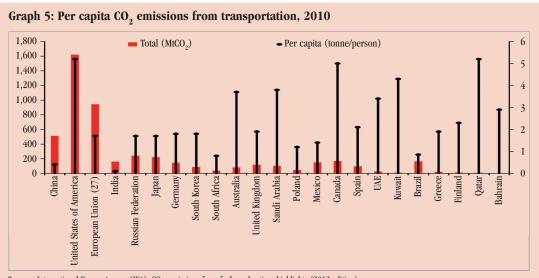
Graph 3: Per capita CO₂ emissions from electricity and heat, 2010



Transport

Transport accounted for about 22 per cent of global CO_2 emissions. Within this sector, road transport, at 74 per cent of CO_2 emissions accounted for the largest share. Aviation amounted to about 7 per cent. Interventions in this sector tend to be oriented around safety and fuel efficiency regulations and development of transportation infrastructure like roads, highways, seaports, and airports. However, difficulties arise in attributing emissions to countries. Ground transport is relatively easy to attribute although there some exceptions, such as in Europe, where emissions almost always occur within the same national boundaries where fuels are purchased. Nearly all emissions for international transport, however, occur in or over international territory, raising ambiguities concerning attribution.

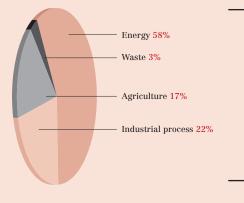




Source: International Energy Agency (IEA): CO₂ emissions from fuel combustion, highlights (2012 edition)

Emissions: India

The reliable esimate of India's inventory comes from the government's 2010 report produced by Indian Network of Climate Change Assessment (INCCA) — a research body commissioned by Union ministry of environment and forests. The data pertains to the year 2007. The government is working on its National Communication which has to be submitted to the UN secretariat in the coming years.

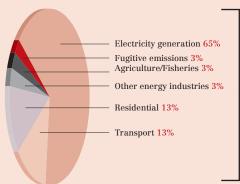


Sectoral contribution to greenhouse gases

The total net greenhouse gas (GHG) emissions from India in 2007 were 1727.71 million tonne of \cos_2 equivalent (eq) of which

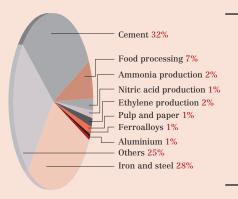
- co₂ emissions were 1221.76 million tonne:
- CH₄, emissions were 20.56 million tonne: and
- N₂o emissions were 0.24 million tonne

India's per capita co_2 eq emission including LULLUCF was 1.5 tonne in 2007.



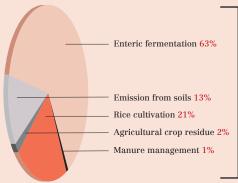
Energy

Within the energy sector, electricity generation contributed 65 per cent of the GHG emissions, transportation 13 per cent and residential and commercial 13 per cent of energy-related emissions.



Industrial process

Within industry, the key sectors were iron and steel (28 per cent), cement (32 per cent) and food processing (7 per cent). Aluminium production contributed 1 per cent of industry-related emissions, whereas production of chemicals such as ammonia, ehylene and nitric acid contributed less than 2 per cent each.



Agriculture

Within agriculture sector, enteric fermentation contributed 63 per cent of the co_2 equivalent emissions. Rice cultivation added 21 per cent and emissions from soils added 13 per cent to the total share of emissions from agriculture.

