



## A Global Breakdown of Greenhouse Gas Emissions by Sector

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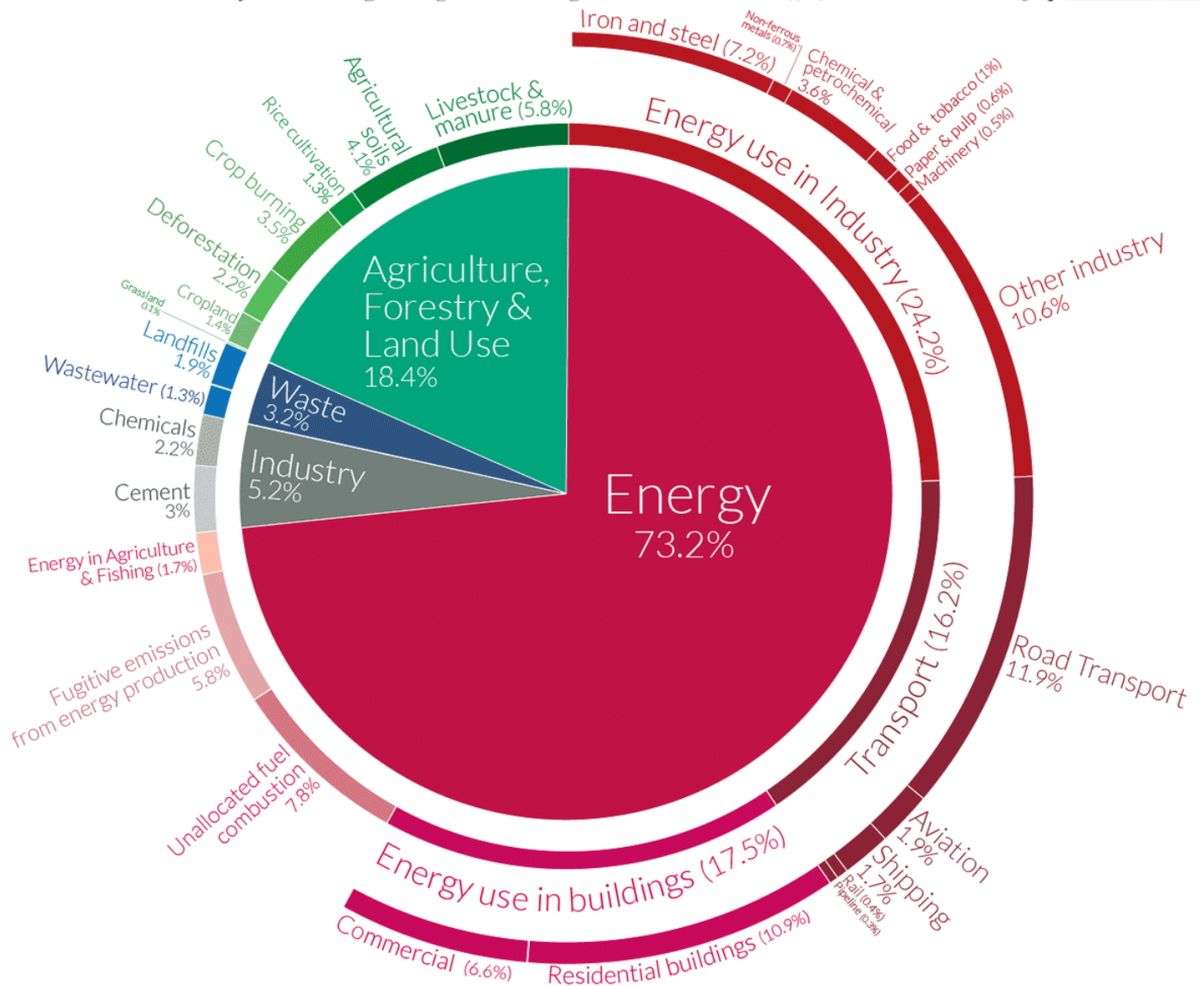
By Our World in Data - Featured Creator

Source: <https://www.visualcapitalist.com/cp/a-global-breakdown-of-greenhouse-gas-emissions-by-sector/>

# Global greenhouse gas emissions by sector



This is shown for the year 2016 – global greenhouse gas emissions were 49.4 billion tonnes CO<sub>2</sub>eq.



OurWorldinData.org – Research and data to make progress against the world's largest problems.

Source: Climate Watch, the World Resources Institute (2020).

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## A Global Breakdown of Greenhouse Gas Emissions by Sector

In a few decades, greenhouse gases (GHGs)—chiefly in the form of CO<sub>2</sub> emissions—have risen at unprecedented rates as a result of global growth and resource consumption.

To uncover the major sectors where these emissions originate, this graphic from [Our World in Data](#) pulls in data from 2016 courtesy of Climate Watch and the World Resources Institute, when total emissions reached **49.4 billion tonnes** of CO<sub>2</sub> equivalents (CO<sub>2</sub>e).

### Sources of GHG Emissions

Global GHG emissions can be roughly traced back to four broad categories: energy, agriculture, industry, and waste. Overwhelmingly, almost **three-quarters** of GHG emissions come from our energy consumption.

Sector	Global GHG Emissions Share
Energy Use	73.2%
Agriculture, Forestry & Land Use	18.4%
Industrial processes	5.2%
Waste	3.2%

Within each category, there are even more granular breakdowns to consider. We'll take a closer look at the top two, which collectively account for **over 91%** of global GHG emissions.

### Energy Use

Within this broad category, we can further break things down into sub-categories like transport, buildings, and industry-related energy consumption, to name a few.

Sub-sector	GHG Emissions Share	Further breakdown
Transport	16.2%	<ul style="list-style-type: none"><li>• Road 11.9%</li><li>• Aviation 1.9%</li><li>• Rail 0.4%</li><li>• Pipeline 0.3%</li><li>• Ship 1.7%</li></ul>
Buildings	17.5%	<ul style="list-style-type: none"><li>• Residential 10.9%</li><li>• Commercial 6.6%</li></ul>
Industry energy	24.2%	<ul style="list-style-type: none"><li>• Iron &amp; Steel 7.2%</li><li>• Non-ferrous metals 0.7%</li><li>• Machinery 0.5%</li><li>• Food and tobacco 1.0%</li><li>• Paper, pulp &amp; printing 0.6%</li><li>• Chemical &amp; petrochemical (energy) 3.6%</li><li>• Other industry 10.6%</li></ul>
Agriculture & Fishing energy	1.7%	-
Unallocated fuel combustion	7.8%	-
Fugitive emissions from energy production	5.8%	<ul style="list-style-type: none"><li>• Coal 1.9%</li><li>• Oil &amp; Natural Gas 3.9%</li></ul>
<b>Total</b>	<b>73.2%</b>	

Billions of people rely on petrol and diesel-powered vehicles to get around. As a result, they contribute to **almost 12%** of global emissions.

But this challenge is also an opportunity: the consumer adoption of electric vehicles (EVs) could significantly help shift the world away from fossil fuel use, both for passenger travel and for freight—although there are still [speedbumps](#) to overcome.

Meanwhile, buildings contribute **17.5%** of energy-related emissions overall—which makes sense when you realize the stunning fact that cities use 60-80% of the world's annual energy needs. With [megacities](#) (home to **10+ million** people) ballooning every day to house the growing urban population, these shares may rise even further.

## Agriculture, Forestry & Land Use

The second biggest category of emissions is the sector that we rely on daily for the food we eat.

Perhaps unsurprisingly, methane from cows and other livestock contribute the most to emissions, at **5.8%** total. These foods also have some of the highest [carbon footprints](#), from farm to table.

Sub-sector	GHG Emissions Share
Livestock & Manure	5.8%
Agricultural Soils	4.1%
Crop Burning	3.5%
Forest Land	2.2%
Cropland	1.4%
Rice Cultivation	1.3%
Grassland	0.1%
<b>Total</b>	<b>18.4%</b>

Another important consideration is just how much land our overall farming requirements take up. When significant areas of forest are cleared for grazing and cropland, there's a [clear link](#) between our land use and rising global emissions.

Although many of these energy systems are still status quo, the global energy mix is ripe for change. As the data shows, the potential points of disruption have become increasingly clear as the world moves towards a green energy revolution.

*For a different view on global emissions data, see [which countries](#) generate the most CO<sub>2</sub> emissions per capita.*

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