

Leander de Kraker
10423354
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Data description and story

I wanted to visualize what countries emit most greenhouse gasses, and also what gases those exactly are per country (Nitrous Oxide, CO₂, Methane (CH₄), and other gases).

Main map story. The total amount of emitted greenhouse gases (in CO₂ equivalent) is shown on the map.

1990: Yes of course America is the biggest greenhouse gas emitter, with China and Russia following second and third. The max is 6136 mega tonnes emitted gas.

2012: China has broken all emission records! With twice the emitted gases of America. Which in turn has twice the amount of emitted gasses of Russia. America's emission has only slightly risen, while China's emission has tripled, and Russia has slightly decreased emissions.

Data specifics: The measurements are set to the potency of the greenhouse gas. CO₂ has a potency of 1 (by definition), Nitrous Oxide however is 256-300 times as potent as a greenhouse gas! So the pie chart part for NO would be 300 times smaller if the actual emitted amount of gas was visualized. Methane is ~30 times more potent than CO₂.

Other gases include: sulphur hexafluoride, perfluorocarbons, PFC, SF₆ and HFC. Their potency is in most cases thousands or then-thousands time larger than CO₂.

Online I could only find the cause for emission per country (agricultural/ industrial/transport), so I was actually quite curious to my results ☺. The cause for greenhouse gas emission did not seem to differ that much per country, the biggest distinction could be seen in industrialized/ wealthy countries vs 3th world countries.

Pie chart story. To my surprise, which gases are emitted per country differ immensely! They differ more than the cause for emission. However I think the biggest cause for the changes are again the wealth/ industrialization of the country. Industrialized countries emit a lot of CO₂, while the third world countries emit almost none, compared to methane, NO or others.

There have been enormous differences in the emission of gasses between 1990 and 2012.

Namibia example: 1990: 60% methane emission. -> 2012: methane emission has risen, but the other greenhouse gas emissions have risen so much that methane is now just 13% of the emission.

The Netherlands are small and doesn't seem to jump out but we live there, so I set the Netherlands as default first pie chart.

Colour use

Map: I wanted more emission to look bad, so I choose red (#DD0000) for the high total emission values. In the beginning I choose complete green for the lower values (#00FF00), but as you can see, there are a few 'outliners' in the data, like China and the USA, which caused almost the entire world to look green except for China. That made it look as if the rest of the world didn't do anything. So I choose for a less green colour (#CAEE77), this shifted the transition to red more to the low values, while still preserving a large colour range.

Pie chart: For the pie chart I decided very different colours were needed. But I didn't want to have different luminance of the colours. I choose the colours based on properties of the gas which they represent. Methane gives a blue flame when it is burned and also the planet Uranus is blue in part because of the large amount of methane gas in the atmosphere, so that was an easy choice:

#0000AA (blue). Because CO2 is most associated with global warming (though it is the least potent of the listed gases), and because Mars' atmosphere, which is made almost entirely out of CO2, is reddish/white (although the sunsets and rises are blue) I choose red for CO2 (#AA0000).

Then the logical remaining choices were green and grey, Nitrous Oxide sounds toxic and thus deserves green: #00AA00. For the 'other gases' I choose the grey value, also because those gases feel mysterious and downright depressing. I choose a grey that would differ least with the others' luminance: #535353.

Data links

Gas emission between different times: I wanted to take the most recent year (2013, 2014, 2015 didn't have any data), and one of the earlier years.

Gas emissions between different countries. When I saw the graph with different causes for emission I immediately wanted to know the differences in what gases were emitted, I'm happy I was able to do that.