

# 03 GLOBAL EMISSIONS

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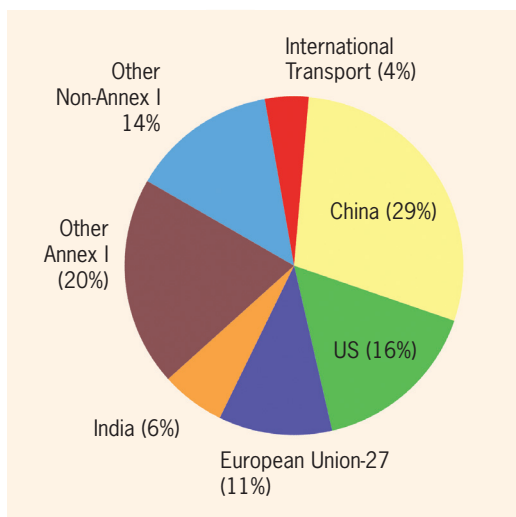
## GLOBAL EMISSIONS



In 2013, the Netherlands Environmental Agency (NEA) jointly with the European Commission (EC) published a report on global carbon emissions. One of the major highlights of the report was that 2012 was an exceptional year in terms of global carbon dioxide (CO<sub>2</sub>) emissions. The year experienced only a 1.1 per cent increase in emissions over 2011 levels while the global average annual growth rate of 2.4 ppm in atmospheric CO<sub>2</sub> concentrations in 2012 was fairly high. The moderate increase in global CO<sub>2</sub> emissions in 2012 seems remarkable at a time when global economic growth was almost on par with the average growth levels over the last decade.

The NEA-EC Report used the Emission Database for Global Atmospheric Research (EDGAR) 4.2 data set for greenhouse gases, the results from a joint project of the European Commission's Joint Research Centre (JRC) and the PBL Netherlands Environmental Assessment Agency. It includes CO<sub>2</sub> emissions from fossil-fuel combustion as well as from sources such as flaring of waste gas during oil and gas production, cement clinker production and other limestone uses, feedstock and other non-energy uses of fuels, and several other small sources. The report however excludes CO<sub>2</sub> emissions

### Graph 1: Distribution of global emissions – 2012



Source: NEA-EC Report

from deforestation and logging, forest and peat fires, post-burn decay of remaining above-ground biomass, and from decomposition of organic carbon in drained peat soils.

### Global emissions

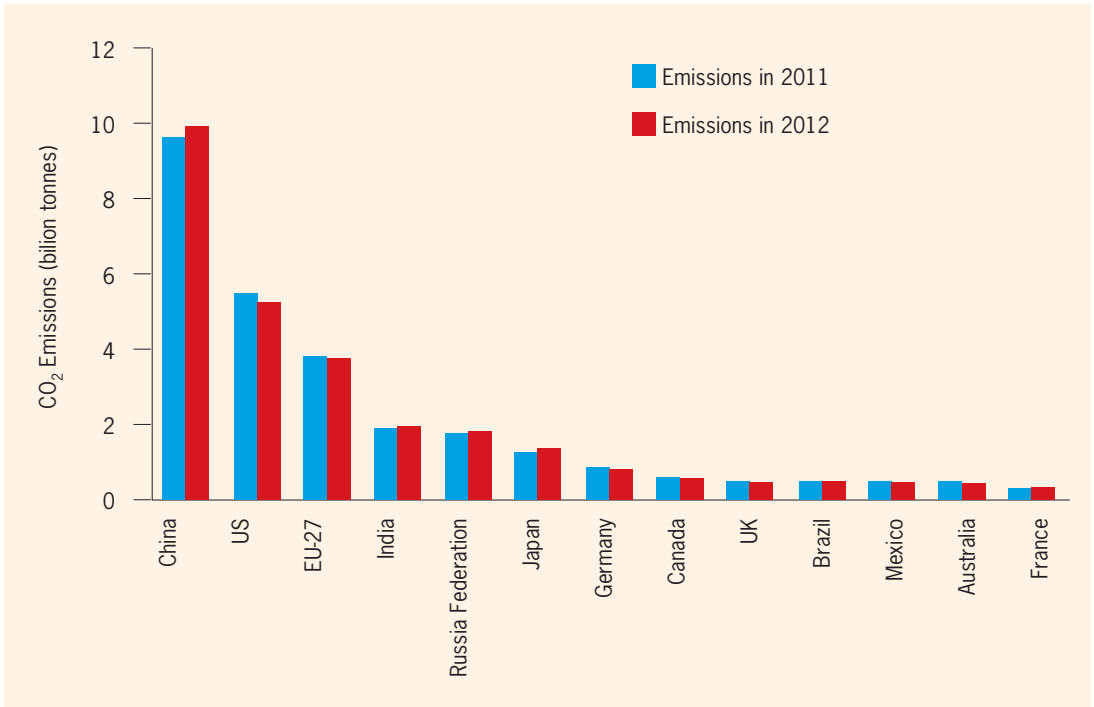
- The increase in actual global emissions was only 1.1 per cent over 2011, against the average annual increase of 2.9 per cent since 2000.
- The report attributes this decrease in actual global emissions in 2012 to decoupling, which points to a shift towards less fossil-fuel activities, more use of renewable energy and increased energy saving.
- The largest CO<sub>2</sub>-emitting country by far was China, with a share of 29 per cent in 2012, much larger than the second largest, the United States, with 16 per cent, and the European Union with 11 per cent.
- A growth of 52 per cent in global anthropogenic CO<sub>2</sub> emissions in 20 years since 1992 (when the UN Earth Summit was held) is observed.

### Key statistics

While the NEA-EC report does show that there were large increases in emissions from developing countries, it also presents data which highlights the huge disparity in per-capita emissions that still exists between developed and developing nations.

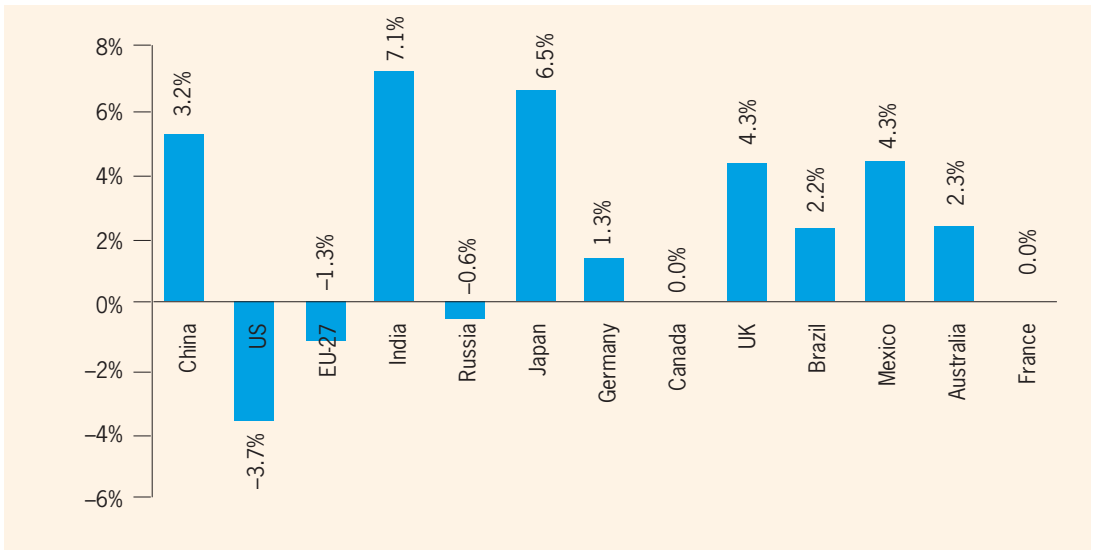
- China increased its carbon emissions by 3 per cent over 2011, while the US and the EU decreased their carbon emissions by 4 per cent and 1.6 per cent respectively.
- The EU as a whole experienced an economic recession in 2012 with the EU27's GDP declining by 0.3 per cent, compared to 2011, and actual CO<sub>2</sub> emissions declining by 1.3 per cent, which is less than the 2011 decrease of 3.1 per cent. In the US, the shale gas boom resulted in the decrease in carbon emissions, points out the report.
- In the list, percentage change was greatest in India, pegged at 7.1 per cent. Japan followed closely with 6.5 per cent above 2011 levels.

## Graph 2: Country-wise emissions in 2011-12



Source: NEA-EC Report

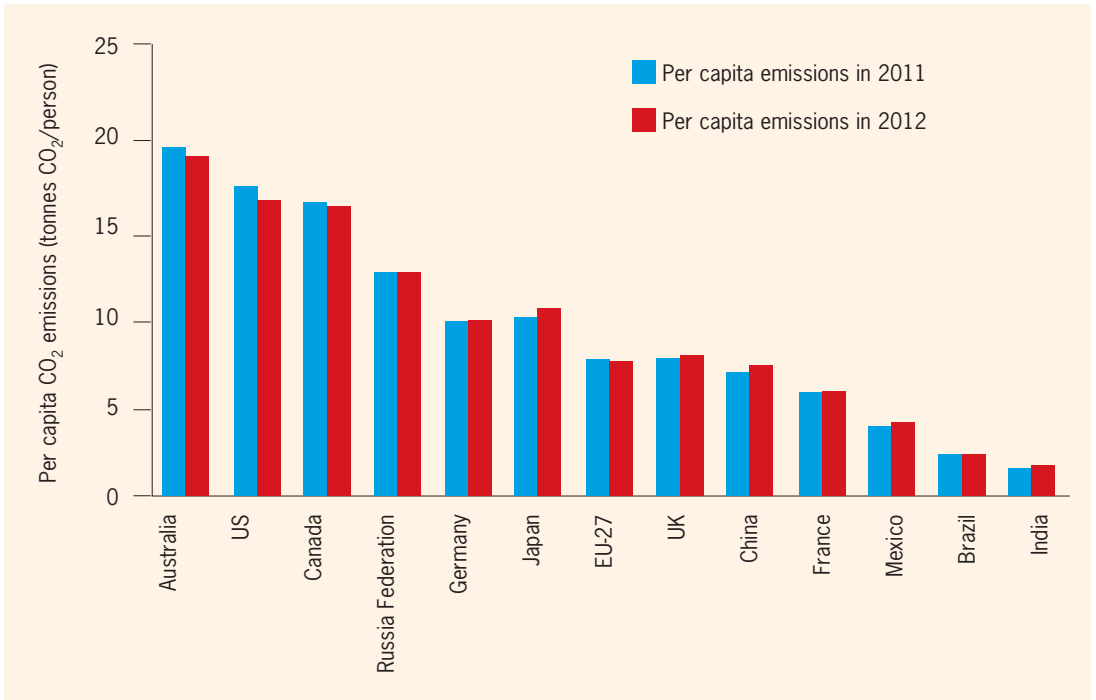
## Graph 3: Change in total emissions in 2012 over 2011 (in per cent)



Source: NEA-EC Report

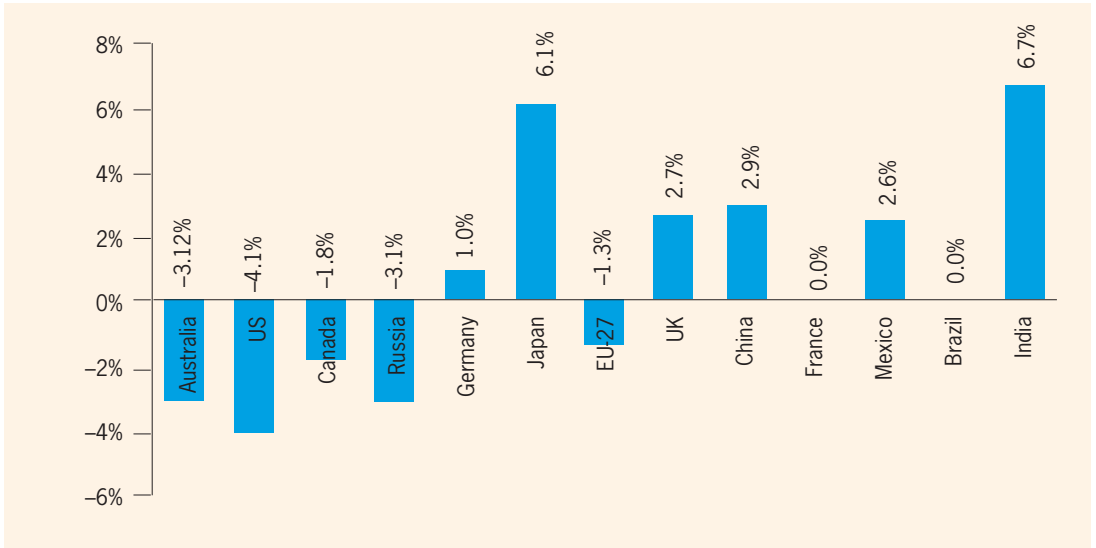
- Total emissions of the UK also increased by 4.3 per cent over 2011 levels.
- While there is no percentage change in France's emissions, Germany increased its emissions by 1.3 per cent.
- A decrease in emissions of 3.7, 1.3 and 0.6 per cent has been seen in countries like the US, EU and Russia respectively.
- A comparison of India's and the US's emissions are as follows: India's base year (2011) emissions was 1970 million tonnes of CO<sub>2</sub> and that of the US was 5420 million tonnes of CO<sub>2</sub> which is almost three times that of India. Therefore, even though total emissions of the US decreased in 2012 over 2011, in absolute terms USA still emits much more than India.
- Per capita CO<sub>2</sub> emissions of Annex I countries such as Australia, US and Canada are 18.8 tonnes, 16.4 tonnes and 16 tonnes CO<sub>2</sub> per person, which is relatively high as compared to Non-Annex I countries.
- Countries with per capita emissions of less than 10 tonnes of CO<sub>2</sub> per person are EU-27, UK, China and France.
- Brazil and India are among the countries whose per capita emission is less than 5 tonnes of CO<sub>2</sub> per person. Thus, an Indian citizen in 2012 emitted 12 times less than an American citizen.
- However, in terms of percentage change in per capita emissions between 2011 and 2012, India,

**Graph 4: Per capita emissions in 2011-12**



Source: NEA-EC Report

**Graph 5: Change in per capita emissions in 2012 over 2011 (in per cent)**



Source: NEA-EC Report

- Japan, and China topped the list with 6.7 per cent, 6.1 per cent and 2.9 per cent respectively.
- Among the developed countries, Japan has the highest percentage increase in its per capita emissions.

- A decrease in per capita emissions is noted in case of Australia, US, Canada, Russia and EU.