

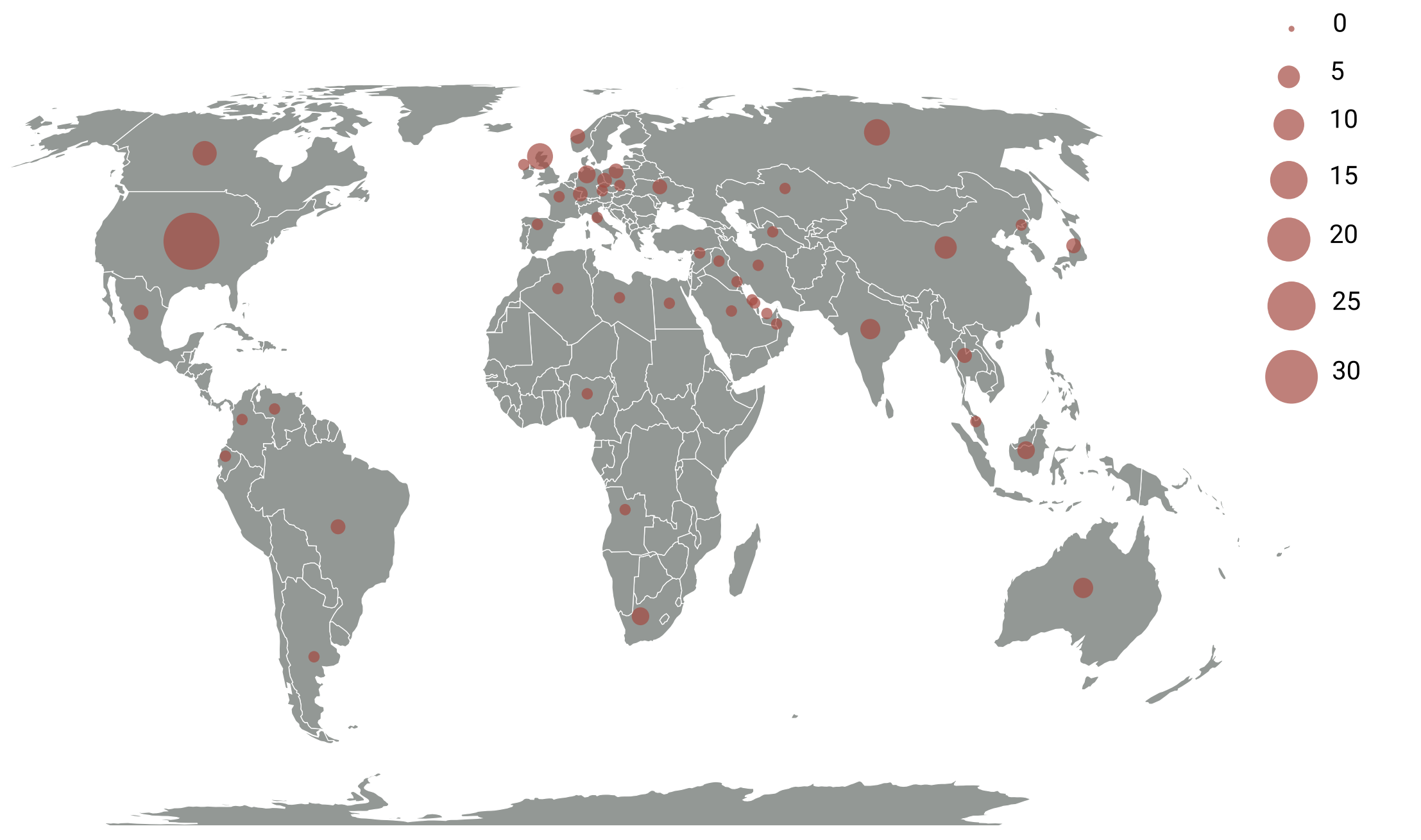
Carbon Heavyweights

The Biggest Polluters on the Global Stage

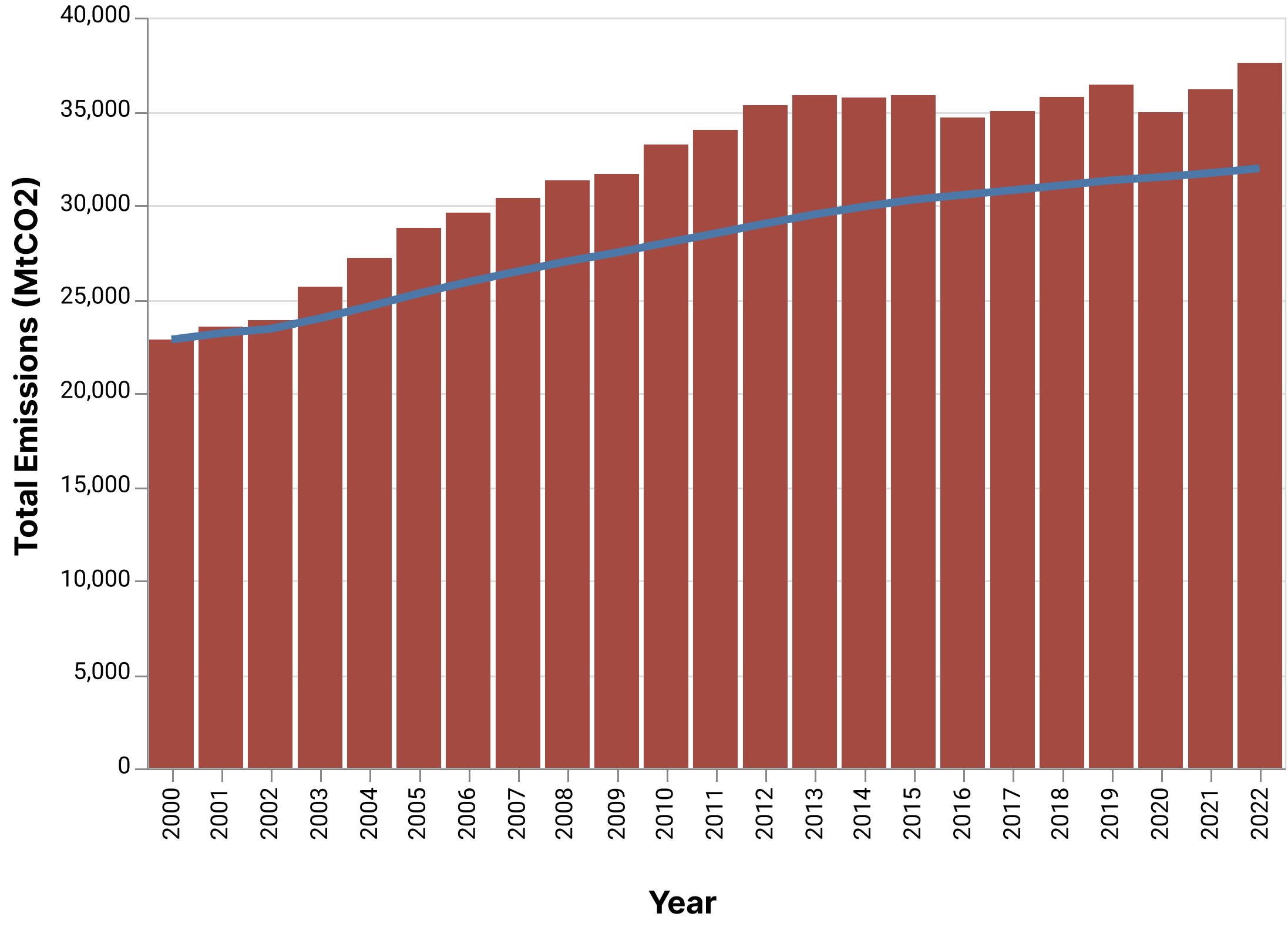
Carbon Majors is a database of historical production data from **122 of the world's largest oil, gas, coal, and cement producers.**

The United States host 34 of these top polluting entities, but the rest are distributed globally.

Global Distribution of High Polluting Entities



Annual Carbon Emissions



Carbon emissions from the top producers have only increased over the past 20 years.

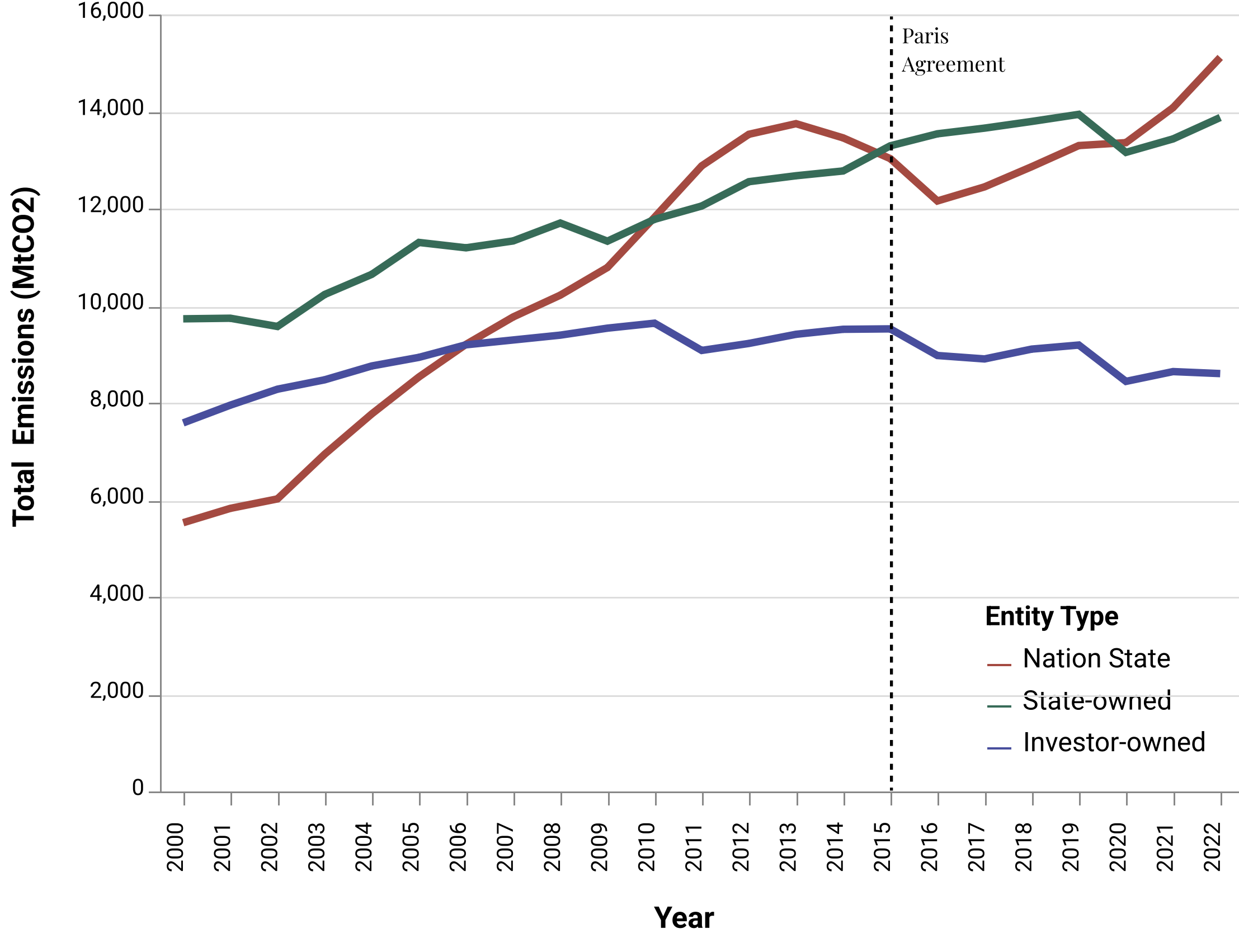
To keep global warming to no more than 1.5°C – as called for in the Paris Agreement – **emissions need to be reduced by 45% by 2030 and reach net zero by 2050.**

Since 2006, nation states and state owned entities have produced more emissions annually than investor-owned entities.

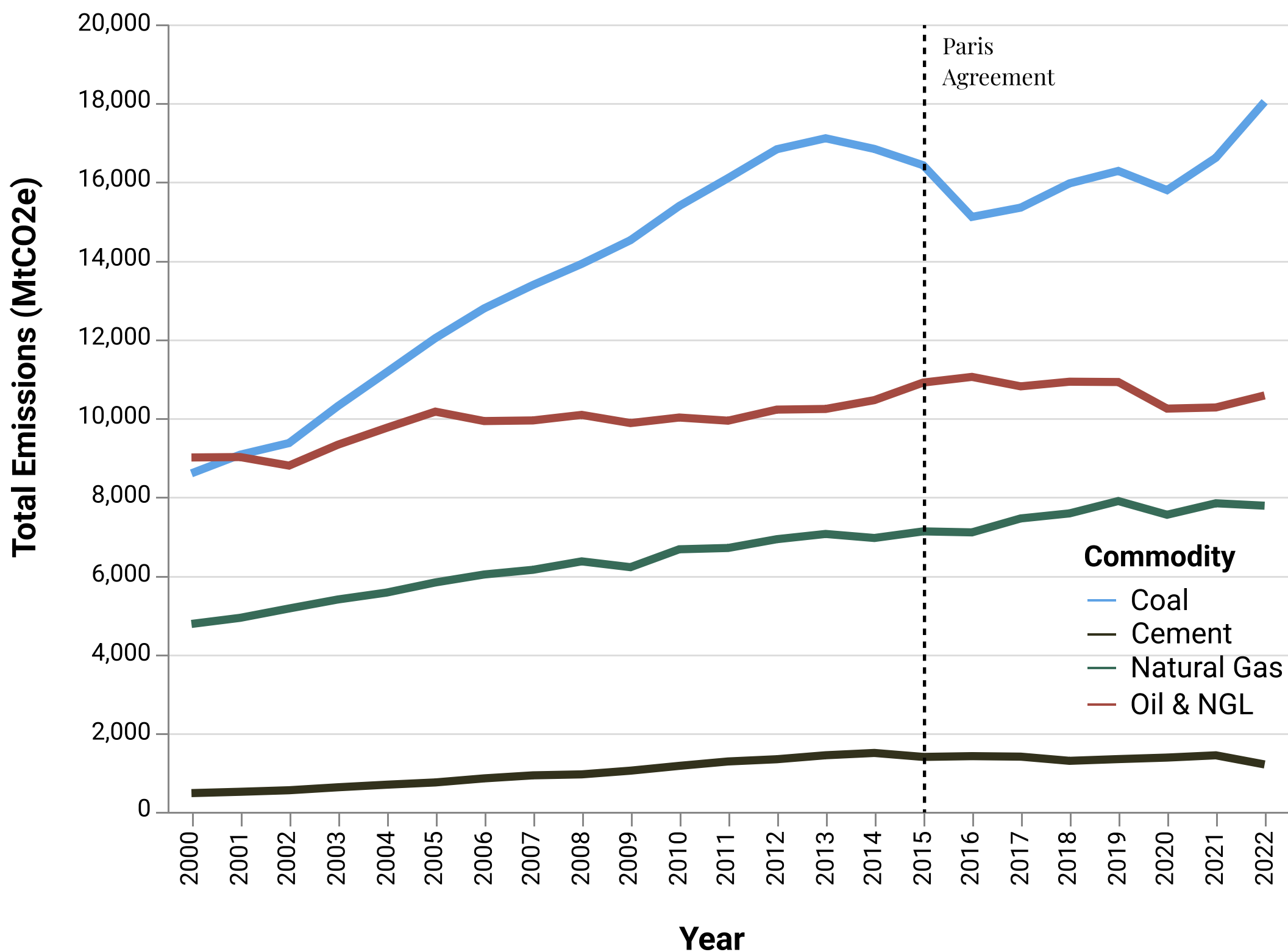
A state owned entity is a business that operates in the commercial sector on behalf of the government.

An investor owned entity is a business that is owned by its stakeholders.

Carbon Emissions by Entity Type



Carbon Emissions by Commodity



Among the entities and commodities examined, **coal is associated with the highest levels of carbon emission** followed by oil & NGL.

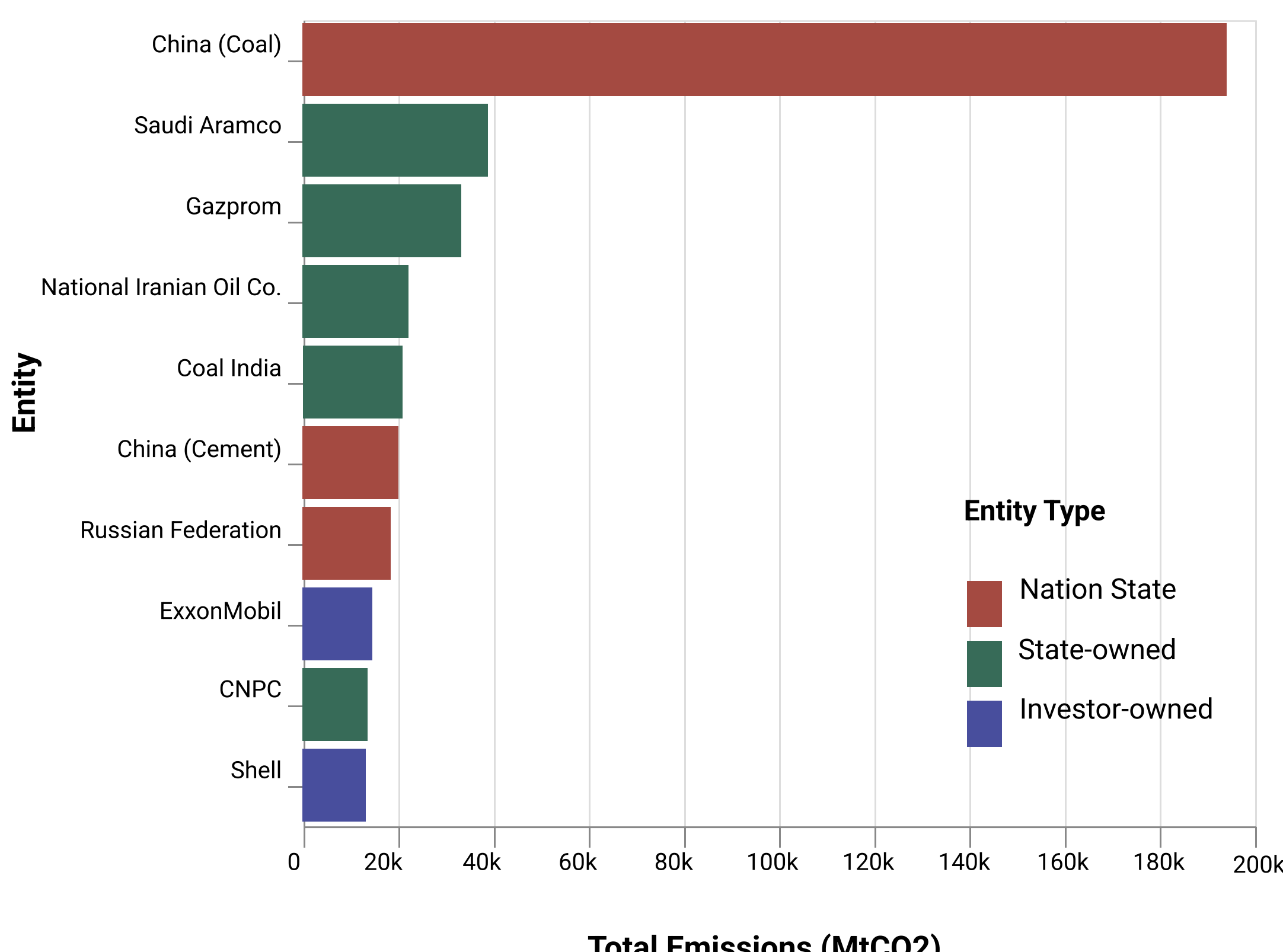
Coal related emissions have also increased at a higher rate and been more volatile in recent years relative to other commodities.

A lion's share of carbon emissions since 2000 comes from coal production out of China.

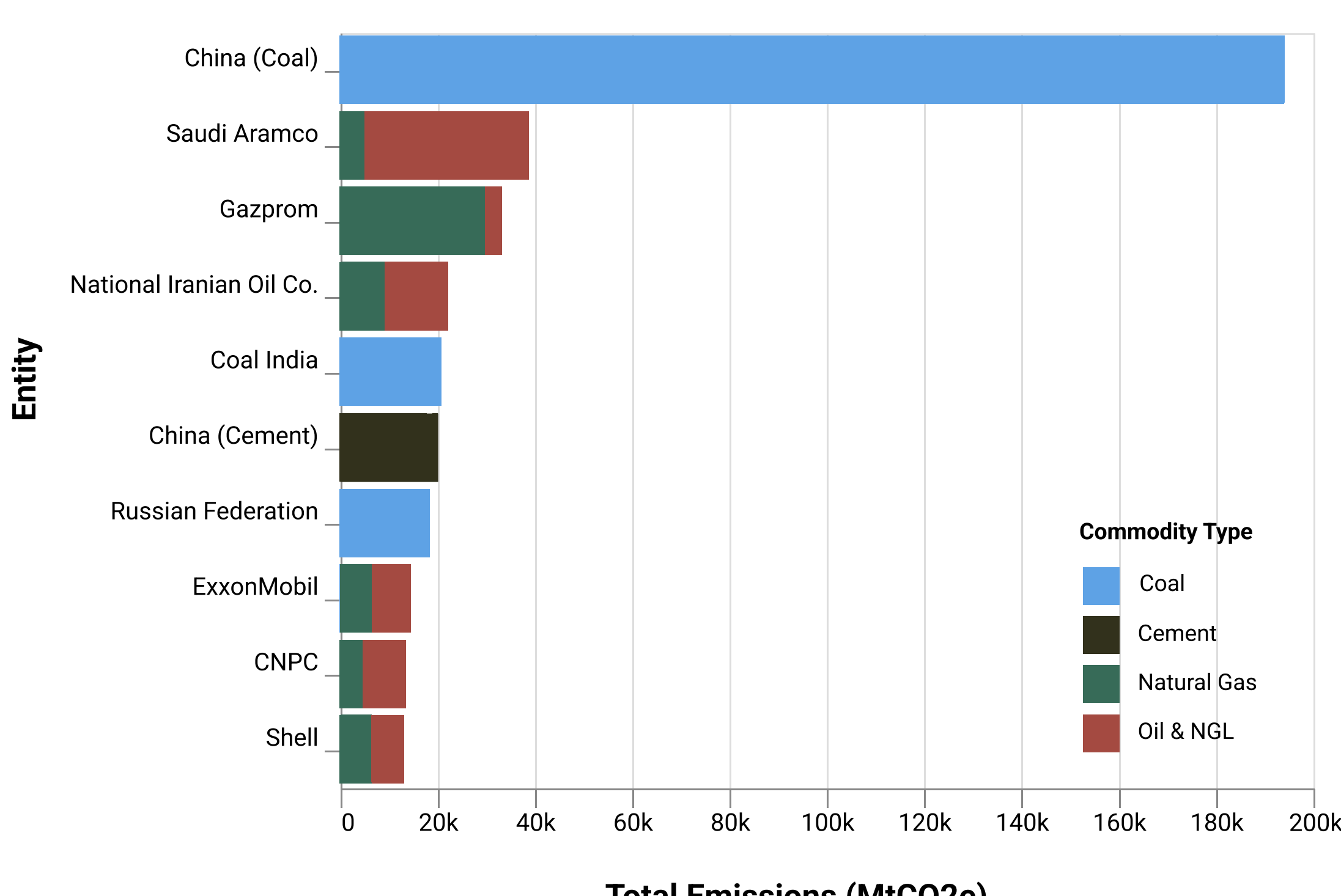
Other top polluters are based India, the United Kingdom, the United States and the Russian Federation.

Eight out of ten of the top polluters are nation states or state owned.

Top 10 Polluters Since 2000



Commodities of Top 10 Polluters Since 2000



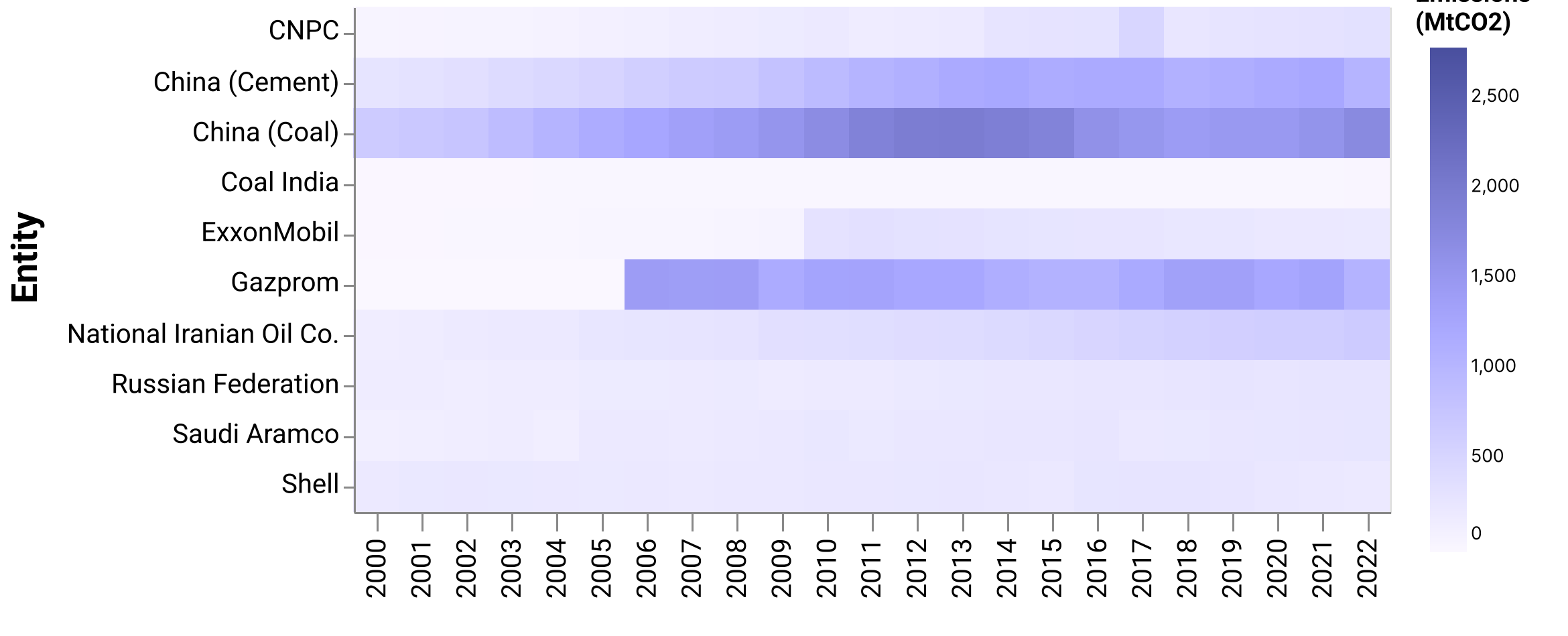
Among the top 10 polluters, China, India and the Russian Federation have primarily produced coal related emissions.

However, six of the top ten polluters contribute their emissions largely to oil, NGL and natural gas production.

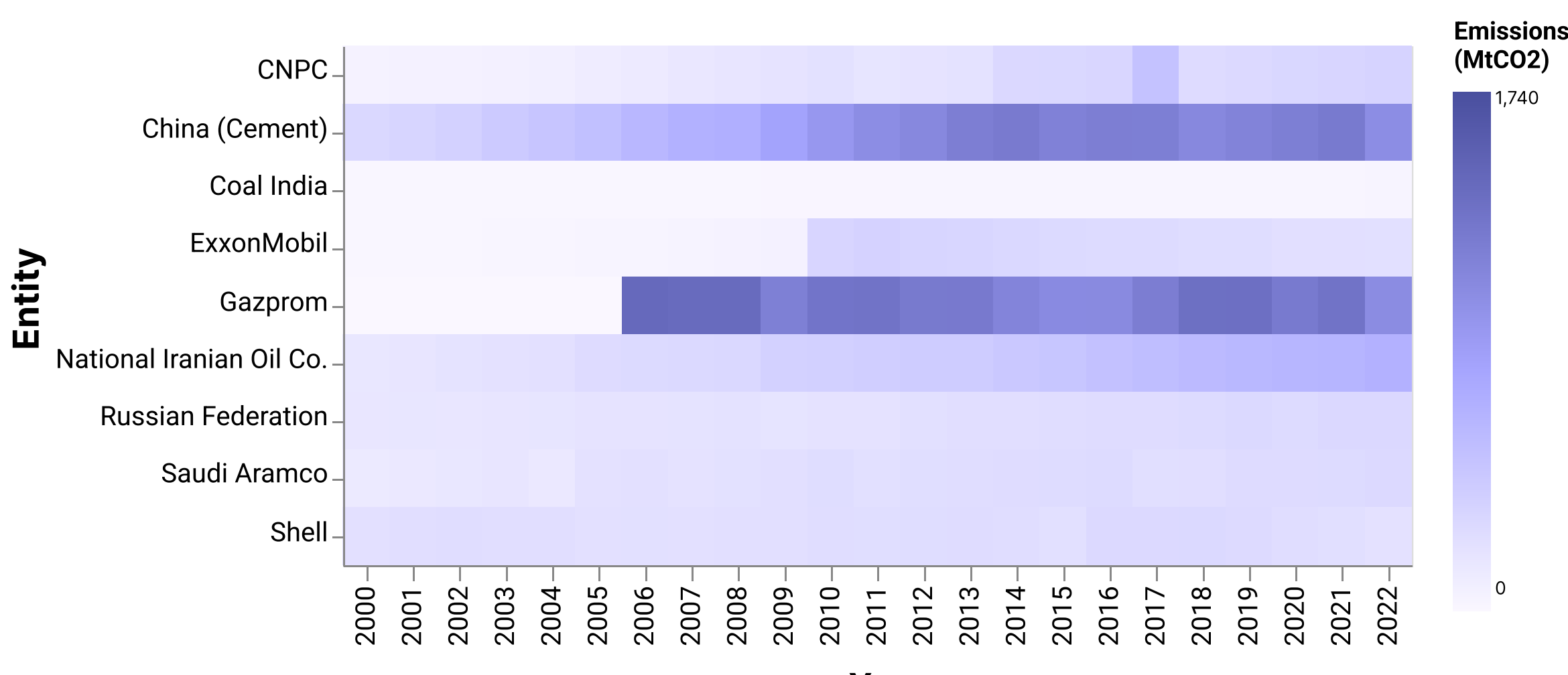
From 2000 – 2022, China's coal and cement production was consistently a leading cause of emissions, with coal emissions seemingly peaking in 2013.

Gazprom, a Russian Federation owned entity, began emitting large amounts of carbon in 2006 and has been fairly consistent in its emissions since.

Annual Emissions by Top Producers



Annual Emissions Excluding China (Coal)



Climate change is a global challenge that does not respect national borders. It is an issue that requires solutions that need to be coordinated at the international level and it requires international cooperation to help developing countries move toward a low-carbon economy.