

# Policies of China, Russia and Canada threaten 5C climate change, study finds

Ranking of countries' goals shows even EU on course for more than double safe level of warming

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Fri 16 Nov 2018 10:00 GMT

Last modified on Fri 16 Nov 2018 10:05 GMT



Vendors near a state-owned coal-fired power plant in China. Photograph: Kevin Frayer/Getty Images

China, Russia and Canada's current climate policies would drive the world above a catastrophic 5C of warming, according to a study that ranks the climate goals of different countries.

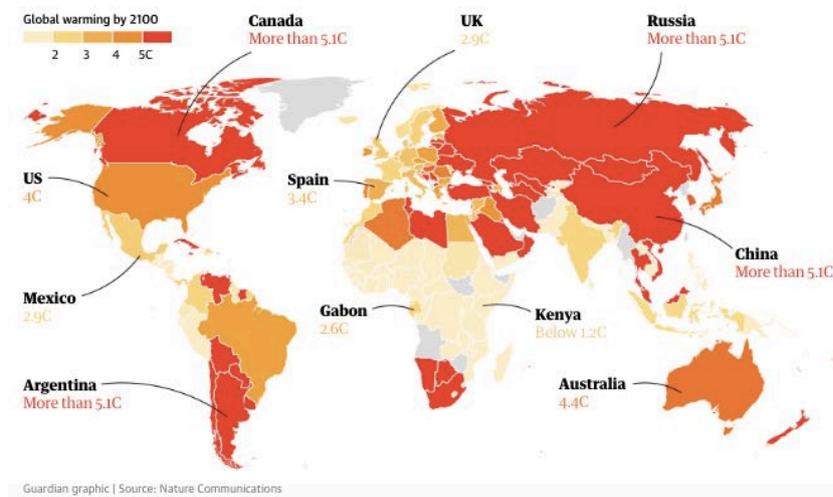
The US and Australia are only slightly behind with both pushing the global temperature rise dangerously over 4C above pre-industrial levels says the paper, while even the EU, which is usually seen as a climate leader, is on course to more than double the 1.5C that scientists say is a moderately safe level of heating.

The study, published on Friday in the journal Nature Communications, assesses the relationship between each nation's ambition to cut emissions and the temperature rise that would result if the world followed their example.

The aim of the paper is to inform climate negotiators as they begin a two-year process of ratcheting up climate commitments, which currently fall far short of the 1.5-to-2C goal set in France three years ago.

## Climate goals are off course. Which countries are to blame?

New study shows China leading world to 5.1C of global warming, US to 4C and EU to 3.2C



The [related website](http://paris-equity-check.org/) (<http://paris-equity-check.org/>) also serves as a guide to how nations are sharing the burden of responding to the greatest environmental threat humankind has ever faced.

Among the major economies, the study shows India is leading the way with a target that is only slightly off course for 2C. Less developed countries are generally more ambitious, in part because they have fewer factories, power plants and cars, which means they have lower emissions to rein in.

On the opposite side of the spectrum are the industrial powerhouse China and major energy exporters who are doing almost nothing to limit carbon dioxide emissions. These include Saudi Arabia (oil), Russia (gas) and Canada, which is **drawing vast quantities of dirty oil from tar sands**. Fossil fuel lobbies in these countries are so powerful that government climate pledges are very weak, setting the world on course for more than 5C of heating by the end of the century.

Only slightly better are the group of countries that are pushing the planet beyond 4C. Among them are the US, which has huge emissions from energy, industry and agriculture somewhat offset by promises of modest cuts and more renewables. **Australia, which remains heavily dependent on coal exports**, is also in this category.

The wealthy shopping societies of Europe fare slightly better – largely because emissions on products are calculated at the source of manufacture rather than the point of consumption – but the authors of the paper say their actions lag behind their promises to set a positive example.

“It is interesting to see how far out some countries are, even those that are considered leaders in the climate mitigation narrative,” said the study's author, Yann Robiou du Pont of Melbourne University.

The study is likely to be controversial. Under the Paris agreement, there is no top-down consensus on what is a fair share of responsibility. Instead each nation sets its own bottom-up targets according to a number of different factors, including political will, level of industrialisation, ability to pay, population size, historical

responsibility for emissions. Almost every government, the authors say, selects an interpretation of equity that serves their own interests and allows them to achieve a relative gain on other nations.

To get around these differing concepts of fairness, the paper assesses each nation by the least stringent standards they set themselves and then extrapolates this to the world. In doing so, the authors say they can “operationalise disagreements”.

Taking account of the different interpretations, they say the world needs to commit to a virtual 1.4C target in order to achieve a 2C goal. They hope their equity metric can be used in next month’s UN climate talks in Katowice and in climate litigation cases.

The authors said the study could in future be extended to the subnational level, such as individual US states. They also note that a few key sectors are currently omitted, including land-use change (which is fundamental in rapidly deforesting nations such as Brazil, Argentina and Indonesia), international shipping and aviation.



Brazil is losing large tracts of natural forest to activities such as mining, logging and agriculture. Photograph: Carl de Souza/AFP/Getty Images

Although the study highlights the huge gap between political will and scientific alarm, Robiou du Pont said it should inspire rather than dispirit people.

“The positive outcome of this study is that we have a metric to assess the ratcheting up of ambition. Civil society, experts and decision-makers can use this to hold their governments accountable, and possibly undertake climate litigation cases as **happened recently in the Netherlands**,” he said. “This metric translates the lack of ambition on a global scale to a national scale. If we look at the goal of trying to avoid damage to the Earth, then I am pessimistic as this is already happening. But this should be a motivation to ratchet up ambition and avoid global warming as much and as rapidly as possible. Every fraction of a degree will have a big impact.”

Commenting on the study, other academics said it could be used by anyone to show how climate action can be navigated in a world in which each country ranks itself based on what they consider to be fair.

“This paper provides a means for countries to check how their contribution might be perceived by other countries and thus judge whether they are perceived as a climate leader or laggard,” said Joeri Rogelj of Imperial College London.