

# COUNTRIES' PLEDGES IMPROVE ODDS OF THWARTING GLOBAL TEMPERATURE RISE BY A THIRD

Relevant for: Environment | Topic: Environmental Degradation - GHGs, Ozone Depletion and Climate Change

Staying cool: The effort is to have most major economies pledge to reach net zero by mid-century. | Photo Credit: [Mark Lowery](#)

How effective are climate change pledges made by countries in containing global warming? A study published Friday in the journal *Science* finds that the latest Nationally Determined Contributions by 120 countries, as of September 30, improve the odds of global temperature rise staying below 2°C by 34% and below 1.5°C by 1.5%.

By way of comparison, the 2015 pledges made by countries at the Paris Agreement promised only a 8% chance of temperatures staying below 2°C, and zero—or no chance—at 1.5°C.

If countries were to follow a more ambitious path beyond 2030, those probabilities rose to 60% and 11% respectively.

The findings while optimistic come amidst the deliberations underway at Glasgow where the greatest global effort is underway to have countries sign on to an agreement to keep temperatures below 1.5°C and, to this end, have most major economies pledge to reach net zero by mid-century. Net zero is when a country's emissions are offset by having an equivalent amount removed from the atmosphere for zero emissions in balance. While countries such as the United States, the United Kingdom and the European Union have committed to a 2050 time line, China—the world's largest polluter—has indicated a 2060 timeline and India—the third largest—a 2070 timeline.

Only 12 countries have enshrined this commitment in law. These are Germany, Sweden, Japan, United Kingdom, France, Canada, South Korea, Spain, Denmark, New Zealand, Hungary, Luxembourg.

“We are so much closer to getting to the 2-degree goal than six years ago when the Paris Agreement was first signed,” said corresponding author Haewon McJeon, a research scientist at the U.S. Department of Energy's Pacific Northwest National Laboratory (PNNL) in a statement. “The wave of strengthened climate pledges and net-zero targets significantly increased our chance of staying under 2 degrees Celsius. And we practically ruled out the possibility of the worst climate outcomes of 4 degrees or higher.”

However, making the 1.5° C limit more likely will take more ambition, cautioned lead author Yang Ou, a postdoctoral researcher at the Joint Global Change Research Institute, a partnership between PNNL and the University of Maryland.

The researchers relied on a modelling approach and used the Global Change Analysis Model (GCAM) to simulate a spectrum of emissions scenarios. They then evaluated the likely temperature outcomes for those scenarios.

Several factors influenced near-term emissions trajectories and long-term climate outcomes, the authors noted. These include the global turn away from coal to technological advances that made solar panels and electric vehicles relatively cheaper.

Climate change has already caused global temperatures to rise about 1.2°C above pre-industrial levels.

In the past, it has taken thousands of years for temperature to rise by a few degrees, and dramatic changes, from unpredictable swings in India's monsoon to accelerated heating of the oceans, are already occurring as a result of a 1.2°C increase.

Scientists are calling for climate change to be limited as much as possible to avoid triggering cascading and compounding “tipping points” that could limit our ability to contain global heating.

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