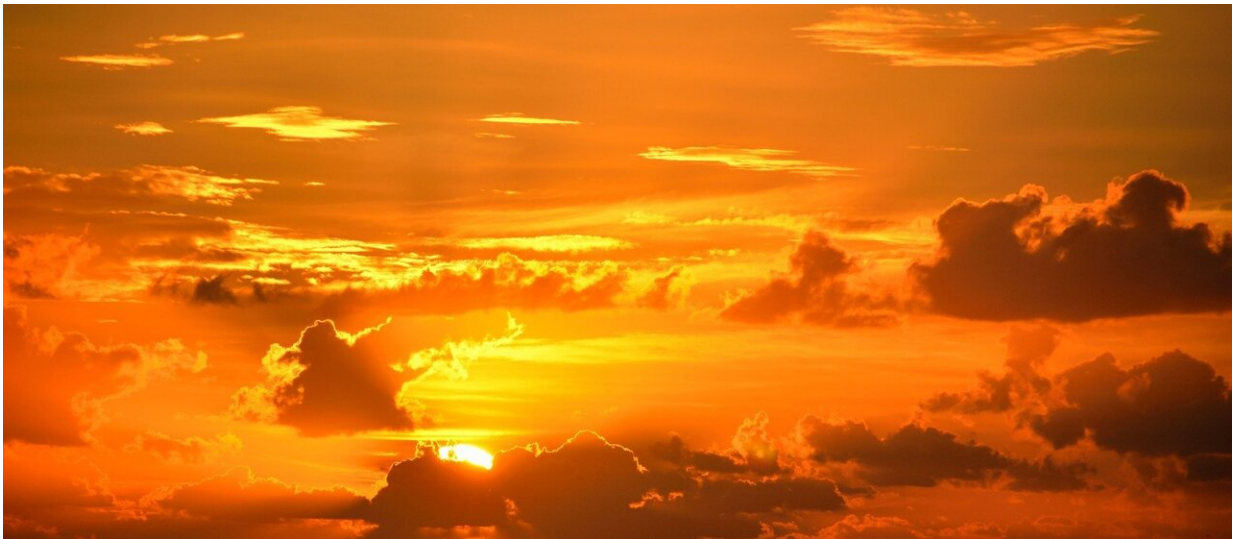


# Earth on track to warm above 2 degrees Celsius despite climate action

October 26 2022, by Laura Millan Lombrana

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Government plans to cut greenhouse gas emissions aren't enough to avoid catastrophic global warming, with the planet on track to heat up between 2.1 and 2.9 degrees Celsius by the end of the century compared to pre-industrial times, according to a new report from the United Nations Framework Convention on Climate Change.

Despite some progress in the last year, governments need to do more by 2030 to ensure that the global temperature increase is below 2C and ideally closer to 1.5C—the goal set in the Paris Agreement reached in

2015. The UNFCCC reached its conclusions by analyzing all national climate plans, also known as nationally-determined contributions or NDCs, submitted since 2015.

"The good news—projections show emissions won't be increasing after 2030," U.N. climate change executive secretary Simon Stiell told reporters on Wednesday. "The bad news—they're still not demonstrating the rapid downward trend scientists say is necessary this decade."

Climate scientists estimate that human-caused [greenhouse gas emissions](#) need to halve by the end of this decade, and to be eliminated by mid-century in order to keep warming below 2C by 2100. While the consequences of planetary heating above that threshold are deemed to be catastrophic, today's warming of 1.1C above [pre-industrial times](#) has already resulted in irreversible changes, according to the latest report from the U.N. Intergovernmental Panel on Climate Change.

Extreme weather events have exposed millions of people to [food insecurity](#) and malnutrition; [heat-related deaths](#) have increased; and climate migration has risen. Agriculture, tourism and fishing are seeing losses. Rich countries that are most responsible for historical CO<sub>2</sub> emissions also have the most resources to adapt, while [poorer countries](#) that have contributed little to climate change face the brunt of the shocks.

If all plans to cut greenhouse gas emissions are fulfilled, global emissions will total 52.4 billion metric tons of carbon dioxide equivalent in 2030, down 0.3% from 2019 levels, indicating that emissions could peak before the end of this decade, the report said. Last year, the UNFCCC estimated emissions would continue rising and reach 54.9 billion metric tons by 2030.

Signatories to the Paris Agreement are increasing their ambitions, but

not fast enough, the UNFCCC analysis shows. Even if all country promises are fulfilled, there would still be an excess of 16 billion metric tons of CO<sub>2</sub> above the threshold required to keep global warming at 2C.

The wide range in the warming estimates—between 2.1C and 2.9C—is due to uncertainty over whether countries can implement their plans. If emissions are not reduced sufficiently by 2030, cuts will need to be much sharper after that date to compensate for the slow start on the path to net zero, the requisite for halting global warming, the UNFCCC report said.

"We're bending the curve on emissions downwards, they are projected to go in the right direction," Stiell said. "But they are not going down enough fast enough, far enough—this is nowhere near the scale of emissions reductions required to put us on track toward a 1.5C world."

A second report by the UNFCCC concluded that emissions could be roughly 68% lower in 2050—compared to 2019 levels—if all plans were implemented. The research, which focused on countries' long-term climate goals, warned that some net zero plans postpone climate action that should take place this decade.

"Nations must strengthen their plans now and implement them in the next eight years," Stiell said. "We're moving forward but moving forward far too slowly—every year is a critical year in this process."

Emissions from the European Union rose 4.8% in 2021, from an exceptionally low level in 2020 due to the lockdowns prompted by the coronavirus pandemic, according to the EU Climate Action Progress Report released on Wednesday. Still, EU emissions last year are down 4% from 2019. That puts the EU on track to achieve its target of cutting emissions 55% by the end of this decade, from 1990 levels, according to the report.

Increasingly ambitious climate promises contrast with the present emissions reality. Atmospheric levels of the three main greenhouse gases—carbon dioxide, methane and nitrous oxide—all reached record highs in 2021, according to a report by the World Meteorological Organization released on Wednesday.

From 2020 to 2021, the increase in levels of CO<sub>2</sub>, the main greenhouse gas emitted through human activities and the primary driver of climate change, was larger than the average annual growth rate over the past decade. Levels continue to rise this year. Methane concentrations in 2021 saw the biggest year-on-year jump since measurements began four decades ago.

"The continuing rise in concentrations of the main heat-trapping gases, including the record acceleration in methane levels, shows that we are heading in the wrong direction," WMO Secretary-General Petteri Taalas said in a statement. "There are cost-effective strategies available to tackle methane emissions, especially from the fossil fuel sector, and we should implement these without delay."

While methane has 28 times greater warming potential than CO<sub>2</sub>, it dissolves in the atmosphere in less than a decade, meaning its impact on climate is reversible if methane emissions are slashed fast, Taalas said. In contrast, CO<sub>2</sub> remains in the atmosphere for centuries, so gases emitted today will continue warming the planet in the future, even if humanity manages to eliminate net emissions within coming decades.

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