

FAST FACTS



Temperature Rise

1. Global surface temperature has increased faster since 1970 than in any other 50-year period over at least the last 2000 years.
2. Based on the global average temperature for the most recent 10-year period (2014-2023), the Earth is now about 1.2°C warmer than it was in the pre-industrial era (1850-1900). 2023 was the warmest year on record, with the global average near-surface temperature 1.45°C above the pre-industrial baseline. The period 2011-2020 was the warmest decade on record for both land and ocean.
3. Monthly and annual breaches of 1.5°C do not mean that the world has failed to achieve the Paris Agreement's temperature goal, which refers to a long-term temperature increase over decades, not individual months or years. Temperatures for any single month or year fluctuate due to natural variability, including El Niño/La Niña and volcanic eruptions. Consequently, long-term temperature changes are typically considered on decadal timescales.
4. On an average day in 2023, nearly one third of the ocean was gripped by a marine heatwave. Over 90 per cent of the ocean experienced heatwave conditions at some point during 2023. Glaciers around the world thinned by an average of one meter per year and sea level rose at a rate of 4.5mm per year between 2011 and 2020. Greenland and Antarctica lost 38 per cent more ice during the period 2011-2020 than during 2001-2010.
5. Every fraction of a degree of warming matters. With every additional increment of global warming, changes in extremes and risks become larger. For example, every 0.1°C increase in global warming causes clearly discernible increases in the intensity and frequency of temperature and precipitation extremes, as well as agricultural and ecological droughts in some regions.
6. Greenhouse gas emissions reached a new record high of 57.4 gigatonnes in 2023. They must drop by 43 per cent by 2030 (compared to 2019 levels) to keep temperature increase from exceeding 1.5°C. Under current national climate plans, the world is on track for a global average temperature rise of 2.5-2.9°C above pre-industrial levels.
7. Greenhouse gas concentrations in the atmosphere, already at their highest levels in 2 million years, have continued to rise. Global concentrations of carbon dioxide are now a full 50 per cent higher than they were in the pre-industrial era.



8. The emissions gap in 2030, or the difference between necessary carbon dioxide reduction and current trends, is estimated at 21-24 gigatons of carbon dioxide equivalent (Gt CO₂e) to limit global warming to 1.5°C.

9. To ensure a safe and liveable planet, experts say humanity must phase out global coal production and use by 2040, and reduce oil and gas production and use by three-quarters between 2020 and 2050.

Sources: [IPCC](#) (1, 5), [WMO](#) (2, 3, 4), [WMO](#) (2, 4), [UNEP](#) (6, 8), [WMO](#) (7) [UNEP](#) (9)

