

MCC Press Release

New data show a worsening of the climate crisis

A “wake-up call” to the pre-COP28 conference in Bonn: 50 scientists, with contributions from MCC, provide an update of global indicators. Innovative info dashboard for the public.

Berlin, 08/06/2023. Human-caused global heating has continued to increase at an “unprecedented rate” since the last major assessment of the climate system published two years ago, say 50 leading scientists. They have developed an open data, open science platform – the “Indicators of Global Climate Change”, which will update information every year. The initiative is being led by the University of Leeds, and supported by the Berlin-based climate research institute MCC (Mercator Research Institute on Global Commons and Climate Change). A study with the first round of data has now been published in the renowned journal *Earth System Science Data*.

“The analysis provides a timely wake-up call that the pace and scale of climate action has been insufficient,” says [Jan Minx](#), head of the MCC working group Applied Sustainability Science, and co-author of the study. It comes as climate experts meet in Bonn to prepare the ground for the major COP28 climate conference in the United Arab Emirates in December, which will include a stocktake of progress towards keeping global heating to 1.5 degrees Celsius (°C) by 2050. “Given the speed at which the global climate system is changing, policymakers, climate negotiators and civil society groups need to have access to up-to-date and robust scientific evidence on which to base decisions.”

The scientists have revealed how key indicators have changed since the Intergovernmental Panel on Climate Change (IPCC) published its Sixth Assessment Working Group 1 report in 2021. The update shows that human-induced global heating, largely caused by the burning of fossil fuels, reached an average of 1.14°C for the most recent decade (2013 to 2022) above pre-industrial levels. This is up from 1.07°C between 2010 and 2019. Human-induced warming is now increasing at a pace of over 0.2°C per decade.

The analysis also found that greenhouse gas emissions were “at an all-time high”, with human activity resulting in the equivalent of 54 gigatonnes of carbon dioxide being released into the atmosphere on average every year over the last decade (2012-2021). [William Lamb](#), researcher at MCC and also a co-author, emphasises: “Despite all discussions around net-zero goals, we have not managed as a global society to peak emissions. Bending the global emissions trajectory downwards and starting an era of global emissions reductions needs to be the key priority for international climate diplomacy.”

The remaining carbon budget, i.e. how much carbon can be released into the atmosphere to give a 50 percent chance of keeping global temperature rise within 1.5°C, is estimated to have been at around 250 gigatonnes of carbon dioxide by the start of 2023 – in 2020, the IPCC had calculated it at around 500

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gigatonnes. (Note: these figures are not comparable with those used in the calculation of the [MCC Carbon Clock](#), where the annual emission rate is CO₂ only, the contribution of other greenhouse gases to global heating is subtracted before calculating the remaining carbon budget, and the budget is calculated with reference to a 67 rather than 50 percent probability of meeting the temperature target.)

Piers Forster, Director of the Priestley Centre for Climate Futures Leeds and lead author of the study, says: “The carbon budget will likely be exhausted in only a few years as we have a triple whammy of heating from very high CO₂ emissions, heating from increases in other greenhouse gas emissions and from reductions in reducing particulate pollution in the air, which has a cooling effect. If we don’t want to see the 1.5°C goal disappearing in our rearview mirror, the world must work much harder at bringing emissions down.”

The research network’s website extends a successful climate dashboard called the Climate Change Tracker which was created by software developers who took ideas from the finance industry on how to present complex information to the public.

Further information:

- The study: Forster, P., Smith, C., Walsh, T., Lamb, W., Lamboll, R., Hauser, M., Ribes, A., Rosen, D., Gillett, N., Palmer, M., Rogelj, J., von Schuckmann, K., Seneviratne, S., Trevin, B., Zhang, X., Allen, M., Andrew, R., Birt, A., Borger, A., Boyer, T., Broersma, J., Cheng, L., Dentener, F., Friedlingstein, P., Gutiérrez, J., Gütschow, J., Hall, B., Ishii, M., Jenkins, S., Lan, X., Lee, J., Morice, C., Kadow, C., Kennedy, J., Killick, R., Minx, J., Naik, V., Peters, G., Pirani, A., Pongratz, J., Schleussner, C., Szopa, S., Thorne, P., Rohde, R., Corradi, M., Schumacher, D., Vose, R., Zickfeld, K., Masson-Delmotte, V., Zhai, P., 2023, Indicators of Global Climate Change 2022: annual update of large-scale indicators of the state of the climate system and the human influence, *Earth System Science Data* <https://doi.org/10.5194/essd-15-2295-2023>
- The data platform “Climate Change Tracker”: <https://climatechangetracker.org/igcc>
- The website “Indicators of Global Climate Change”: <https://www.igcc.earth/>

About MCC

MCC explores and provides solution-oriented policy portfolios for climate mitigation, for governing the global commons in general, and for enhancing the many aspects of human well-being. Our seven working groups are active in fields like economic growth and development, resources and international trade, cities and infrastructure, governance, and scientific policy advice. Co-founded by the Mercator Foundation and the Potsdam Institute for Climate Impact Research. | www.mcc-berlin.net/en | https://twitter.com/MCC_Berlin

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