

World close to ‘irreversible’ climate breakdown, warn major studies

Friday 28 October 2022, by [CARRINGTON Damian](#) (Date first published: 27 October 2022).

Key UN reports published in last two days warn urgent and collective action needed - as oil firms report astronomical profits

The climate crisis has reached a “really bleak moment”, one of the world’s leading climate scientists has said, after a slew of major reports laid bare how close the planet is to catastrophe.

Collective action is needed by the world’s nations more now than at any point since the second world war to avoid climate tipping points, Prof Johan Rockström said, but geopolitical tensions are at a high.

He said the world was coming “very, very close to irreversible changes ... time is really running out very, very fast”.

Emissions must fall by about half by 2030 to meet the internationally agreed target of 1.5C of heating but are still rising, the reports showed - at a time when oil giants are making astronomical amounts of money.

On Thursday, Shell and TotalEnergies both [doubled](#) their quarterly profits to about \$10bn. Oil and gas giants have enjoyed soaring profits as post-Covid demand jumps and after Russia’s invasion of Ukraine. The sector is expected to amass \$4tn in 2022, strengthening calls for heavy windfall taxes to address the cost of living crisis and fund the clean energy transition.

All three of the key UN agencies have produced damning reports in the last two days. The UN environment agency’s report found there was [“no credible pathway to 1.5C in place”](#) and that “woefully inadequate” progress on cutting carbon emissions means the only way to limit the worst impacts of the climate crisis is a “rapid transformation of societies”.

Current pledges for action by 2030, even if delivered in full, would mean a rise in global heating of about 2.5C, a level that would condemn the world to catastrophic climate breakdown, [according to the UN’s climate agency](#). Only a handful of countries have ramped up their plans in the last year, despite having [promised to do so at the Cop26 UN climate summit](#) in Glasgow last November.

The [UN’s meteorological agency reported](#) that all the main heating gases hit record highs in 2021, with an alarming surge in [emissions of methane](#), a potent greenhouse gas.

Separately, the IEA’s world energy report offered a glimmer of progress, that [CO₂ from fossil fuels could peak by 2025](#) as high energy prices push nations towards clean energy, though it warned that it would not be enough to avoid severe climate impacts.

Rockström, director of the Potsdam Institute for Climate Impact Research in Germany, said: “It’s a really bleak moment, not only because of the reports showing that emissions are still rising, so we’re

not delivering on either the Paris or Glasgow climate agreements, but we also have so much scientific evidence that we are very, very close to irreversible changes - we're coming closer to tipping points."

Research by Rockström and colleagues, published in September, found [five dangerous climate tipping points may already have been passed](#) due to the global heating caused by humanity to date, including the collapse of Greenland's ice cap, with another five possible with 1.5C of heating.

"Furthermore, the world is unfortunately in a geopolitically unstable state," said Rockström. "So when we need collective action at the global level, probably more than ever since the second world war, to keep the planet stable, we have an all-time low in terms of our ability to collectively act together."

"Time is really running out very, very fast," he said. "I must say, in my professional life as a climate scientist, this is a low point. The window for 1.5C is shutting as I speak, so it's really tough."

His remarks came after the UN secretary general, António Guterres, said on Wednesday that climate action was "falling pitifully short". "We are headed for a global catastrophe [and] for economy-destroying levels of global heating."

He added: "[Droughts, floods, storms and wildfires](#) are devastating lives and livelihoods across the globe [and] getting worse by the day. We need climate action on all fronts and we need it now." He said the G20 nations, responsible for 80% of emissions, must lead the way.

Inger Andersen, head of the UN environment programme (UNEP), told the Guardian that the energy crisis must be used to speed up delivery of a low-carbon economy: "We are in danger of missing the opportunity and a crisis is a terrible thing to waste."

Prof Corinne Le Quéré, at the University of East Anglia, UK, said: "It is fundamental to avoid cascading risks that responses to existing crises are made in a way that limits climate change to the lowest possible level."

Further reports published in the last two days said the [health of the world's people is at the mercy of a global addiction to fossil fuels](#), with increasing heat deaths, hunger and infectious disease as the climate crisis intensifies.

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In the UK, the government was accused of a [“severe dereliction of duty” in leaving critical UK infrastructure](#) at risk to climate impacts. The new prime minister, Rishi Sunak, will not attend COP27, his spokesman said on Wednesday.

High gas and oil prices delivered huge profits to Shell and TotalEnergies on Wednesday, which [booked \\$9.5bn](#) and [\\$9.9bn](#) respectively. Shell said it would not pay any UK-imposed windfall tax this year as the profits were being offset against investment in North Sea fields.

The fossil fuel industry as a whole amassed \$4tn in 2022, according to another new report from International [Energy Agency](#) (IEA), a sum that could otherwise transform climate action.

The IEA report said: “Net income for the world’s oil and gas producers is set to double in 2022 to an unprecedented \$4tn, a huge \$2tn windfall.” The oil and gas sector has gained an average of [\\$1tn a year in unearned profits](#) for the last 50 years.

The IEA said clean energy investment would have to be at least \$4tn a year by 2030 to hit net zero emissions by mid-century. “If the global oil and gas industry were to invest this [\$2tn] additional income in low-emissions fuels, such as hydrogen and biofuels, it would fund all of the investment needed in these fuels for the remainder of this decade.”

Prof Myles Allen, at the University of Oxford, said: “The combined profits, taxes and royalties generated by the oil and gas industry over the past few months would be enough to capture every single molecule of CO₂ produced by their activities and reinject it back underground. So why are we only talking about transforming society and not about obliging a highly profitable industry to clean up the mess caused by the products it sells?”

“The situation is serious and bleak,” said Prof Simon Lewis, at University College London. “Shell has made £26bn profit this year, carbon emissions are back at pre-pandemic levels, while 53,000 people died of heat stress in Europe in the summer, and floods have displaced millions from Nigeria to Pakistan. The solution is to do everything we can to defeat the fossil fuel industry - they stand between us all and a prosperous future.”

Rockström was pessimistic about any breakthrough in the speed of climate action at the Cop27 climate summit, which he said would be dominated by nations such as Pakistan demanding funding to rebuild their countries after climate disasters. Rich, high-emitting nations have long rejected such claims, fearing unlimited liabilities.

“This is a necessary discussion,” Rockström said. “But it leads to a deeper rift between the global north and the south. And that’s exactly what we do not need now.”

Video: ‘Like something you watch in a movie’: climate crisis intensifies with catastrophic floods

But he said progress could be made within a few years: “The Ukraine war is the nail in the coffin for the fossil-fuel-driven advanced economies. In the short term, it costs us a lot and we lose speed on climate action.” But in the longer term, he said, the energy and food crises add national security to the planetary and health reasons for climate action.

Prof Michael Mann, at the University of Pennsylvania in the US, said it was important to note that progress was being made: “More work clearly needs to be done if warming is to be kept below 1.5C, but nobody foresaw the major policy progress in recent months in both Australia and the US. It is estimated that the US legislation will lower national emissions by 40% this decade. With US

leadership, we can expect other major emitters to now come to the table at Cop27.”

Climate experts agree that every action that limits global heating reduces the suffering endured by people from climate impacts. “The 1.5C target is now near impossible, but every fraction of a degree will equate to massive avoided damages for generations to come,” said Prof Dave Reay, at the University of Edinburgh, UK.

Röckstrom said: “Despite the fact that the situation is depressing and very challenging, I would strongly advise everyone to act in business or policy or society or science. The deeper we fall into the dark abyss of risk, the more we have to make efforts to climb out of that hole. It’s not as if we don’t know what to do – it’s rather that we’re not doing what is necessary.”

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P.S.

- The Guardian. Thu 27 Oct 2022 18.37 BST:
<https://www.theguardian.com/environment/2022/oct/27/world-close-to-irreversible-climate-breakdown-warn-major-studies>

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