

Why Cop29 could be the key to delivering true net zero

Patrick Greenfield in Baku, Azerbaijan

There can be no net zero without nature. Each year, the planet's oceans, forests, soils and other natural carbon sinks [absorb about half of all human emissions](#). They feature in dozens of national plans to limit global heating to below 2C. This week, however, the scientific architects of net zero have a warning: you have misunderstood mother nature's role in our plan.

[On Monday in the journal Nature](#), the researchers who developed the concept in 2009 say that vague net zero definitions could mean that the world only ends up meeting the target on paper while the planet continues to warm. By including naturally occurring carbon removals from forests, oceans and other natural sources as if they were human-caused in national plans, the scientists say that countries could, in effect, “cheat” their way to towards Paris agreement targets.

“We are already counting on forests and oceans to mop up our past emissions, most of which came from burning stuff we dug out of the ground. We can't expect them to compensate for future emissions as well,” says Oxford professor Myles Allen, who led the study.

As Cop29 in Baku enters its second week, the researchers are urging governments at the summit to clarify their definition of net zero, underscoring the need for “geological net zero”.

What would that actually mean? And how would we do it? More, after today's most important reads.

Under the “true” net zero definition, the natural world's vast carbon-absorbing capabilities must only be put to work to remove historical emissions so that the planet can slowly cool over time, the net zero researchers say – not to cancel out future fossil fuel pollution.

“It is a common assumption that removing carbon from the atmosphere to offset burning of fossil fuels is as effective as not burning fossil fuels in the first place. It is not. Offsetting continued fossil fuel use with carbon removal will not be effective if the removal is already being counted on as part of the natural carbon cycle and if the carbon is not permanently stored,” says Prof Kirsten Zickfeld of Canada's Simon Fraser University, a co-author and leader of one of the 2009 net zero papers.

The intervention comes at a time of increasing concern about the Earth's carbon sinks, one of the least understood parts of the climate change equation. During record temperatures in 2023, [new research shows](#) that the amount of carbon absorbed by the land fell dramatically

due to wildfires and drought turbocharged by El Niño. Many European countries – including Finland, Germany, France, Estonia and Sweden – are experiencing large declines in their land sinks, imperilling their national climate targets in some cases. This is giving researchers cause for concern.

“Unrealistically optimistic estimates of land-based removal potential by climate models is giving us a false sense of the capacity for land to absorb our future emissions, potentially locking us into scenarios where we greatly overshoot our temperature targets – which comes with various risks and uncertainties,” says Joanne Bentley, an analyst for Zero Carbon Analytics, who has recently reviewed how nature is being used to meet the Paris agreement.

Zero Carbon Analytics found that countries are using different methods for reporting their land-based carbon removal to the Intergovernmental Panel on Climate Change, making countries appear to be further ahead of climate progress than they truly are. When harmonised, the budget for limiting warming falls by as much as 18%, they say.

“How land is classified in national climate commitments is a critical blind spot in carbon accounting. It allows vast emissions from wildfires and natural disturbances in forests to go uncounted, ultimately misrepresenting progress towards climate goals,” Bentley explains. “This is especially problematic when governments over-rely on forests to absorb emissions instead of making the immediate, large-scale changes to industries that are urgently needed.”

World's 1.5C climate target 'deader than a doornail', experts say

https://www.theguardian.com/environment/2024/nov/18/climate-crisis-world-temperature-target?utm_term=673c7dcfce9fbefae49ef76824826d5&utm_campaign=DownToEarth&utm_source=esp&utm_medium=Email&CMP=greenlight_email

Scientists say goal to keep world's temperature rise below 1.5C is not going to happen despite talks at Cop29 in Baku

[Oliver Milman](#)

Mon 18 Nov 2024 12.00 CET

The internationally agreed goal to keep the world's temperature rise below 1.5C is now "deader than a doornail", with 2024 almost certain to be the first individual year above this threshold, climate scientists have gloomily concluded – even as world leaders gather for climate talks on how to remain within this boundary.

Three of the five leading research groups monitoring global temperatures [consider](#) 2024 on track to be at least 1.5C (2.7F) hotter than pre-industrial times, underlining it [as the warmest year on record](#), beating a mark set just last year. The past 10 consecutive years have already been the hottest 10 years ever recorded.

Although a single year above 1.5C does not itself spell climate doom or break the 2015 Paris agreement, in which countries agreed to strive to keep the long-term temperature rise below this point, scientists have warned this aspiration has in effect been snuffed out despite the exhortations of leaders currently gathered at a United Nations climate summit in Azerbaijan.

"The goal to avoid exceeding 1.5C is deadlier than a doornail. It's almost impossible to avoid at this point because we've just waited too long to act," said Zeke Hausfather, climate research lead at Stripe and a research scientist at Berkeley Earth. "We are speeding past the 1.5C line an accelerating way and that will continue until global emissions stop climbing."

Last year was so surprisingly hot, even in the context of the climate crisis, that it caused "some soul-searching" among climate scientists, Hausfather said. In recent months there has also been persistent heat despite the fading of El Niño, a periodic climate event [that exacerbated temperatures](#) already elevated by the burning of fossil fuels.

"It's going to be the hottest year by an unexpectedly large margin. If it continues to be this warm it's a worrying sign," he said. "Going past 1.5C this year is very symbolic, and it's a sign that we are getting ever closer to going past that target."

Climate scientists broadly expect it will become apparent the 1.5C target, agreed upon by governments after pleas from vulnerable island states that they risk being wiped out if temperatures rise further than this, has been exceeded within the coming decade.

Despite countries [agreeing](#) to shift away from fossil fuels, this year is [set to hit a new record for planet-heating emissions](#), and even if current national pledges are met the world is on

track for 2.7C (4.8F) warming, risking disastrous heatwaves, floods, famines and unrest. “We are clearly failing to bend the curve,” said Sofia Gonzales-Zuñiga, an analyst at Climate Analytics, which helped produce the Climate Action Tracker (Cat) [temperature estimate](#).

However, the Cop29 talks in Baku have maintained calls for action to stay under 1.5C. “Only you can beat the clock on 1.5C,” António Guterres, secretary general of the UN, urged world leaders on Tuesday, while also [acknowledging](#) the planet was undergoing a “masterclass in climate destruction”.

Yet the 1.5C target now appears to be simply a rhetorical, rather than scientifically achievable, one, bar massive amounts of future carbon removal from [as-yet unproven technologies](#). “I never thought 1.5C was a conceivable goal. I thought it was a pointless thing,” said Gavin Schmidt, a climate scientist at Nasa. “I’m totally unsurprised, like almost all climate scientists, that we are shooting past it at a rapid clip.

You shouldn’t ask scientists how to galvanize the world because clearly we don’t have a fucking clue

Gavin Schmidt

“But it was extremely galvanizing, so I was wrong about that. Maybe it is useful; maybe people do need impossible targets. You shouldn’t ask scientists how to galvanize the world because clearly we don’t have a fucking clue. People haven’t got a magic set of words to keep us to 1.5C, but we have got to keep trying.

“What matters is we have to reduce emissions. Once we stop warming the planet, the better it will be for the people and ecosystems that live here.”

The world’s decision-makers who are collectively failing to stem dangerous global heating will soon be joined by Donald Trump, [who is expected to tear down climate policies](#) and thereby, the Cat report estimates, add at least a further 0.04C to the world temperature.

Despite this bleak outlook, some do point out that the picture still looks far rosier than it did before the Paris deal, when a catastrophic temperature rise of 4C or more was foreseeable. Cheap and abundant clean energy is growing at a [rapid pace](#), with peak oil demand [expected](#) by the end of this decade.

“Meetings like these are often perceived as talking shops,” said Alexander De Croo, the Belgian prime minister, at the [Cop29](#) summit. “And yes, these strenuous negotiations are far from perfect. But if you compare climate policy now to a decade ago, we are in a different world.”

Still, as the world barrels past 1.5C there lie alarming uncertainties in the form of runaway climate “[tipping points](#)”, which once [set off](#) cannot be halted on human timescales, such as the Amazon turning into a savanna, the collapse of the great polar ice sheets, and huge pulses of carbon released from melting permafrost.

“1.5C is not a cliff edge, but the further we warm up the closer we get to unwittingly setting off tipping points that will bring dramatic climate consequences,” said Grahame Madge, a climate spokesman at the UK Met Office, who added that it would now be “unexpected” for 2024 to not be above 1.5C.

“We are edging ever closer to tipping points in the climate system that we won’t be able to come back from; it’s uncertain when they will arrive, they are almost like monsters in the darkness,” Madge said.

“We don’t want to encounter them so every fraction of a degree is worth fighting for. If we can’t achieve 1.5C, it will be better to get 1.6C than 1.7C, which will be better than getting 2C or more.”

Hausfather added: “We aren’t in for a good outcome either way. It’s challenging. But every tenth of a degree matters. All we know is that the more we push the climate system [away from where it has been](#) for the last few million years, there be dragons.”

It is feasible': climate finance won't burden rich countries, say economists

Experts say mix of taxes with development bank and private funding can provide \$1tn a year needed by 2030

[*Fiona Harvey*](#) in Baku

Tue 19 Nov 2024 07.00 CET

Raising [money needed to tackle the climate crisis](#) need not be a burden on overstretched government budgets, leading economists have said.

The sums needed – approximately \$1tn a year by 2030 – are achievable without disruption to the global economy, and would help to generate greener economic growth for the future.

Amar Bhattacharya, a senior fellow at the Brookings Institution, and a visiting professor at the London School of Economics, who is the executive secretary of the UN's independent high-level expert group (IHLEG) on climate finance, said: "Is it feasible? The answer is absolutely yes. Is it politically challenging? The answer is also yes. But I do believe it can be done."

Without such investment, the world faces a future of economic damage, rampant inflation and the reversal of gains made in recent decades to pull poor countries out of destitution, the UN has warned.

Simon Stiell, the UN's climate chief, said: "When nations can't climate-proof their links in global supply chains, every nation in an interconnected global economy pays the price. And I mean literally pays the price, in the form of higher inflation, especially in food prices, as savage droughts, wildfires and floods rip through food production."

The governments of nearly 200 countries are wrangling over how to channel the funds needed to help poor nations cut their greenhouse gas emissions and cope with the impacts of extreme weather. But the two-week Cop29 summit, in Azerbaijan's capital of Baku, which is scheduled to end this Friday, has been [deadlocked for several days](#) as rich countries have so far refused to say exactly how much they are willing to contribute to the sums needed.

Well-established research suggests that about \$1tn a year in climate finance to the poor world will be needed by 2030 to meet the core goal of the Paris agreement, to limit global heating to 1.5C above preindustrial levels. This cost will rise to about \$1.3tn a year by 2035, according to a recent update published by the IHLEG, made up of leading global economists.

Not all of this needs to come from the governments of rich countries, however. About half should come from the private sector, which can fund projects such as building solar and windfarms in developing countries, according to the IHLEG. About a quarter of the \$1tn should come from multilateral development banks, such as the World Bank, that are ultimately funded by the rich world. About \$80-100bn should come directly from rich countries in the form of aid – roughly double the current quantity. The remainder could come mostly from new sources of finance such as taxes on fossil fuels, frequent flyers or shipping.

The sums seem large, conceded Nicholas Stern, the economist and co-chair of the IHLEG, but they are not when put in the context of the global economy, of which \$1tn is only about 1% a year. According to the International Energy Agency, the world already spends more than \$3tn a year on energy, of which two-thirds is on renewables and clean forms of power. Global pension assets add up to approximately \$56tn.

Developing countries also already spend many hundreds of billions on their own green infrastructure, on making their societies and economies more resilient to the impacts of the climate crisis, and on rescuing communities when disaster hits.

Achim Steiner, the head of the UN development programme, said: “Developing countries are actually investing hundreds of billions of dollars a year already, from their own taxpayers’ revenue, in climate action. It wouldn’t hurt anyone on the other side of the table to acknowledge that.”

According to the IHLEG, the overall cost of shifting all of the world’s developing countries excluding China on to a low-carbon path would come to \$2.4tn, of which the \$1tn only describes the amount needed from external sources – the rest would come from the countries’ existing domestic budgets.

Some civil society groups are concerned about the inclusion of private sector investment in the “new collective quantified goal” (NCQG) – the name given to the global settlement on climate finance that countries must agree on in Baku. There are also concerns among developing countries that relying on private sector finance will drive them deeper into debt.

Lidy Nacpil, the coordinator of the Asian Peoples’ Movement on Debt and Development, said: “To deliver climate finance through loans not only contradicts the principle of acknowledging historical responsibility, it is deeply unjust to force impoverished countries to go deeper in debt to address the climate emergency. It is not enough that the amount of climate finance is adequate. The \$5tn a year that the global south is owed should be public, non-debt-creating, new and additional, and delivered without conditionalities.”

However, it seems unlikely that developed countries will stump up such sums. Economists spoken to by the Guardian said that recruiting the private sector to build green infrastructure – such as wind and solar farms, electric vehicles, low-carbon transport and other amenities – made sense, as these were activities that turned a profit and were thus able to attract investment.

Many poorer countries have difficulty attracting private sector investment or are forced to pay a high price for it, because they are perceived to be high risk. Setting up a solar farm in Africa can cost three times as much as doing so in Europe, even though much more energy would be generated in Africa.

Developed countries can play an important role in reducing this perception, and thus reducing the cost of capital to the poor, usually for very little outlay, for instance by providing loan guarantees. Measures like this should also be part of the NCQG, several economists told the Guardian, though it may be harder to quantify than standard definitions of overseas aid.

Private investors also tend to shun projects that help countries adapt to the impacts of the climate crisis, such as droughts, floods and heatwaves. For this reason, several influential

figures believe that the portion of the \$1tn that comes directly from developed country budgets, and preferably in the form of grants rather than loans, should be mostly or entirely devoted to adaptation projects, rather than carbon reduction efforts.

Avinash Persaud, a former economic adviser to the prime minister of Barbados, Mia Mottley, who is now special adviser to the president of the Inter-American Development Bank, said: “Using public funds to finance adaptation is pragmatic. About \$300bn a year would cover adaptation.”

Patrick Verkooijen, the chief executive of the Global Center on Adaptation, said: “Adaptation is underfunded and directing public resources from the developed world to this would make a big difference, and make sense – it would improve the stability of the countries involved.”