

IPCC report: ‘now or never’ if world is to stave off climate disaster

Greenhouse gas emissions must peak by 2025, say climate scientists in what is in effect their final warning

Analysis: IPCC spells out what’s needed to avert climate disaster

What does the IPCC report say?



Flooded streets in New South Wales, Australia, last month. Photograph: Jason O'Brien/AAP

Fiona Harvey *Environment correspondent*

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The world can still hope to stave off the worst ravages of climate breakdown but only through a “now or never” dash to a low-carbon economy and society, scientists have said in what is in effect a final warning for governments on the climate.

Greenhouse gas emissions must peak by 2025, and can be nearly halved this decade, according to the Intergovernmental Panel on Climate Change (IPCC), to give the world a chance of limiting future heating to 1.5C above pre-industrial levels.

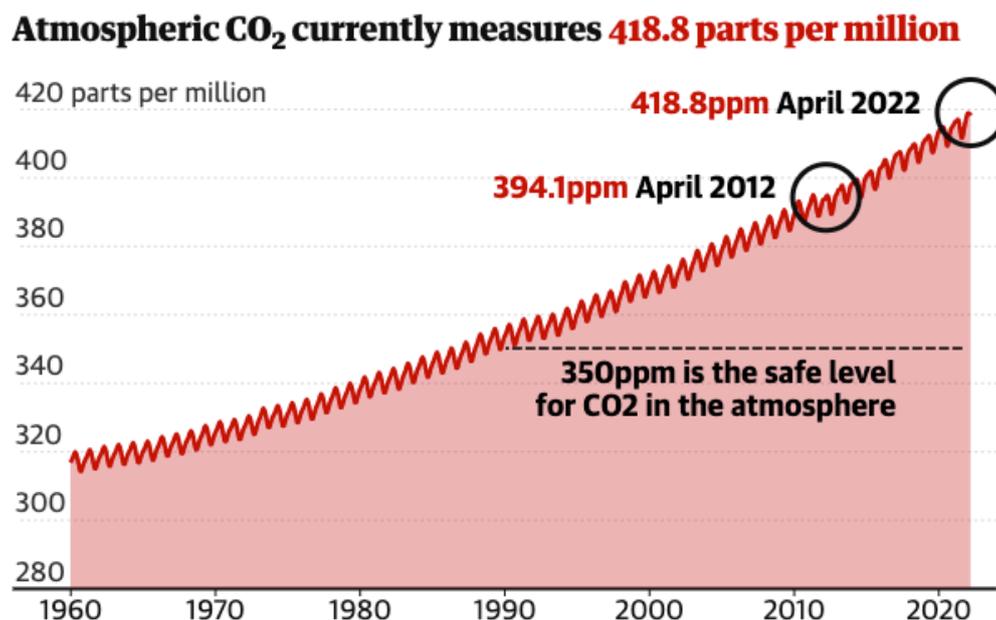
It's over for fossil fuels: IPCC spells out what's needed to avert climate disaster

The final cost of doing so will be minimal, amounting to just a few percent of global GDP by mid-century, though it will require a massive effort by governments, businesses and individuals.

But the chances were narrow and the world was **failing to make the changes needed**, the body of the world's leading climate scientists warned. Temperatures will soar to more than 3C, with catastrophic consequences, unless policies and actions are urgently strengthened.

Jim Skea, a professor at Imperial College London and co-chair of the working group behind the report, said: "It's now or never, if we want to limit global warming to 1.5C. Without immediate and deep emissions reductions across all sectors, it will be impossible."

The report on Monday was the third and final section of the IPCC's latest comprehensive review of climate science, drawing on the work of thousands of scientists. IPCC reports take about seven years to compile, making this potentially the last warning before the world is set irrevocably on a path to climate breakdown.



Guardian graphic. Source: NOAA, updated on 3 April 2022. Chart baseline is 280ppm - the preindustrial average.

Though the report found it was now “almost inevitable” that temperatures would rise above 1.5C – the level above which many of the effects of climate breakdown will become irreversible – the IPCC said it could be possible to bring them back down below the critical level by the end of this century. But doing so could require technologies to remove carbon dioxide from the atmosphere, which campaigners warned were unproven and could not be a substitute for deep emissions cuts now.

The UN secretary general, António Guterres, said some governments and businesses were “lying” in claiming to be on track for 1.5C. In a strongly worded rebuke, he warned: “Some government and business leaders are saying one thing – but doing another. Simply put, they are lying. And the results will be catastrophic.”

Soaring energy prices and the war in Ukraine have prompted governments to rethink their energy policies. Many countries – including the US, the UK and the EU – are **considering ramping up fossil fuels** as part of their response, but the IPCC report made clear that increasing fossil fuels would put the 1.5C target beyond reach.

Guterres said: “Inflation is rising, and the war in Ukraine is causing food and energy prices to skyrocket. But increasing fossil fuel production will only make matters worse.”

John Kerry, the US special presidential envoy for climate, called the report “a defining moment for our planet” and warned governments must move faster. “The report tells us that we are currently falling short in our battle to avoid the worst consequences of the climate crisis and mobilise the urgent global action needed. But importantly, the report also tells us we have the tools we need to reach our goals, cut greenhouse gas emissions in half by 2030, reach net zero by 2050, and secure a healthier, cleaner planet,” he said.

The IPCC working group 3 report found:

- Coal must be effectively phased out if the world is to stay within 1.5C, and currently planned new fossil fuel infrastructure would cause the world to exceed 1.5C.

- Methane emissions must be reduced by a third.
- Growing forests and preserving soils will be necessary, but tree-planting cannot do enough to compensate for continued emissions for fossil fuels.
- Investment in the shift to a low-carbon world is about six times lower than it needs to be.
- All sectors of the global economy, from energy and transport to buildings and food, must change dramatically and rapidly, and new technologies including hydrogen fuel and carbon capture and storage will be needed.

Pete Smith, a professor of soils and global change at Aberdeen University, said: “The time of reckoning is now. We have one decade to get on track. We use fossil fuels in all these things that we need to change.”

Poor countries warned they were ill-equipped to make the changes needed and required financial assistance from richer nations to cut emissions and help them adapt to the impacts of the climate crisis. Madeleine Diouf Sarr, the chair of the least developed countries group at the UN climate talks, said: “There can be no new fossil fuel infrastructure. The emissions from existing and planned infrastructure alone are higher than scenarios consistent with limiting warming to 1.5C with no or limited overshoot. We cannot afford to lock in the use of fossil fuels.”

Catherine Mitchell, a professor emerita of energy policy at Exeter University, said the needs of the poorest countries must be prioritised. “Unless we have social justice, there are not going to be more accelerated greenhouse gas reductions. These issues are tied together.”

Publication of the report was **delayed by a few hours** as governments wrangled with scientists in marathon sessions, culminating late on Sunday night, over the final messages in the 63-page summary for policymakers. While **IPCC reports are led by scientists**, governments have input on the final messages in the summary for policymakers.

The Guardian understands that governments including India, Saudi Arabia and China questioned messages including on financing emissions reductions in the

developing world and phasing out fossil fuels. However, scientists stressed that the final summary was agreed by all 195 governments.

This was the third instalment of the IPCC's sixth assessment report, covering ways of reducing emissions. It follows a first section published last August that warned **human changes to the climate were becoming irreversible**; and a second section published at the end of February warning of **catastrophic impacts**.

Final warning: what does the IPCC's third report instalment say?

Explainer: Key points from the final section of the IPCC's latest review of climate science



Lifestyle changes such as eating less meat will be needed to reduce methane, the IPCC says. Photograph: MilosCirkovic/Getty Images/iStockphoto

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What does IPCC working group 3 say?

The world has only a narrow chance of limiting global heating to 1.5C above pre-industrial levels, and is falling far behind on making the changes needed to transform the global economy to a low-carbon footing.

Overshooting 1.5C is now “almost inevitable”, but the overshoot could be temporary and temperatures could be returned to 1.5C by the end of this century if countries seek to reduce greenhouse gas emissions drastically this decade.

Technologies such as carbon dioxide removal are also likely to be needed, to limit and reduce carbon dioxide concentrations in the atmosphere, and the world must reach net zero emissions by 2050.

What about fossil fuels?

The world is planning far too many new coal-fired power plants, gas installations, and other fossil fuel infrastructure to stay within the carbon budgets needed to meet the 1.5C goal. While the Intergovernmental Panel on Climate Change (IPCC) holds open the door to technologies such as carbon capture and storage that could be used to neutralise emissions from new power plants, it makes it clear that the only realistic scenarios for keeping within 1.5C in the long term involve effectively phasing out coal use.

What about tree planting?

Preserving the world's existing forests, peatlands and other natural carbon stores must be a priority, and growing new forests and restoring soils and landscapes will be essential. But no amount of tree planting will be enough to cancel out the effects of continued fossil fuel emissions.

Is it possible to take carbon dioxide out of the air?

Carbon capture and storage (CCS) is the name given to technologies that take carbon dioxide from major sources, such as fossil fuel power plants, and then liquefy the gas to be pumped underground for long-term storage, for instance in depleted oil or gas fields. This technology is likely to be expensive, and though it has been discussed for two decades, is currently only used at a small scale.

Another form of technology is direct air capture, which involves removing carbon from the atmosphere by chemical means. These technologies are experimental and in the early stages of development.

As the IPCC found that exceeding 1.5C was “almost inevitable”, these “negative emissions” technologies are likely to be necessary to ensure that any temperature overshoot is temporary. But the IPCC was also clear that they cannot substitute for ending our dependence on fossil fuels now.

Robert Gross, as professor of energy policy at Imperial College London and director of the UK Energy Research Centre, said: “We will need not just net zero but to start to remove CO₂ from the air. We cannot do one instead of the other, but we have reached the point where it is likely that humanity will need to do both to avoid dangerous climate change.”

Will we need to change our lifestyles?

Yes. The IPCC has made it clear that everything will need to change: energy, buildings, transport, food and industry. This will include “demand management”, or reducing our consumption and demand for energy-intensive goods. Dietary changes, especially eating less meat, will be needed to reduce methane in particular. But there are vast inequalities in consumption – the 10% of biggest emitters account for a disproportionate amount of global emissions, and these people could still enjoy comfortable and even luxurious lifestyles while reducing their environmental impact.

Daniela Schmidt, a professor at the School of Earth Sciences at the University of Bristol, said: “A small minority of 10% of the people on this planet are producing between 34% and 45% of the global carbon emissions, which is a staggering number. Per capita consumption is a strong expression of decisions of the few impacting the many which are often also the most vulnerable to climate change impacts.”

Will it cost a lot?

Investment is currently falling far short of the sums needed to transform the global economy, but the cost of most of the key technologies needed has plummeted in recent years, by as much as 85% for renewable energy.

Investment must be increased at least sixfold to make the changes needed, but the costs will be manageable: by 2050, the costs will amount to a few percentage points of global GDP, and this does not take account of the sizeable additional benefits, in health and wellbeing.

Why is this working group 3?

This is the third instalment of the IPCC's sixth assessment report since 1988, covering ways of reducing greenhouse gas emissions. It follows a **first section published last August** that warned human changes to the climate were becoming irreversible; and a second section published at the end of February warning of **catastrophic impacts**.

What will be the impact of the IPCC report?

Governments will meet in Egypt this November to discuss ratcheting up their targets on cutting greenhouse gas emissions, in line with a 1.5C target, having failed to reach the effort required at last year's Cop26 summit in Glasgow. But they will face a world riven by war and geopolitical tension from the war in Ukraine, scarred by soaring energy and food prices and fears of rampant inflation. The UN and the hosts of Cop27 are hoping governments will keep prioritising the climate amid these pressing concerns.

Egypt's foreign minister, Sameh Shoukry, made a joint statement with the UN's climate chief, Patricia Espinosa, and Alok Sharma, the UK cabinet minister who presided over Cop26. They called on governments to put new targets and policies in place: "Despite the urgency of our task, there is hope. The window for action has not yet closed. The report highlights that the falling costs of renewables and green technologies present significant opportunities for progress. There is also clear evidence that – with timely and at scale cuts to emissions – countries can pursue a mitigation pathway consistent with limiting global warming as envisaged in the Paris agreement and further reflected in the Glasgow climate pact, while also developing their economies through a just transition and in a sustainable way. Increasingly, transitioning to a low carbon and resilient economy is the safest and most competitive choice any country, business or investor can make."