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Media Briefing

IPCC AR6 REPORT

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Summary

The world’s leading climate scientists have just released their assessment of the climate emergency and ways to deal with it.

It’s a crucial report delivered at a crucial moment in time, when governments are [taking stock](#) of their action under the Paris Agreement. And in short, the verdict of the scientists is this:

Climate change is a threat to human well-being and planetary health. The climate commitments of countries around the globe are not enough, with current commitments making it likely we will exceed 1.5°C at least temporarily during the 21st century.

However there are pathways to get emissions back down, and there is a rapidly closing window of opportunity to secure a liveable and sustainable future for all.

Key findings from the report

- **Projected CO2 emissions from existing fossil fuel infrastructure without additional abatement would exceed the remaining carbon budget for 1.5°C (B.5)**
- Global GHG emissions in 2030 implied by nationally determined contributions (NDCs) announced by October 2021 make it **likely that warming will exceed 1.5°C during the 21st century and make it harder to limit warming below 2°C.**

- However, in certain scenarios and pathways, **global warming declines back to below 1.5°C by the end of the 21st century.** (B.1.1) {Cross-Section Boxes 1 and 2, 3.1.1, 3.3.4, Table 3.1, 4.3} (Box SPM.1)(A.4)
- All global modelled pathways that **limit warming to 1.5°C with no or limited overshoot, and those that limit warming to 2°C, involve rapid and deep and, in most cases, immediate greenhouse gas emissions reductions** in all sectors this decade (B.6)
- **Continued greenhouse gas emissions will lead to increasing global warming,** with the best estimate of reaching 1.5°C in the near term in considered scenarios and modelled pathways. (B.1)
- **Current scenarios and pathways have us on track for a range from 1.4°C for the very low emissions scenario through to 4.4°C** for the very high emissions scenario by the end of the century. (B.1.1)
- Every increment of global warming will intensify multiple and concurrent hazards (B.1.1)
- **Deep, rapid, and sustained reductions in greenhouse gas emissions would lead to a discernible slowdown in global warming** within around two decades (B.1.1)
- Climate change is a threat to human well-being and planetary health, but there is **a rapidly closing window of opportunity** to secure a liveable and sustainable future for all (C.1)
- For any given future warming level, **many climate-related risks are higher than previously assessed,** and projected long-term impacts are up to multiple times higher than currently observed (B.2)
- **Rapid and far-reaching transitions across all sectors and systems are necessary** to achieve deep emissions reductions and secure a liveable and sustainable future for all.(C.3)
- The systemic change associated with rapid and deep emissions reductions and transformative adaptation to climate change is **unprecedented in terms of scale, but not necessarily in terms of speed** (C.3.1)

1.5 is still alive

Greenpeace Australia Pacific is leading a solutions-driven approach to the findings of the AR6 report. This report is clear that:

- **The Paris Agreement Long-Term Goal of limiting 1.5 degrees of warming is absolutely still achievable**
- Yes, global warming is likely to reach 1.5°C in the near future if it continues to increase at the current rate
- But it can gradually be brought back down again and this report supports that, with the temporary period above 1.5 referred to as “overshoot”
- **Temporary overshoot of 1.5 does not mean the Paris agreement long-term goal is lost, and the scale and duration of overshoot can be limited with immediate emissions reductions, nature restoration, and carbon removal**
- What matters at this point is whether we stop at 1.5 and head for some cooling by the end of the century, or whether we just rocket right through it
- **There are still pathways to the Paris Agreement long-term goal** of limiting warming below 1.5 degrees by 2100

- **Our best bet to lower the probability and duration of a temporary overshoot is to lower emissions as quickly as possible.**

1.5 - What does the science say?

The United Nations Intergovernmental Panel on Climate Change (IPCC) is the global authority and final word on climate science. Some reports by other scientific bodies may differ somewhat in their findings regarding 1.5, but the IPCC comprises the top climate and policy experts in the world, who assess the broadest body of existing science - often into the tens of thousands of scientific studies - and issues the most authoritative reports on climate science.

Each 6-8 years, the IPCC goes through an assessment cycle, which includes a number of reports comprising the most up-to-date climate science, emissions data and projections, and modelling. Within this assessment cycle, a number of reports are compiled on various fields such as the six that have gone into this most recent cycle:

- The Special Report into 1.5 ([SR15](#))
- The Special Report into Oceans and Cryosphere ([SROCC](#))
- The Special Report into Land Use, Land Use Change and Forestry ([SRL](#))
- Working Group 1 - The Physical Science Basis ([WG1](#))
- Working Group 2 - Impacts, Adaptation and Vulnerability ([WG2](#))
- Working Group 3 - Mitigation of Climate Change ([WG3](#))

1.5 - Scenario and pathway modelling

The IPCC has assessed more than 1000 modelled emission pathways and categorised them according to projected global warming levels.

These assess the climate response to five scenarios that cover the range of possible outcomes based on different emissions scenarios. These are discussed in Box SPM 1 in the AR6 Summary for Policymakers.

They start in 2015, and include scenarios with:

- high and very high greenhouse gas (GHG) emissions and CO2 emissions that roughly double from current levels by 2100 and 2050
- scenarios with intermediate GHG emissions and CO2 emissions remaining around current levels until the middle of the century
- scenarios with very low and low GHG emissions and CO2 emissions declining to net zero around or after 2050, followed by varying levels of net negative CO2 emissions

What we see in this report is that pathways still exist that limit warming to 1.5°C with more than 50% likelihood, and with little (0.1°C) to no overshoot.

Confusing headlines

These pathways are still on the table, and nothing has changed throughout the assessment cycle to indicate otherwise.

What can often confuse people is the sections of the reports that discuss when 1.5 will be reached. Section B.1.1 in the Summary for Policymakers states “In the near term, global warming is more likely than not to reach 1.5°C even under the very low GHG emission scenario, and and likely or very likely to exceed 1.5°C under higher emissions scenarios.”

But it goes on to state that “global warming declines back to below 1.5°C by the end of the 21st century in some scenarios and modelled pathways”

A temporary overshoot is just that - temporary

This is important to highlight because **a temporary breach of 1.5 does not mean that the Paris Agreement is gone**, as some media and commentators have previously reported.

[The Paris Agreement](#) states that parties agree to:

[Hold] the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.

Temporary overshoot with temperatures stabilising at 1.4 degrees per the very low GHG emissions scenario is still in line with the long-term goal of the Paris Agreement.

Emissions peaking

In order to meet the Paris Agreement long-term goal with at least 50% certainty and without having to rely on large-scale carbon dioxide removal, emissions must peak as soon as possible, and by 2030 we should be aiming for global emissions to be halved.

The message on emissions peaking from the IPCC Working Group 3 report has been misinterpreted previously. This report states, in section B.6.1:

Global GHG emissions are projected to peak between 2020 and at the latest before 2025 in global modelled pathways that limit warming to 1.5°C (>50%) with no or limited overshoot and in those that limit warming to 2°C (>67%) and assume immediate action. (high confidence)

This does not mean we'd have the luxury of peaking as late as 2025. It [only means](#) that when the model results are assessed in five-year intervals, the immediate need for emissions to reach their peak lands in the period we're at right now (2020-2025).

There is no scenario in the WG3 assessment which informs this section of the AR6 that peaks as late as 2025 and still reaches 1.5°C with little to no overshoot and at least 50% likelihood.

In fact, scenarios consistent with 1.5°C with no or limited overshoot show a strong **reduction** in emissions from 2019 to 2025 already, [most with over a 20% reduction by 2025](#).

Global emissions must peak immediately, not by 2025. If they keep growing for yet another three years, the Paris Agreement long-term goal of 1.5°C slips further away.

For further reading see this piece by the BBC: [Key UN finding widely misinterpreted](#)

Carbon removal

The report is clear that Carbon Dioxide removal (CDR) should not substitute deep, rapid, and sustained emission reductions.

Rather, it complements emissions reductions in three ways:

- lowering net emissions in the near-term
- counterbalancing ‘hard-to-abate’ residual emissions to help reach net-zero
- achieving net negative emissions in the long-term

The AR6 provides clear warnings about the potential for large-scale CDR to cause harmful impacts. Nevertheless, most IPCC scenarios rely on large-scale CDR to limit end-of-century warming. This is partly a result of how integrated assessment models are designed, as well as reflecting the difficulty of the 1.5C goal.

The report examines two “illustrative pathways” with faster, deeper emissions reductions, which reduce overall reliance on CDR. These pathways also have strong synergies with the sustainable development goals.

The scale, implementation, and methods used for CDR really matter.

- Different CDR methods have different costs, risks, land and resource implications, and carbon storage durations
- Some land-based CDR methods like reforestation, afforestation, and improved forest management have been practiced for decades to millennia. **We can infer from history that implementation matters even more than the specific CDR method for deciding human and environmental impacts**
- Direct air capture (DAC) and bioenergy with carbon capture and storage (BECCS) can be very energy- and water-intensive. They have not been demonstrated at scale. **There is a risk that these methods, as well as land-based CDR methods, fail to achieve the scale projected in many pathways or cause adverse impacts** on land use, biodiversity, food and water security, and local livelihoods and the rights of Indigenous Peoples.

The 1.5 degree goal is challenging but not impossible. **Ultimately, the most important thing is that emissions are reduced deeply and rapidly enough to reduce the overall need for CDR.**

Carbon budgets & fossil fuels

There's no room for new fossil fuel infrastructure in light of the Paris agreement warming limit, as there's already enough in place to exceed the remaining carbon budget, if allowed to operate as originally intended, with section B.5 stating: "Projected CO2 emissions from existing fossil fuel infrastructure without additional abatement would exceed the remaining carbon budget for 1.5°C"

Climate Change and Energy Minister Chris Bowen called for the ['strongest possible action'](#) to limit global heating to 1.5°C. In Australia **this means that there is absolutely no room for new coal, oil or gas projects - like Woodside's monstrous Burrup Hub project- if we are to have a chance of meeting the Paris agreement.**

What does this mean for the Pacific?

The AR6 report clearly lays out the disproportionate impact of the climate crisis on the world's most vulnerable, such as Pacific island nations. It shows the **world's existing fossil fuel infrastructure without additional abatement would exceed the remaining carbon budget for 1.5°C** and **with every additional increment of warming, changes in extremes continue to become larger.**

This report confirms **sea level rise is unavoidable for centuries to millennia** and the impact of this, with current 1-in-100 year **extreme sea level events projected to occur at least annually** in more than half of all tide gauge locations **by 2100 under all considered scenarios.**

In the near term, **every region in the world is projected to face further increases in climate hazards, increasing multiple risks to ecosystems and humans.** Hazards and associated risks expected in the near-term include an increase in heat-related human mortality and morbidity, food-borne, water-borne, and vector-borne diseases, and mental health challenges, flooding in coastal and other low-lying cities and regions, biodiversity loss in land, freshwater and ocean ecosystems.

Projected regional changes include **intensification of tropical cyclones and/or extratropical storms.** This report lands just weeks after Vanuatu was slammed with two Category 4 cyclones in two days.

Low-lying coastal areas like the Pacific **are already reaching the limits of adaptation**, while **global finance for adaptation measures is insufficient.** There is also increasing evidence of maladaptation, particularly in marginalised and vulnerable groups which reinforces and entrenches existing inequalities.

The world turned its eyes to the issue of loss and damage at COP27 in November and the AR6 report outlines that **risks and projected adverse impacts and related losses and damages from climate change will escalate with every increment of global warming.**