SENATORS FOR CLIMATE SOLUTIONS
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IPCC Sixth Assessment Report

The Intergovernmental Panel on Climate Change (IPCC)


Image: WWF

"It's now or never, if we want to limit global warming to 1.5°C (2.7°F). Without immediate and deep emissions reductions across all sectors, it will be impossible."
-IPCC Working Group III Co-Chair Jim Skea

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body responsible for assessing the science related to climate change. Comprehensive scientific assessment reports are published every 6 to 7 years; the latest, the Fifth Assessment Report, was completed in 2014 and it provided the main scientific input to the Paris Agreement.

The IPCC prepares comprehensive Assessment Reports about the state of scientific, technical and socio-economic knowledge on climate change, its impacts and future risks, and options for reducing the rate at which climate change is taking place.

The Working Group I contribution to the Sixth Assessment Report ***Climate Change 2021: the Physical Science Basis*** was released on 9 August 2021.The Working Group II contribution, ***Climate Change 2022: Impacts, Adaptation and Vulnerability***, was released on 28 February 2022. The concluding ***Synthesis Report is due in autumn 2022***.

On April 4th 2022, the IPCC Working Group III contribution to the IPCC's Sixth Assessment Report (AR6) was released. This report focuses specifically on climate mitigation and assesses the current state of knowledge on the scientific, technological, environmental, economic and social aspects of climate mitigation.

The Technical Summary provides an extended summary of the key findings. The Full Report is presented through 17 chapters that assess the mitigation of climate change, examine the sources of global emissions and explain developments in emission reduction and mitigation efforts. The Summary for Policymakers provides a high-level summary of the report, which may be of particular use for our work.

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Main Takeaways

- **Solar and wind energy** are becoming more affordable around the world.
    - Prices of solar and wind energy, and electric vehicle batteries have dropped significantly since 2010. The result is that it may be "more expensive" in some cases to maintain highly polluting energy systems than to switch to clean sources.

- Removing **fossil fuel subsidies** and introducing carbon pricing will direct more investment towards necessary renewable solutions and technologies.
    - There has been a consistent expansion of diverse policy instruments and laws addressing mitigation. By 2020, over 20% of global GHG emissions were covered by carbon taxes or emissions trading schemes. However, policies haven't been sufficient enough to achieve deeper reductions.

- Governments must enact policies that will help **modify personal behaviours**, including how individuals travel on a daily basis and what their diets consist of.
    - Such demand-side mitigation efforts could reduce global GHG emissions in some sectors by up to 70% by 2050. This is the first IPCC report which includes a chapter on demand-side mitigation.

- Continuing to operate existing **fossil fuel infrastructure** until the end of their lifespans would put the 1.5C target out of reach.
    - Furthermore, any newly built fossil fuel projects risk becoming "stranded assets" or being abandoned, which carries major financial risk. The estimated losses from stranded fossil fuel infrastructure is projected to be between $1 trillion and $4 trillion, from 2015 to 2050.

- Even with the most ambitious policy pathway there is only a **38% chance of limiting global warming to 1.5C.**
    - Previous IPCC reports have shown that crossing the 1.5C threshold would exacerbate hunger, conflict and drought globally, destroy at least 70% of coral reefs, and put millions at risk of being displaced by rising sea levels.

- **Global GHG emissions are at their highest ever level**, but growth has slowed. To stay below 1.5C, global GHG emissions need to peak "before 2025 at latest."
    - Continued steep decline in emissions is necessary to achieve reduction by 43% by 2030. At the same time, methane would need to be reduced by about a third.