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IPCC's Climate Change 2023: Synthesis Report

Issue Brief

March 28, 2023

On March 20, the Intergovernmental Panel on Climate Change (IPCC) released the final installment of its Sixth Assessment Report (AR6), entitled "Climate Change 2023: Synthesis Report." This report integrates the findings of a series of working group and special reports released over the past few years.

The IPCC is the United Nations body for assessing the science related to climate change and is comprised of 195 member governments. Hundreds of leading experts in the different areas covered by the IPCC reports volunteer their time and expertise as coordinators, authors, and reviewers to prepare IPCC reports.

The IPCC was established in 1988 with the mandate to prepare a "comprehensive review and recommendations with respect to the state of knowledge of the science of climate change, the social and economic impact of climate change and potential response strategies" that feed into international climate policymaking. There have been six assessment cycles and reports (each cycle is approximately 5-7 years) since the IPCC was founded.

Top Headlines

- Human activities, principally through emissions of greenhouse gases (GHG), have unequivocally caused global warming, with global surface temperature reaching 1.1°C/2°F (2011-2020) above pre-industrial (1850–1900) temperatures.
- Global greenhouse gas emissions are continuing to increase. According to the World Resources Institute, the annual growth rate of GHG emissions slowed from an average of 2.1% per year between 2000 and 2009 to 1.3% per year between 2010 and 2019.
- Current pledges by countries under the Paris Agreement (announced by October 2021) are insufficient and make it likely that warming will exceed 1.5°C in the near term.
- In all pathways that limit warming to 1.5°C/2.7°F (with no or limited overshooting of this goal), global GHG emissions must peak immediately and before 2025 at the latest. Global GHG emissions must then be reduced 43% by 2030 and 60% by 2035, relative to 2019 levels, for a 50% chance of keeping global temperature rise within 1.5°C by the end of the century.

- Human-caused climate change is already affecting many weather and climate extremes in every region across the globe, leading to widespread adverse impacts and related losses and damages to nature and people. More than 3 billion people are highly vulnerable to climate change.
- Risks and projected adverse impacts and related losses and damages from climate change escalate with every increment of global warming. Climatic and non-climatic risks will increasingly interact, creating compound and cascading risks that are more complex and difficult to manage.
- Adaptation options that are feasible and effective today will become constrained and less effective with increased warming.
- Cumulative carbon emissions until the time of reaching net-zero CO2 emissions and the level of greenhouse gas emission reductions this decade largely determine whether warming can be limited to 1.5^{o}C or 2^{o}C. Reaching net zero requires deep GHG emissions reductions will require net-negative CO2 emissions and carbon dioxide removal (CDR).
- All scenarios that limit warming to below 2°C include "greatly reduced" fossil fuel use and the complete phase out of unabated coal by 2050.

BCSE Takeaways

The IPCC's AR6 synthesis report presents a risk analysis of various pathways of global action on climate change and potential impacts – that has been agreed to by 195 nations. Key factors that influence the nuance of where these pathways lead include how countries respond to this call for increased levels of capital and political will to do more and at a faster pace.

The report includes a new target for the global community, which for the first time calls for countries to make drastic greenhouse gas emission reductions of 60% by 2035, relative to 2019 levels. It also calls upon national governments to accelerate their transitions to net-zero economies. At this year's United Nations' annual climate change conference, the COP 28 in the United Arab Emirates in December, a Paris Agreement requested global stocktaking to evaluate progress will take place. The IPCC report will likely be influential in that discussion where countries assess current and future national pledges to reduce GHG emissions.

The report also details how the impacts of climate change are more widespread and disruptive then previously understood. The window of opportunity presented in the report continues to narrow and calls for significant action in the next seven to 12 years to avert the unpredictability that comes from atmospheric warming above 1.5^{o}C. It is important to note that the "by 2035" time frame is a target, not a scientific threshold, and the IPCC report presents this target as a measure of the likelihood of worsening impacts with higher levels of new and cumulative GHG emissions.

The report also identifies that three to six times the current level of public and private climate financing, currently estimated at $600 billion, is needed for both mitigation and adaptation to get back on track.

Amidst these risks and gaps, the IPCC also presents a positive path forward as "climate-resilient development" and highlights that integrating measures to adapt to climate change with actions to reduce emissions can provide wider benefits by improving peoples' health and livelihoods; reducing poverty and hunger; and providing clean energy, water, and air.

Through its climate and clean energy policy advocacy, BCSE consistently affirms a key finding of the report – that "multiple, feasible and effective options are available to reduce GHG emissions."

With significant federal legislation now in place through the Energy Act (2020), Infrastructure Investment and Jobs Act (2021), CHIPS and Sciences Act (2022), and the Inflation Reduction Act (2022), the United States has a federal policy framework in place that requires intensive focus on implementation, if the scale of climate goals articulated in the IPCC report is hoped to be achieved.

The IPCC report acknowledges the important role of a diversified energy portfolio, and in Figure 7 of the Summary for Policymakers (see last page), presents the mitigation opportunities offered by technologies represented by the BCSE coalition, including: solar, wind, bioelectricity, geothermal and hydropower, efficient buildings, efficient lighting, appliances and equipment, demand management, biofuels for transport, fuel switching for industry, carbon capture utilization and storage, and more.

The work of BCSE to advocate for policies, programs, and funding to deploy technologies and decarbonize the energy sector, as well as in the industrial, buildings, agriculture and transportation sectors, is essential work to avoid the worst-case scenarios presented in the IPCC synthesis report.

For more information on this topic:

Other AR6 Synthesis Report Resources:

- Summary for Policymakers
- Headline statements
- Figures from the Summary for Policymakers
- Presentation made during the press conference

Other resources:

- 10 Big Findings from the 2023 IPCC Report on Climate Change - World Resources Institute

About BCSE Issue Briefs

These issue briefs are written and researched by BCSE staff. Are there any current energy news, policy areas, or pieces of legislation you'd like to learn more about? Let us know – reach out to Lizzie Stricklin, Communications Manager with any comments or topic suggestions.

Figure 7, Summary for Policy Makers