

SUBMISSION FOR THE TECHNICAL INPUT PHASE OF THE FIRST GLOBAL STOCKTAKE

March 2023

The Center for International Environmental Law (CIEL) and the Heinrich Böll Stiftung Washington, DC welcome the opportunity to provide input for the technical assessment phase of the first Global Stocktake.

The first Global Stocktake (GST) is happening during times of devastating and accelerating climate impacts harming human rights across the globe. Oil majors are reporting excessive and unprecedented profits on the back of a war while millions of people are struggling to pay their energy bills or are even without any access to energy. At the same time, developing countries are faced with unsustainable debt levels and limited fiscal space as climate finance needs, including for addressing loss and damage and to support a just and equitable transition of their economies and societies away from fossil fuels, grow exponentially.

As Parties are failing to live up to their promises made over seven years ago in the Paris Agreement, which include unfulfilled long time financial pledges by developed countries to support developing countries in raising the ambition of their implementation efforts, **the Global Stocktake must be a moment of accountability and change of course.** It is the litmus test of the Paris Agreement and can only be a success if it is **based on science and results in a commitment and clear pathway for a full, rapid and equitable phase out of all fossil fuels**, including through the mobilization and provision of **adequate public climate finance** by developed countries to developing countries.

The GST cannot be a place where corporate interests prevail and **risky technologies are proposed as purported solutions.** This submission highlights how the IPCC's Sixth Assessment report (AR6) describes that temporary **overshoot of 1.5°C is extremely dangerous**, that technologies such as **Carbon Capture and Storage (CCS) and Carbon Dioxide Removal (CDR) are expensive**, drawing scarce climate funding away from more urgent and more just needs and priorities, **unproven at scale at best and dangerous at worst**, and that reliance on them is therefore a distraction of what we know - and the IPCC confirms - is **the clearest and most certain path to avoid overshoot and prevent irreversible impacts: a rapid and equitable fossil fuel phaseout.**

The submission summarizes three recent publications:

- CIEL and Heinrich Boell Foundation (March 2023). [*"Lost in Translation: Lessons from the IPCC's Sixth Assessment on the Urgent Transition from Fossil Fuels and the Risks of Misplaced Reliance on False Solutions"*](#)
- CIEL and Heinrich Boell Foundation (April 2022). [*"IPCC Unsummarized: Unmasking Clear Warnings on Overshoot, Techno-fixes, and the Urgency of Climate Justice"*](#)
- CIEL and Heinrich Boell Foundation (February 2022). [*"Beyond the Limits: New IPCC Working Group II Report Highlights How Gambling on Overshoot is Pushing the Planet Past a Point of No Return"*](#)

1. Lost in Translation: Lessons from the IPCC's Sixth Assessment on the Urgent Transition from Fossil Fuels and the Risks of Misplaced Reliance on False Solutions

Publication date: March 2023

Main messages

- The IPCC unequivocally warns that exceeding 1.5°C warming (overshoot) has dangerous and irreversible consequences, even if temperatures might eventually be brought back below that level.
- The IPCC clearly sets out the near-term actions and fossil fuel phaseout required to keep temperature rise below 1.5°C, with minimal to no overshoot.
- Most IPCC scenarios rely on large-scale CDR to bring temperatures back below a certain threshold in the second half of the century. At the same time, AR6 provides clear warnings about the technological infeasibility, significant financial and environmental costs, and human rights impacts of large-scale CDR.
- Because of how they are designed, IPCC models and future mitigation scenarios disproportionately favor CDR and CCS, particularly technologies like bioenergy with carbon capture and storage (BECCS) that have huge environmental costs and may not ever be feasible at scale. However, other models and other futures are possible and necessary.
- The IPCC does not include solar radiation modification (SRM) in its climate modeling because of large uncertainties, knowledge gaps, substantial risks, and institutional and social constraints, and in no uncertain terms warns against its risks and dangers.

Summary

The IPCC's Sixth Assessment Cycle will conclude in March 2023 with the release of a Synthesis Report (SYR) and Summary for Policymakers (SPM). This assessment cycle covers six major reports that the IPCC has released since 2014. This briefing is intended as a metric and counterpoint to weigh the IPCC's AR6 SYR SPM against the underlying AR6 reports to highlight findings that are essential to understanding the climate actions necessary to prevent and minimize the risk of catastrophic impacts of overshoot, and to design the just and equitable path ahead. It draws on two previous analyses by CIEL and the Heinrich Böll Foundation on the IPCC's Working Group II (WGII) and Working Group III (WGIII) reports, described below in this submission, other reports of the AR6 cycle, and additional relevant academic literature to inform interpretations of the AR6 SYR.

The reports covered in the IPCC's Sixth Assessment reflect an undeniable scientific consensus about the urgency of the climate crisis, its primary causes, and **the irreversible harm that will occur if warming surpasses 1.5°C (overshoot)**, even temporarily, including by increasing the chance of triggering climate 'tipping points' and self-reinforcing feedback loops, such as permafrost thawing and the collapse of forest ecosystems.

AR6 makes clear: **a rapid fossil fuel phaseout and rollout of renewable energies alongside energy efficiency and demand-side measures remain the clearest and most certain path to avoid overshoot.** There is enormous potential to scale up real solutions while addressing global inequalities, including through energy demand reduction measures. The costs of renewable energy (notably photovoltaics, wind power, and

batteries) have declined rapidly, and their pace of adoption has exceeded that of other technologies like nuclear and CCS.

Technological CDR approaches, such as BECCS and DACCS, are unproven at scale. The **IPCC provides clear warning about the technological infeasibility, significant financial and environmental costs, and human rights impacts of large-scale CDR**. Overall, the IPCC reaffirms the dangers of governments and industries relying on the future availability of problematic technologies that are not proven at scale while taking grossly insufficient action now to immediately, urgently, and drastically reduce emissions. Despite this, and as a result of built-in biases and assumptions such as endless and inequitable growth and exclusion of costs of future climate impacts, IPCC models and future mitigation scenarios disproportionality favor problematic technologies like CCS and CDR, particularly technologies like BECCS that have huge environmental costs and may not ever be feasible at scale.

Lastly, the IPCC in no uncertain terms **warns against risks and dangers of SRM**. It does not include SRM in its climate modeling because of large uncertainties, knowledge gaps, substantial risks, and institutional and social constraints.

Full analysis: ["Lost in Translation: Lessons from the IPCC's Sixth Assessment on the Urgent Transition from Fossil Fuels and the Risks of Misplaced Reliance on False Solutions"](#).

2. IPCC Unsummarized: Unmasking Clear Warnings on Overshoot, Techno-fixes, and the Urgency of Climate Justice

Publication date: April 2022

Main messages

- Limitations in modeled mitigation pathways and political pressure lead to dangerous overemphasis on speculative technologies and future action. These modeling problems are compounded by political pressure to avoid policy prescription in the Summary for Policymakers, particularly from fossil fuel-producing countries.
- Rapid fossil fuel phaseout remains the clearest and most certain path to avoid overshoot and prevent irreversible impacts.
- CCS is a costly extension of the fossil fuel industry and technological CDR methods are risky, unproven, and obstruct climate progress.
- Mitigation measures must be grounded in social justice and equity.

Summary

The Working Group III Contribution to the IPCC's AR6, Climate Change 2022: Mitigation of Climate Change affirms why a **rapid and equitable phaseout of fossil fuels must be the centerpiece of any science-based mitigation strategy** to confront the climate emergency. Like the two companion reports that preceded it, the WG III report demonstrates that climate change is not a future threat but a present emergency; that the scale and severity grow with each increment of warming; and that quickly ending reliance on the fossil fuels that drive the climate crisis is the fastest, surest, most effective way to avert climate catastrophe.

The three Working Group reports reflect an undeniable scientific consensus about the urgency of the climate crisis, its primary causes, and the irreversible harm that will occur if warming surpasses 1.5°C, even temporarily. The Working Group III report also reaffirms **the dangers of governments' overreliance on unproven technologies like CCS and CDR**. Yet, these warnings are buried and downplayed in the report, particularly in the heavily negotiated SPM, among an array of models and pathways that rely on precisely such technologies, project continued use of fossil fuels for decades, and overwhelmingly assume that the world will go beyond 1.5°C for decades or longer – with surprisingly little attention paid to the human and environmental consequences such assumptions entail.

This briefing examines that dangerous disconnect. Drawing on the full WG III report, the companion reports from Working Groups I and II, and the IPCC's 2018 Special Report on 1.5°C, **this briefing reveals a clear consensus within the IPCC on the urgent need to transition from fossil fuels, the necessity and feasibility of staying below 1.5°C, and the risks of overshoot and future techno-fixes**. It highlights the stark and surprising gap between that consensus and the mitigation pathways emphasized in the WG III report, particularly in the SPM. It examines how core assumptions and biases built into integrated assessment models and the mitigation pathways they produce help create that gap by limiting our understanding of what futures are achievable. And it highlights how the political choices made in distilling the full WG III report and Technical Summaries into the SPM can further skew our understanding of the science, the options, and the risks that accompany climate mitigation choices.

Additionally, the briefing also demonstrates how the WG III report calls attention to ensuring that the transition to a low-carbon society is not only rapid but is also just, and that the phasing out of fossil fuels comes with substantial co-benefits for sustainable development. Centering justice in climate mitigation approaches is necessary to alleviate existing societal vulnerabilities and minimize climate harms. **The mitigation pathways that avoid overshoot and limit reliance on unproven techno-fixes are also the best routes to achieving other sustainable development goals and are most protective of human rights.**

Full analysis: [*IPCC Unsummarized: Unmasking Clear Warnings on Overshoot, Techno-fixes, and the Urgency of Climate Justice*](#)

3. Beyond the Limits: New IPCC WGII Report Highlights How Gambling on Overshoot is Pushing the Planet Past a Point of No Return

Publication date: February 2022

Main messages

- Even temporary overshoot of 1.5°C is exceptionally dangerous and would result in adverse impacts irreversible on time-scales from centuries to millennia, or in the case of species extinctions, simply irreversible;
- Approaches that deploy unproven technologies to reverse or mask overshoot may prove ineffective and risk further disaster;
- Climate responses, including adaptation, must integrate social justice and equity and center Indigenous and local knowledge.

Summary

The Working Group II's contribution to the IPCC AR6 regarding Climate Change Impacts, Adaptation and Vulnerability confirms that climate change is already causing severe and permanent loss and damage to human and natural systems, that **exceeding 1.5°C warming –even temporarily– would result in further irreversible harm, and that strategies premised on the possibility of returning from such overshoot through the use of SRM or technological carbon dioxide removal CDR court grave danger.**

The IPCC finds that warming above 1.5°C would cause extensive human and ecological damage, including irreversible impacts from which recovery or adaptation would be difficult if not impossible. The AR6 explicitly considers the risks introduced not just by climate change, but by human responses to it. WG II recognizes that such measures can have significant adverse impacts, compounding climate damage, eroding resilience, and exacerbating vulnerabilities. This is critical because a growing majority of climate scenarios—and the climate plans and policies being adopted by nations and companies alike—rely heavily on technologies and strategies not expected to make meaningful contributions to climate mitigation for decades. Two categories of such strategies—large-scale CDR and deployment of SRM—have emerged as the primary approaches for returning to 1.5°C in the event of temperature overshoot. These strategies have gained increasing prominence in climate discourse, in national climate commitments, and in government funding decisions. **These strategies may not only prove ineffective in reversing warming and impotent against its consequences, such as sea level rise, but also cause significant adverse impacts of their own, such as rainfall disruption, termination shock, water depletion, and erosion of human and ecological resilience.**

In affirming that climate change is already causing, and will continue to cause, severe loss and damage, with disproportionate impacts on the most vulnerable human and ecological systems, the IPCC's findings support growing calls for financing commitments to address those mounting impacts. While WGII report does not directly discuss climate change mitigation measures, **its findings fundamentally underscore the need for urgent action and nearterm emissions reductions, including a halt to all oil and gas expansion and the phaseout of fossil fuels—not strategies that assume overshoot and hope for return to 1.5°C or below by relying on risky and unproven technologies.** More than any preceding IPCC publication, this report emphasizes that social justice and equity are critical to such urgent action as is adequate climate finance provision in the form of public grants for the most vulnerable, including for access to basic energy. The IPCC concludes that to effectively reduce vulnerability and enhance adaptation, responses to the climate crisis must involve participatory decision-making processes and integrate considerations of justice and equity, Indigenous and local community knowledge, and the gender dimensions of climate change and climate actions.

The WG II report must be read against the background of the IPCC's prior reports, such as the Working Group I Contribution to the Sixth Assessment Report (2021) and the Special Report on Global Warming of 1.5°C (2018). Collectively these volumes signal an unambiguous warning— dangerous climate change is already unfolding, its impacts will worsen, and failure to limit warming to 1.5°C risks irreparable consequences including grave threats to human rights.

This analysis examines the WG II report in this context and with specific attention to its findings and significance for: overshoot scenarios, technologies and approaches common to those scenarios, and the implications of climate change and responses to it for human rights, Indigenous Peoples' rights, and social justice. It highlights the three critical messages shared above. A recognition of the critical messages is

important both to a proper understanding of the WGII report itself and to evaluating the mitigation options to be discussed in the report of IPCC Working Group III.

Some of Working Group II's most sobering findings were diluted or deleted from the final Summary for Policymakers approved by State Parties. But Parties cannot negotiate away the science. The underlying chapters of the WGII report, including the technical summary, leave no doubt: **surpassing 1.5°C will lead to irreparable harm, whether or not return to lower temperatures is even possible.** Technologies like SRM and large-scale CDR that purport to enable such return may not only fail to deliver their claimed climate benefits, they also may trigger significant adverse impacts of their own. Policy choices that lock the world into overshooting 1.5°C and gambling on return, rather than immediately and drastically slashing emissions— including through rapid phaseout of fossil fuel production and use and a halt to deforestation— invite permanent loss and irreversible damage to humans and ecosystems around the world. In the face of the WGII report, such choices are indefensible.

Full analysis: [*Beyond the Limits: New IPCC Working Group II Report Highlights How Gambling on Overshoot is Pushing the Planet Past a Point of No Return*](#)

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