

Búzios Scientific Statement – Evidence-Based Insights for COP30

Búzios, RJ, Brazil

(updated version, 17 November 2025)

More than 250 leading international scientists [convened this week](#) in **Armação dos Búzios, RJ, Brazil**, in parallel with the COP30 negotiations, at the Integrated Assessment Modelling Consortium's (IAMC) annual conference to present and debate the latest scientific evidence on what it will take to halt global warming and pursue the goals of the Paris Agreement. The IAMC brings together leading climate researchers from all over the world focussing on mitigation and adaptation solutions.

At the conference, these national and international experts discussed the most up-to-date science on climate change mitigation and adaptation pathways towards the Paris Agreement's climate goals. Since the publication of IPCC AR6, 300 new pathways have been developed by the research community.

During the conference, members of the IAM community got together to summarize several high-level policy-relevant insights for COP30:

1. Overshoot 1.5°C unavoidable, but returning below is possible

Due to insufficient emission reductions, even the most ambitious emission reduction pathways will now result in a temporary exceedance of the 1.5°C warming level. But the pathways also show that returning below 1.5°C this century is possible through removal of CO₂ from the atmosphere.

Every fraction of a degree of overshoot will lead to escalating impacts on ecosystems, human health and development prospects, particularly in the developing world. It is critical to realize that every five years without substantial CO₂ emission reductions locks in an additional temperature increase of about 0.1°C, and implies an additional need of around 200 GtCO₂ of negative emissions to return to 1.5°C.

2. Towards closing the emissions gap in this decade

Announced Nationally Determined Contributions (NDCs) imply an [emissions gap of more than](#) 20 GtCO₂ per year by 2035 relative to a 1.5°C pathway.

Immediate and comprehensive policy shifts beyond current commitments, and strengthening of international cooperation followed by actions can address this shortfall.

Such efforts can build on rapid market developments and new innovations, including for renewable energy and battery technologies, which enable substantially higher emissions reductions this decade to limit the overshoot of 1.5°C and bring social and environmental benefits.

3. Global Benchmarks for 2035

Recent mitigation pathways provide information on what would be consistent with limiting overshoot above 1.5°C, including by achieving the following global benchmarks by 2035:

- Reduce global greenhouse gas emissions by about half relative to 2024.
- Increase the global contribution of solar and wind renewables by a factor five to six over the 2024-2035 period.
- Reduce global fossil fuel production and use by a quarter to half compared with 2024.

Enhanced action in the near-term requires evaluating and considering equity and justice and a range of other societal and policy priorities.

4. The role of individual countries

To complement and supplement the global analyses, national mitigation and adaptation pathways towards country net zero targets are being synthesized and assessed. Emerging science illustrates that multiple transitions will occur across all countries, although the rate and pace of emission reductions and the role of sectors and technologies will differ.

Given the need to bridge the gap and increased global benchmarks by 2035, every country will need to ratchet its NDC/emission targets towards 'highest possible ambition' based on their respective national priorities (including development) and capacities. Emerging insights on investment needs at the country level can assist with mobilizing finance.

5. Adaptation planning and implementation essential

Climate change impacts are widespread today and will continue to intensify. This underscores the urgency of planning and increasing adaptation action globally, including through mobilising increased financial resources for adaptation. Establishing clear indicators to assess progress towards the global goal of adaptation will be essential to catalyze implementation.

Integrated perspectives incorporating mitigation and adaptation solutions are central to maximise adaptation and mitigation synergies and minimise trade-offs.

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