

How can we accelerate action to stay below 1.5 degrees C?

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Chair Intergovernmental Panel on Climate Change

LCS-RNet 15th Annual Meeting

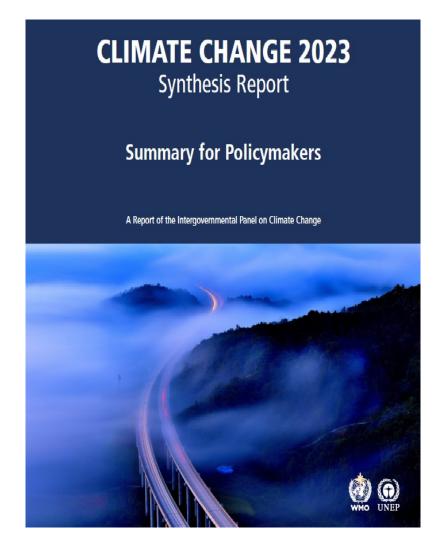
19 December 2024

The three goals of the Paris Agreement

- 1. Holding 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;
- 2. Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production
- 3. **Making finance flows consistent** with a pathway towards low greenhouse gas emissions and climate-resilient development.

....in the context of **sustainable development** and **efforts to eradicate poverty**





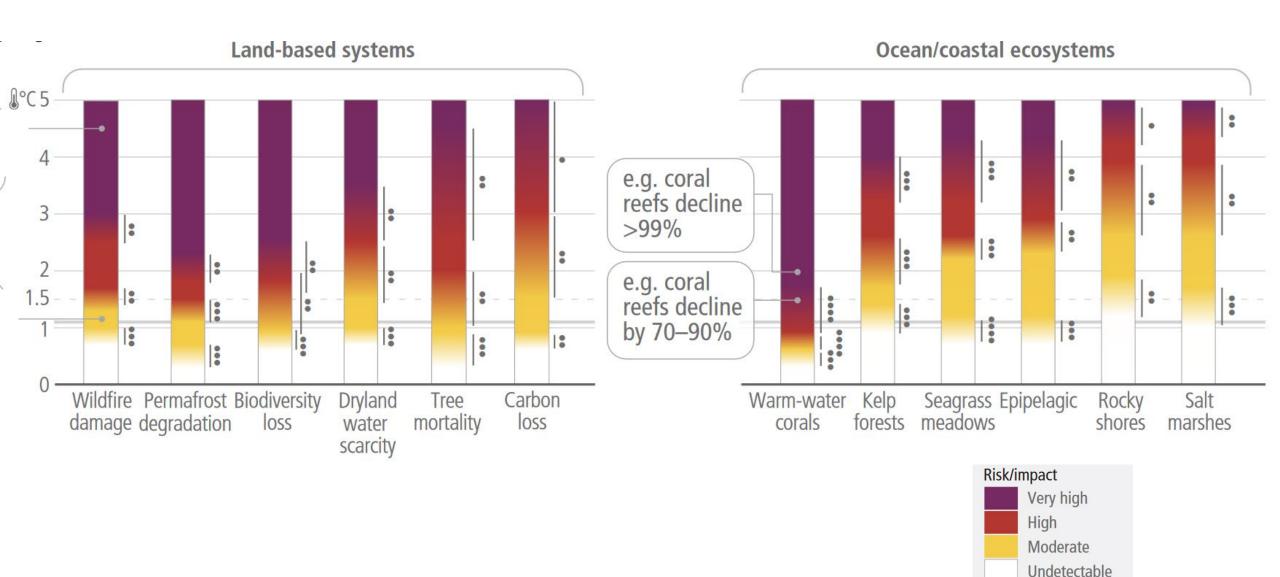


Adaptation and resilience

Risks differ by system

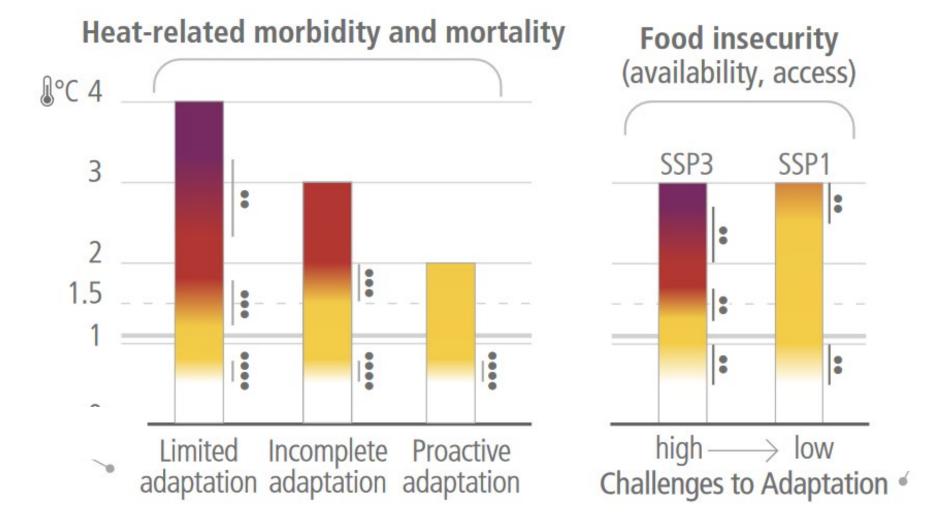






Adaptation and socio-economic pathways affect levels of climate related risks



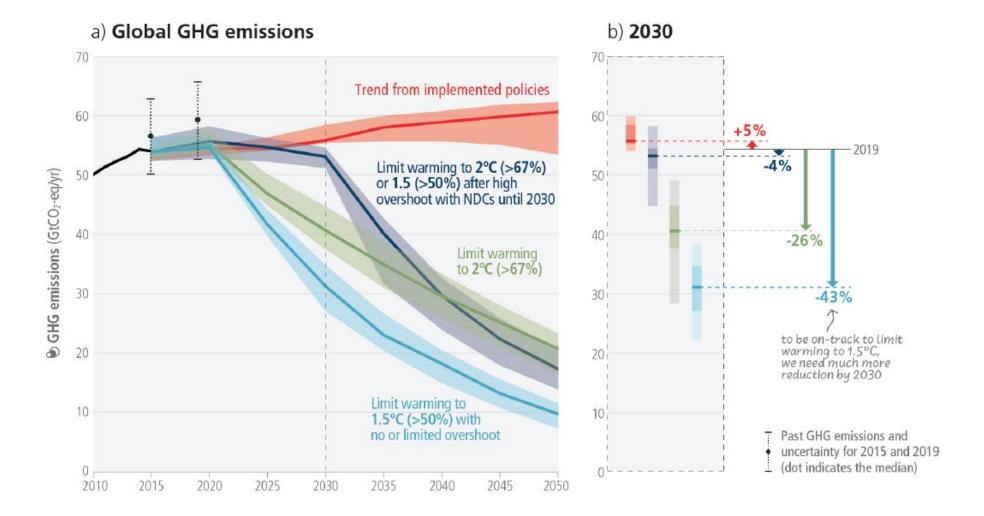




Current Status and Trends

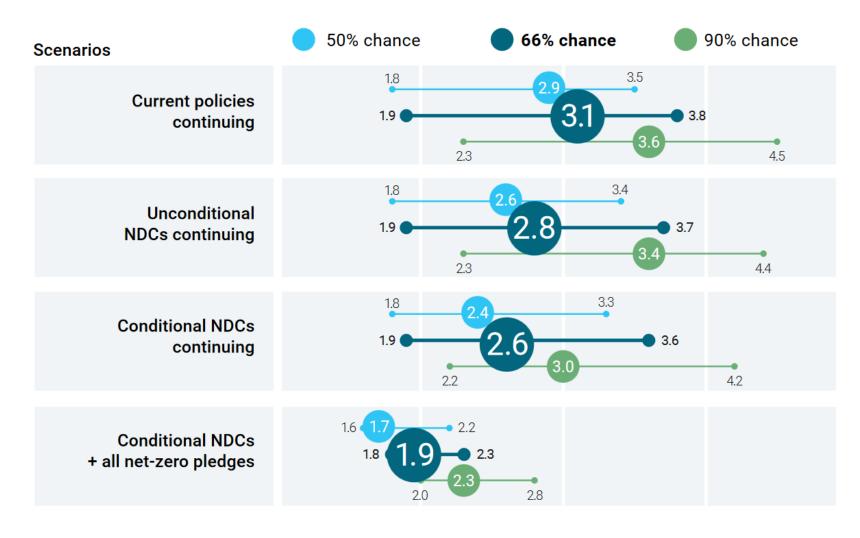
Projected global emissions from NDCs make it likely that warming will exceed 1.5°C





Emission scenarios and global warming





Emissions are distributed unevenly, both in the present day and cumulatively since 1850

a) Historical cumulative net anthropogenic CO₂ emissions per region (1850–2019)



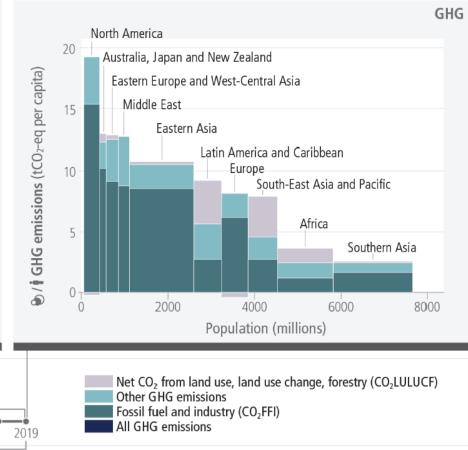
1990

Key

1850

Timeframes represented in these graphs

b) Net anthropogenic GHG emissions per capita and for total population, per region (2019)



Renewable electricity generation is increasingly price-competitive and some sectors are electrifying

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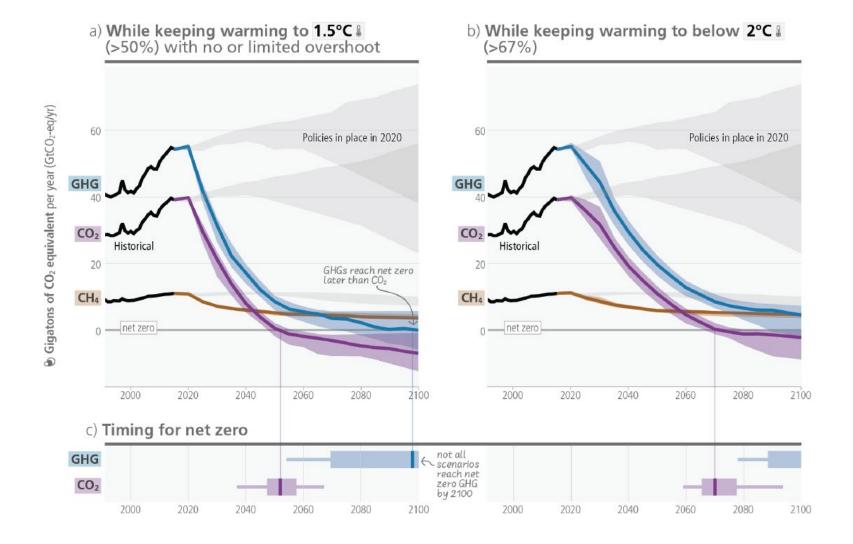


Offshore **Photovoltaics** Onshore Passenger wind wind electric vehicle Li-ion battery packs Cost (\$2020/MWh) a) Market Cost Cost (\$2020/kWh) 1200 Since AR5, the unit costs of some forms of renewable energy and of batteries for passenger EVs have fallen. 0 below this point, costs can be less than fossil fuels — Fossil fuel cost (2020) 2010 2010 2010 2010 800 b) Market Adoption of EVs) Adoption (GW) -note differnt 600 Since AR5, the installed capacity of renewable energies has Adoption (millions increased multiple times. 400 2010 2010 2010 2010 Market cost, with range 2010 2020 2000 Fossil fuel cost (2020)



The long-term temperature goal

Global modelled pathways that limit warming to 1.5°C reach net zero CO₂ emissions around 2050

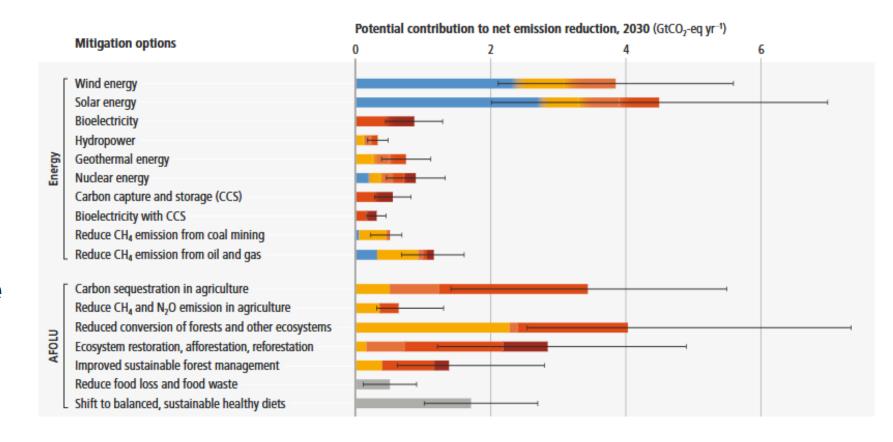


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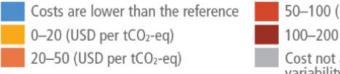
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Energy and Agriculture, Forestry and Other Land Use (AFOLU)











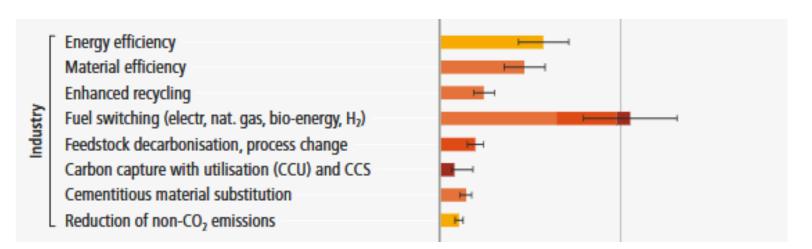




Mitigation options

Potential contribution to net emission reduction, 2030 (GtCO₂-eq yr⁻¹)

Industry







The range of demand-side GHG emission reduction potential by **2050** is 40-70% in end-use sectors

AFOLU

Direct reduction of food

related emissions, excluding

reforestation of freed up land



Add. electrification

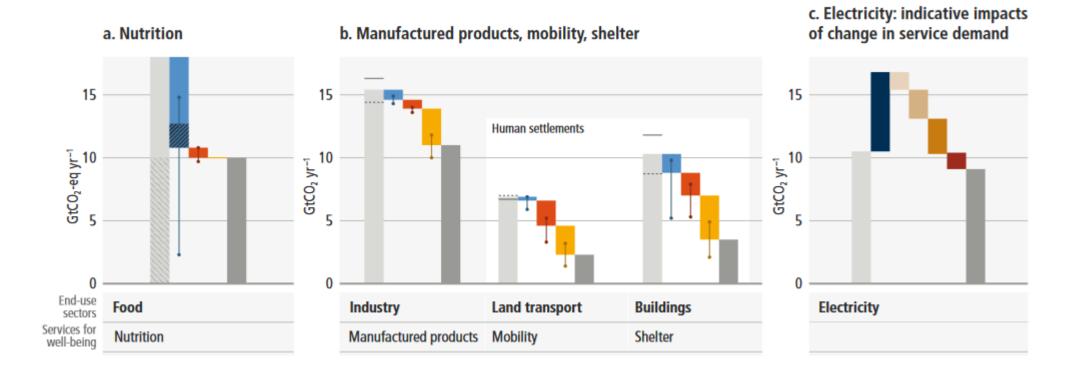
Load management

Land transport

Industry

Buildings





Total emissions 2050

Socio-cultural factors

Infrastructure use

adoption

End-use technology

Emissions that cannot be

demand-side options are

assumed to be addressed

by supply-side options

avoided or reduced through

Carbon Dioxide Removal: Can counterbalance hardto-eliminate emissions





Land-based Ocean-based Centuries to Ten thousand Decades to Removal process: Geochemical Chemical Timescale of storage: biological biological centuries millennia vears or longer Afforestation, Bioenergy with Direct air Peatland Ocean reforestation, Soil carbon carbon capture carbon capture Enhanced and coastal Blue carbon Ocean CDR method Biochar alkalinity improved forest sequestration and storage and storage wetland weathering management fertilisation enhancement (BECCS) (DACCS) management restoration Carbonate Agricultural Iron Cropping and forestry Silicate Agroforestry Solid sorbent Rewetting rocks fertilisation practices rocks residues Tree planting, Implementation Pasture Urban and industrial organic N & P Revegetation Silicate rocks Liquid solvent option silviculture management waste fertilisation Enhanced Timber in Purpose-grown biomass upwelling crops construction Bio-based products Earth system Land Ocean Vegetation, soils and Vegetation, soils and sediments Storage medium Buildings Geological formations Minerals Marine sediment Minerals sediments

We have the tools



- Gigatonnes of greenhouse gas emissions have already been avoided
- Climate legislation covers more than half of global emissions; 20% of emissions covered by carbon pricing
- The toolset includes: carbon pricing; regulation; standards; sunset requirements; information and advice; skills, training and supply chain development; technology cooperation; finance

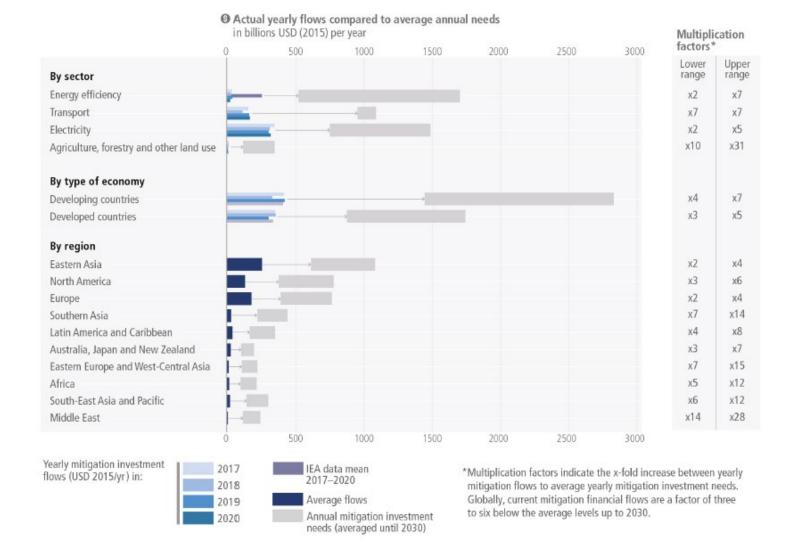


Consistent finance flows

Higher mitigation investment flows required for all sectors and regions to limit global warming









Plans for the Seventh Assessment Cycle

Work under way



- The outline of a *Special Report on Climate Change and Cities* has been agreed, and author selection is in its final stages. The report is due to be approved in early 2027.
- The outline of a *Methodology Report on Short Lived Climate Forcers* has been agreed, and author selection is in its final stages. The report is due to be approved in late 2027.
- The Scoping Meeting for a Methodology Report on Carbon Dioxide
 Removal Technologies and Carbon Capture, Utilisation and Storage
 has been held, and the Panel is set to agree the outline in early 2025. The
 report is due to be approved in late 2027.

The Working Group Reports

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE



- 9. The Panel decides that during the Seventh Assessment Cycle the IPCC will provide a comprehensive Assessment Report consisting of three Working Group contributions in the following sequence unless the Panel decides otherwise:
 - a) WG I The Physical Science Basis
 - b) WG II Impacts, Adaptation and Vulnerability
 - c) WG III Mitigation of Climate Change

and requests the Bureau to prepare a document outlining the month and year of delivery on the basis of an AR7 strategic plan... and present it to the Panel at its next meeting for consideration and decision.



The Scoping Meeting was held in Kuala Lumpur, 9-13 December 2024 and produced draft outlines for the three Working Group Reports.

IPCC's Work Programme for the Seventh Cycle



Alongside the Working Group II report, there will be a *distinct* product revising and updating the 1994 IPCC Technical Guidelines on impacts and adaptation, including adaptation indicators, metrics and methodologies. This was also scoped in Kuala Lumpur.

The Synthesis Report for the Seventh Assessment Cycle will be produced by late 2029, after the completion of Working Group reports.

THANK YOU FOR YOUR ATTENTION

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