

IPCC Special Report on Global Warming of 1.5 °C

Monday 8th of October
#SR15

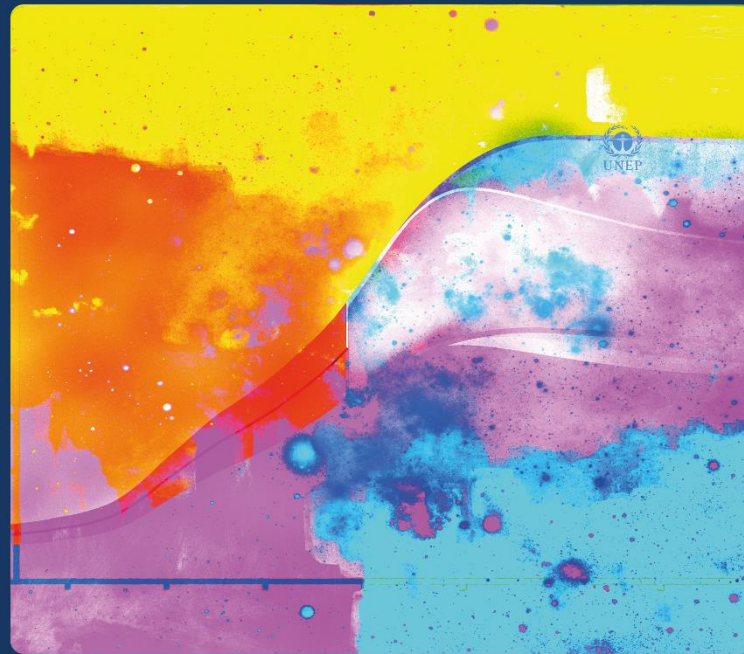
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Global Warming of 1.5°C

An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.

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The report in numbers

91 Authors from 40 Countries

133 Contributing authors

6000 Studies

1 113 Reviewers

42 001 Comments

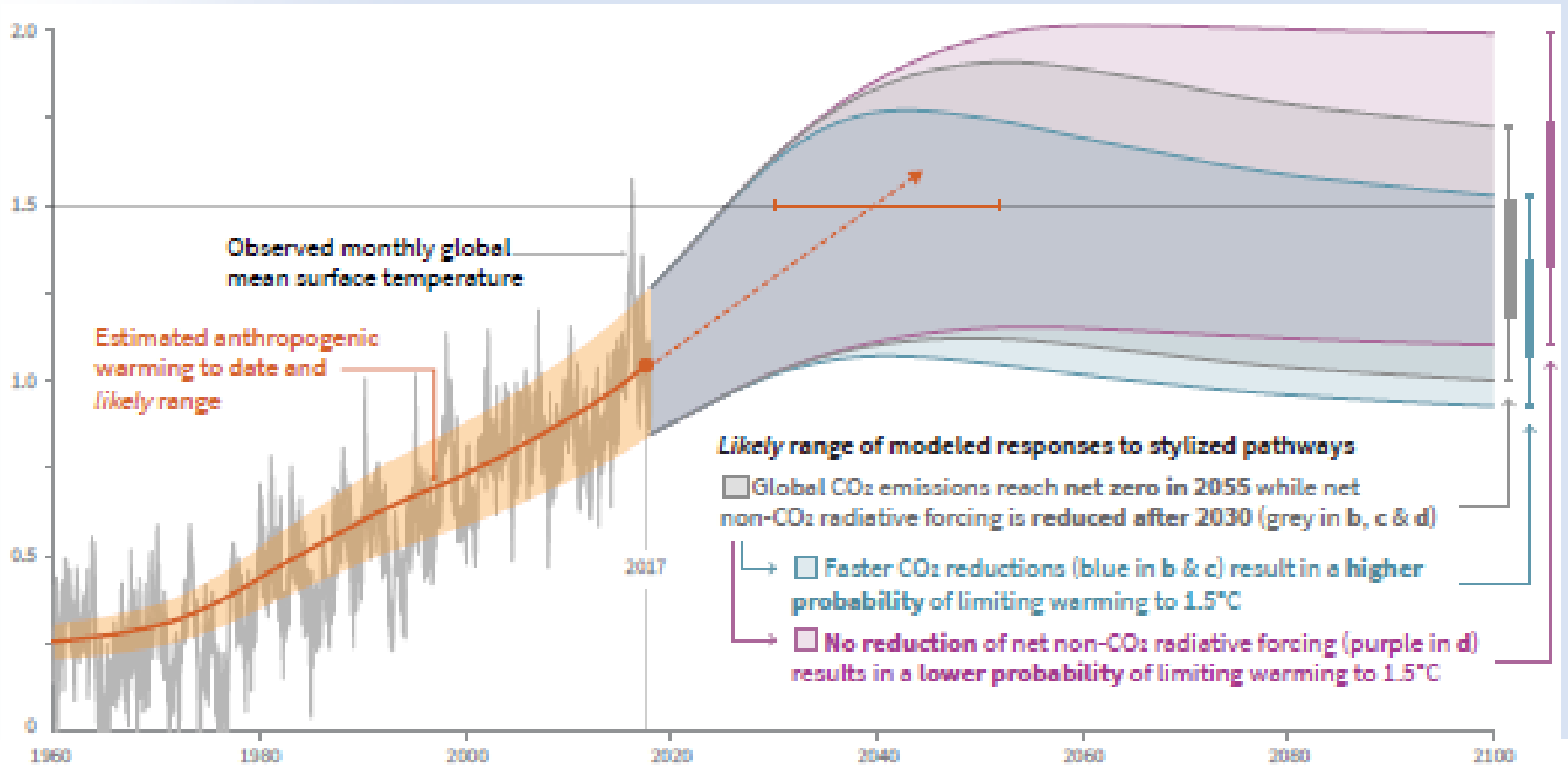
Understanding Global Warming of 1.5°C

Where are we now?

Since preindustrial times, human activities have caused approximately 1.0°C of global warming.

- Already seeing consequences for people, nature and livelihoods
- At current rate, would reach 1.5°C between 2030 and 2052
- Past emissions alone do not commit the world to 1.5°C

Where are we now?



Projected Climate Change, Potential Impacts and Associated Risks

Impacts of global warming 1.5°C

At 1.5°C compared to 2°C:

- Less extreme weather where people live, including extreme heat and rainfall
- By 2100, global mean sea level rise will be around 10 cm lower
- 10 million fewer people exposed to risk of rising seas

Impacts of global warming 1.5°C

At 1.5°C compared to 2°C:

- Lower risk to fisheries & the livelihoods that depend on them
- Lower impact on biodiversity and species
- Smaller reductions in yields of maize, rice, wheat
- Up to several hundred million fewer people exposed to climate-related risk and susceptible to poverty by 2050
- Global population exposed to water shortages up to 50% less

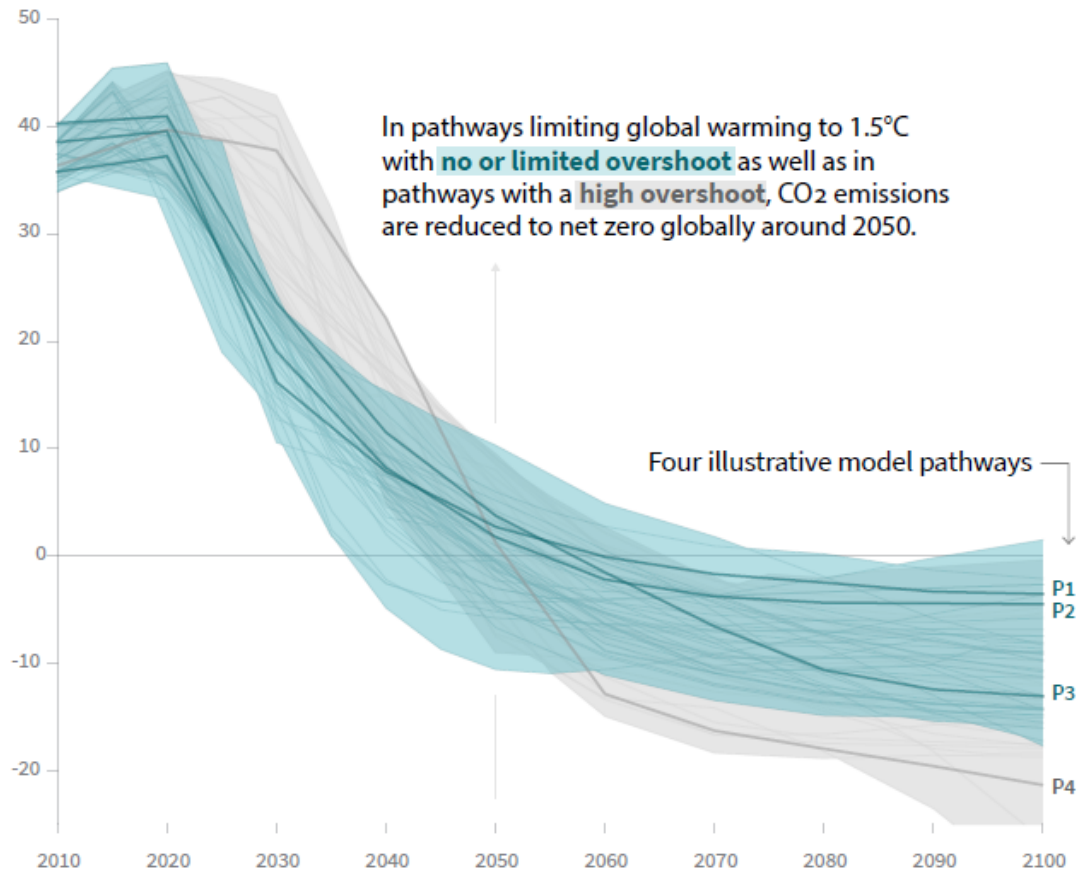
Emission Pathways and System Transitions Consistent with 1.5°C Global Warming

Greenhouse gas emissions pathways

- To limit warming to 1.5°C, CO₂ emissions fall by about 45% by 2030 (from 2010 levels)
 - Compared to 20% for 2°C
- To limit warming to 1.5°C, CO₂ emissions would need to reach 'net zero' around 2050
 - Compared to around 2075 for 2°C
- Reducing non-CO₂ emissions would have direct and immediate health benefits

Global total net CO₂ emissions

Billion tonnes of CO₂/yr

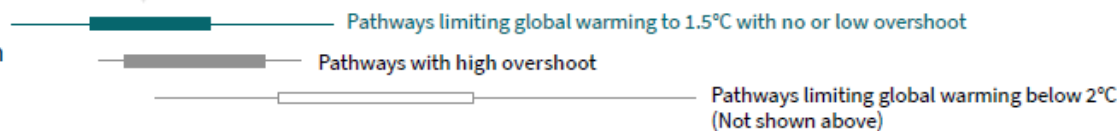


In pathways limiting global warming to 1.5°C with **no or limited overshoot** as well as in pathways with a **high overshoot**, CO₂ emissions are reduced to net zero globally around 2050.

Four illustrative model pathways

P1
P2
P3
P4

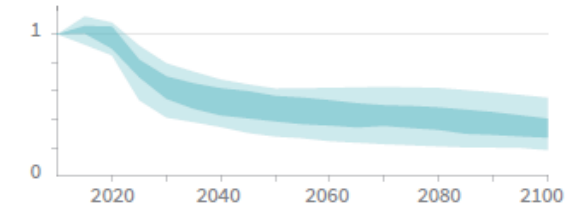
Timing of net zero CO₂
Line widths depict the 5-95th percentile and the 25-75th percentile of scenarios



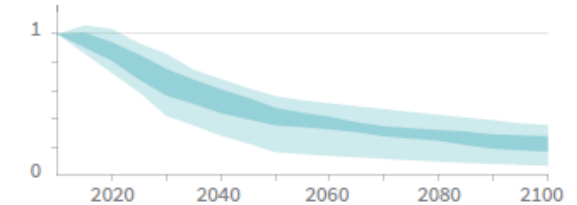
Non-CO₂ emissions relative to 2010

Emissions of non-CO₂ forcers are also reduced or limited in pathways limiting global warming to 1.5°C with **no or limited overshoot**, but they do not reach zero globally.

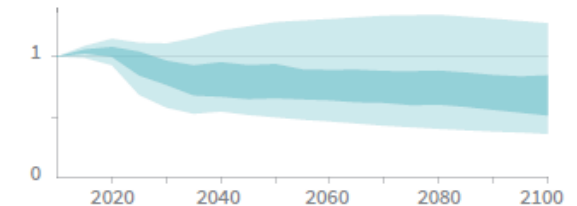
Methane emissions



Black carbon emissions



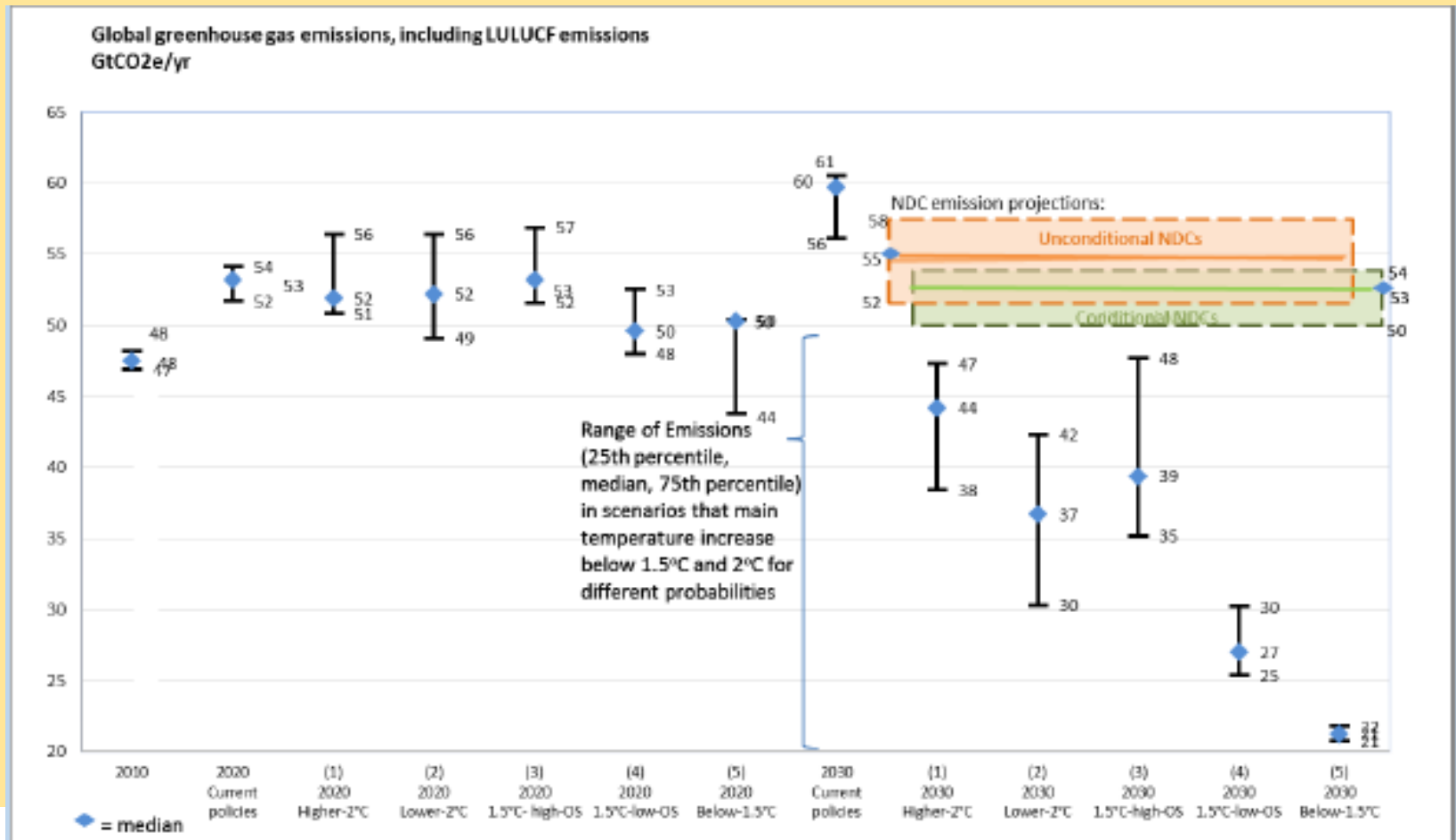
Nitrous oxide emissions



Greenhouse gas emissions pathways

- National pledges are not enough to limit warming to 1.5°C
- Avoiding warming of more than 1.5°C would require carbon dioxide emissions to decline substantially before 2030
- We would need to start taking carbon dioxide out of the atmosphere
- Implications for food security, ecosystems and biodiversity

Greenhouse gas emissions pathways



Greenhouse gas emissions pathways

- Limiting warming to 1.5°C would require changes on an unprecedented scale
 - Deep emissions cuts in all sectors (energy, transport, buildings, industry, cities, land)
 - A range of technologies
 - Behavioural changes (energy, consumption, food)
 - Increase investment in low carbon options
- Progress in renewables would need to mirrored in other sectors

Strengthening the Global Response in the Context of Sustainable Development and Efforts to Eradicate Poverty

Climate change and people

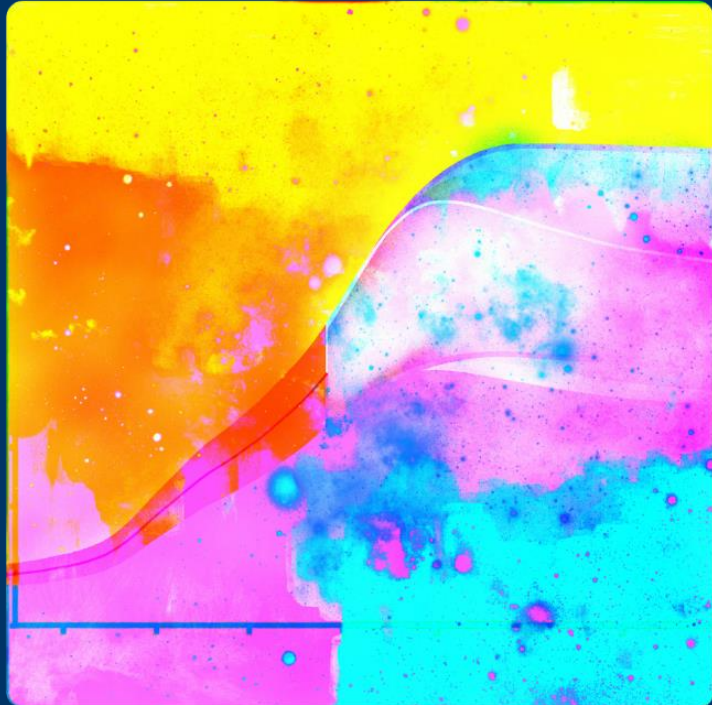
- Close links to United Nations Sustainable Development Goals (SDGs)
- Mix of measures to adapt to climate change and reduce emissions can have benefits for SDGs
- National and sub-national authorities, civil society, the private sector, indigenous peoples and local communities can support ambitious action
- International cooperation is a critical part of limiting warming to 1.5°C

Climate change and people

- The avoided climate change impacts on sustainable development, eradication of poverty and reducing inequalities would be greater at 1.5°C rather than 2°C, and if mitigation and adaptation synergies are maximized while trade-offs are minimized
- Strengthened multi-level governance, institutional capacity, policy instruments, technological innovation and transfer and mobilization of finance, and changes in human behaviour and lifestyles are enabling conditions that enhance the feasibility of mitigation and adaptation options for 1.5°C consistent systems transitions

Conclusions

- Limiting global warming to 1.5°C is feasible and would require rapid, far reaching and unprecedented changes in all aspects of society.



Q&A

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