The Heat Is On

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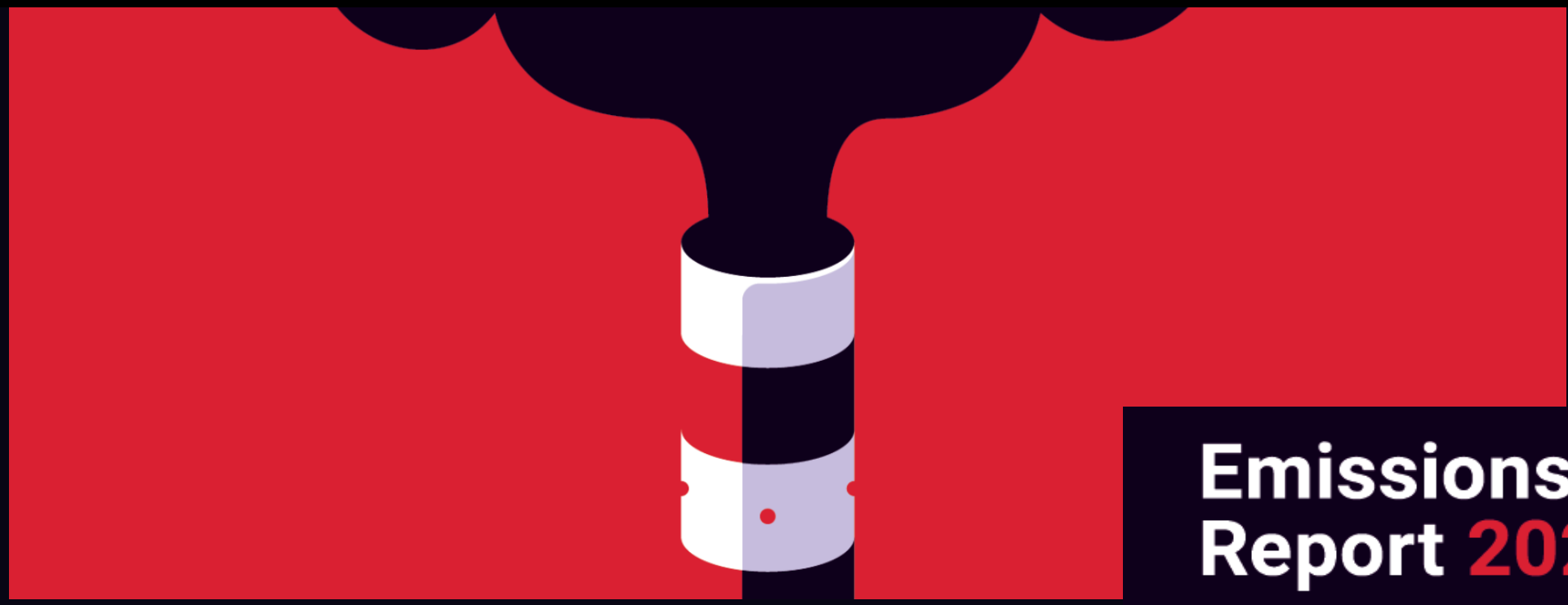
The Emissions Gap: How Far Are We from the Goals of the Paris Agreement?

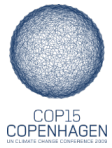


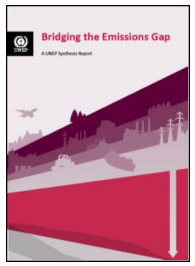
Emissions Gap Report 2021

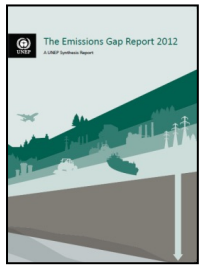
Kleinman Center for Energy Policy Event ♦ 15 March 2022

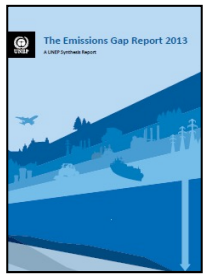
Emissions Gap Reports

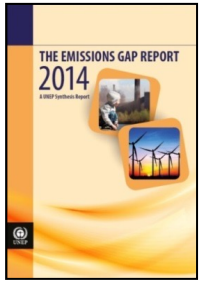
Annual science-based assessment reports since 2010

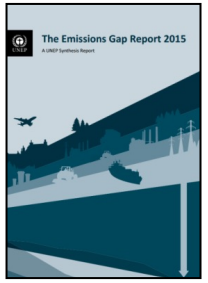


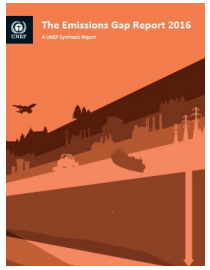


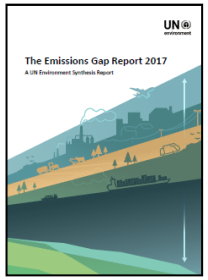












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Background: from Copenhagen to Paris, Glasgow, …

…and beyond

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Emissions Gap Report 2021: Key questions

Where are we?

- What are the latest trends in global greenhouse gases?

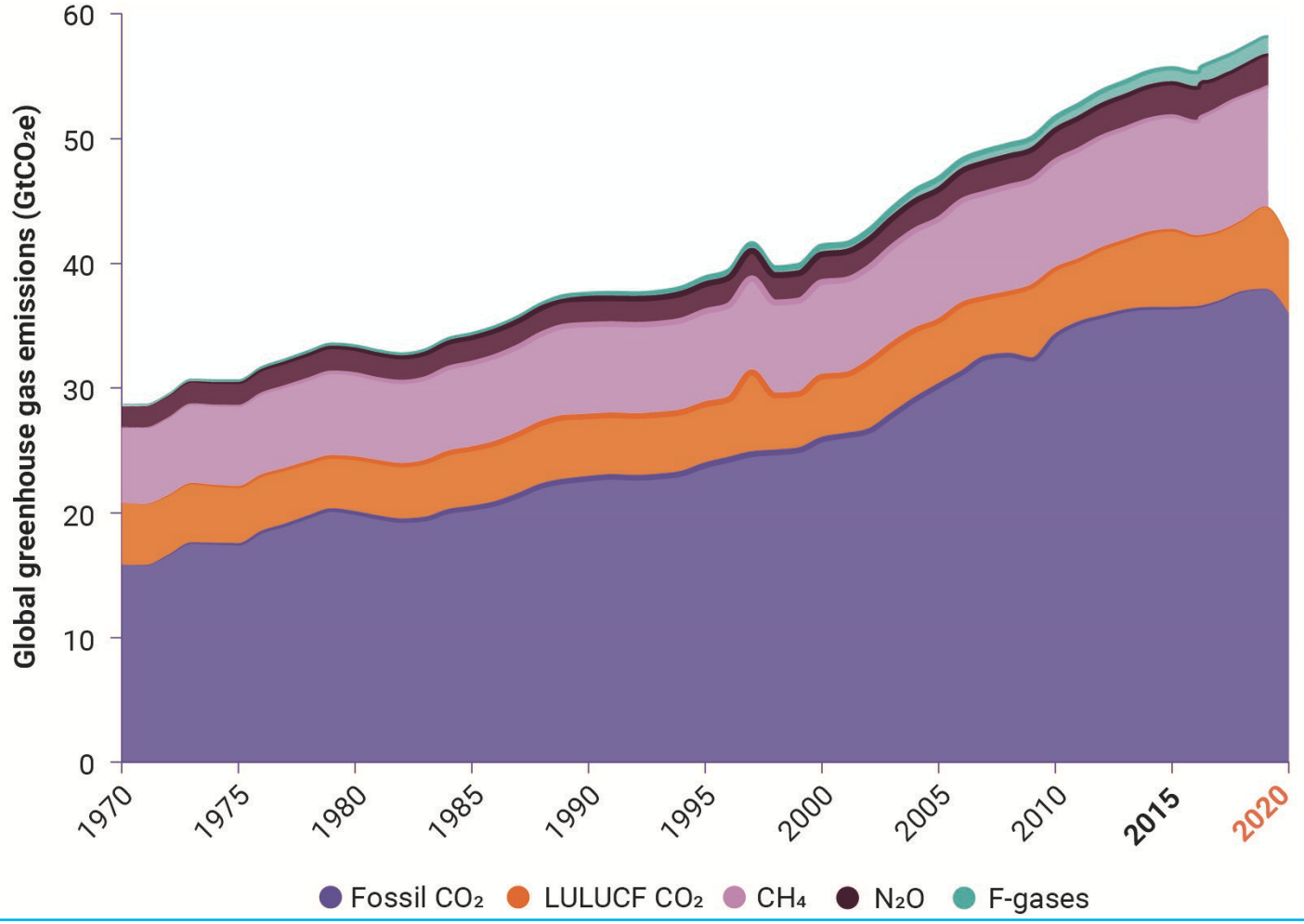
Where are we headed and where should we be?

- What is the impact of submitted and announced mitigation pledges on 2030 emissions and on the emissions gap?
- What are the implications for global warming at the end of the century?
- What is the status of net-zero emission pledges, and are near-term actions and targets for 2030 aligned with these pledges?

How do we get there?

- Bridging the gap:
  - ➢ COVID-19 fiscal recovery measures
  - ➢ Anthropogenic methane emissions
  - ➢ Market mechanisms

Global greenhouse gas emissions dropped in 2020 due to COVID-19, but are bouncing back



2020 data only available for fossil and LULUCF CO_2

- Global GHG emissions increased 1.4% per year from 2010 to 2019
- CO_2 emissions dropped by an unprecedented 5.4% in 2020
- Data not available for all GHGs but the drop in total emissions in 2020 anticipated to be smaller
- Strong rebound expected in 2021

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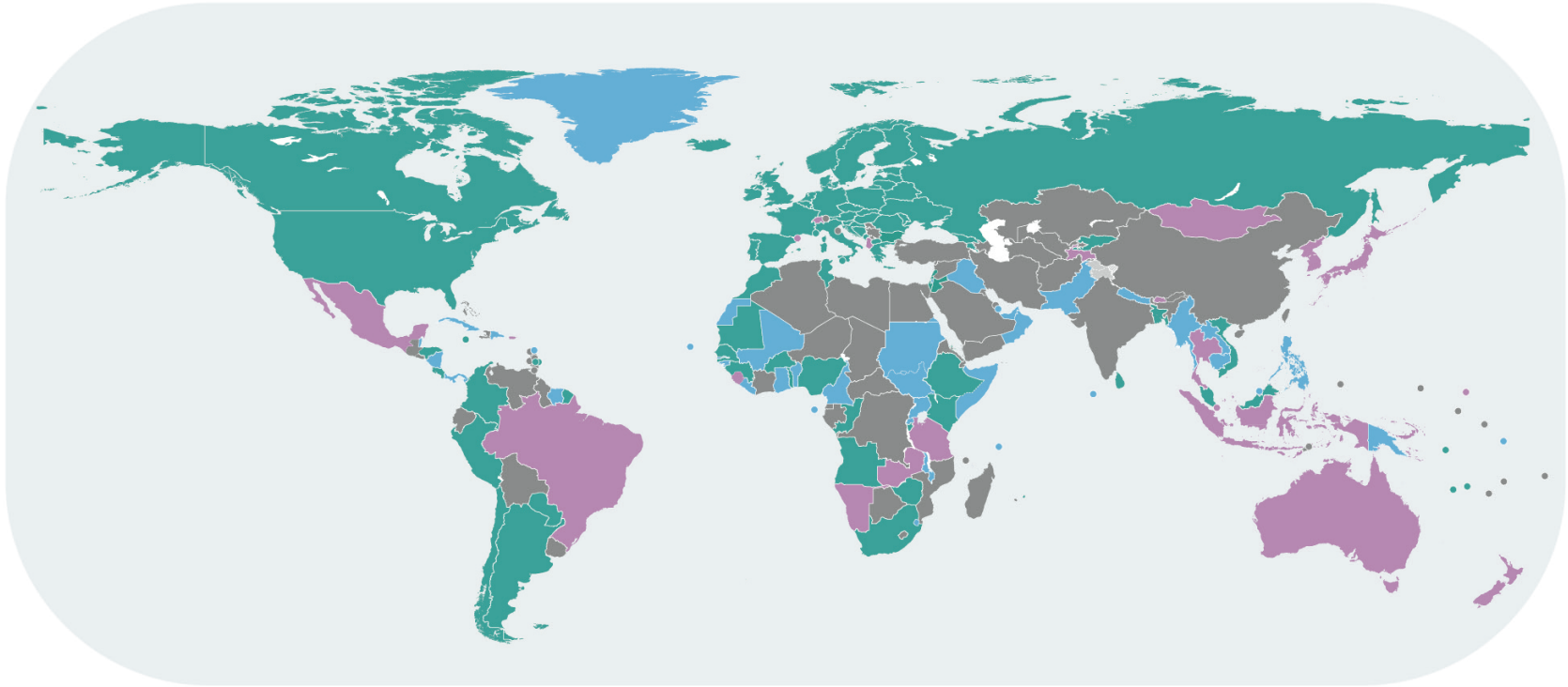
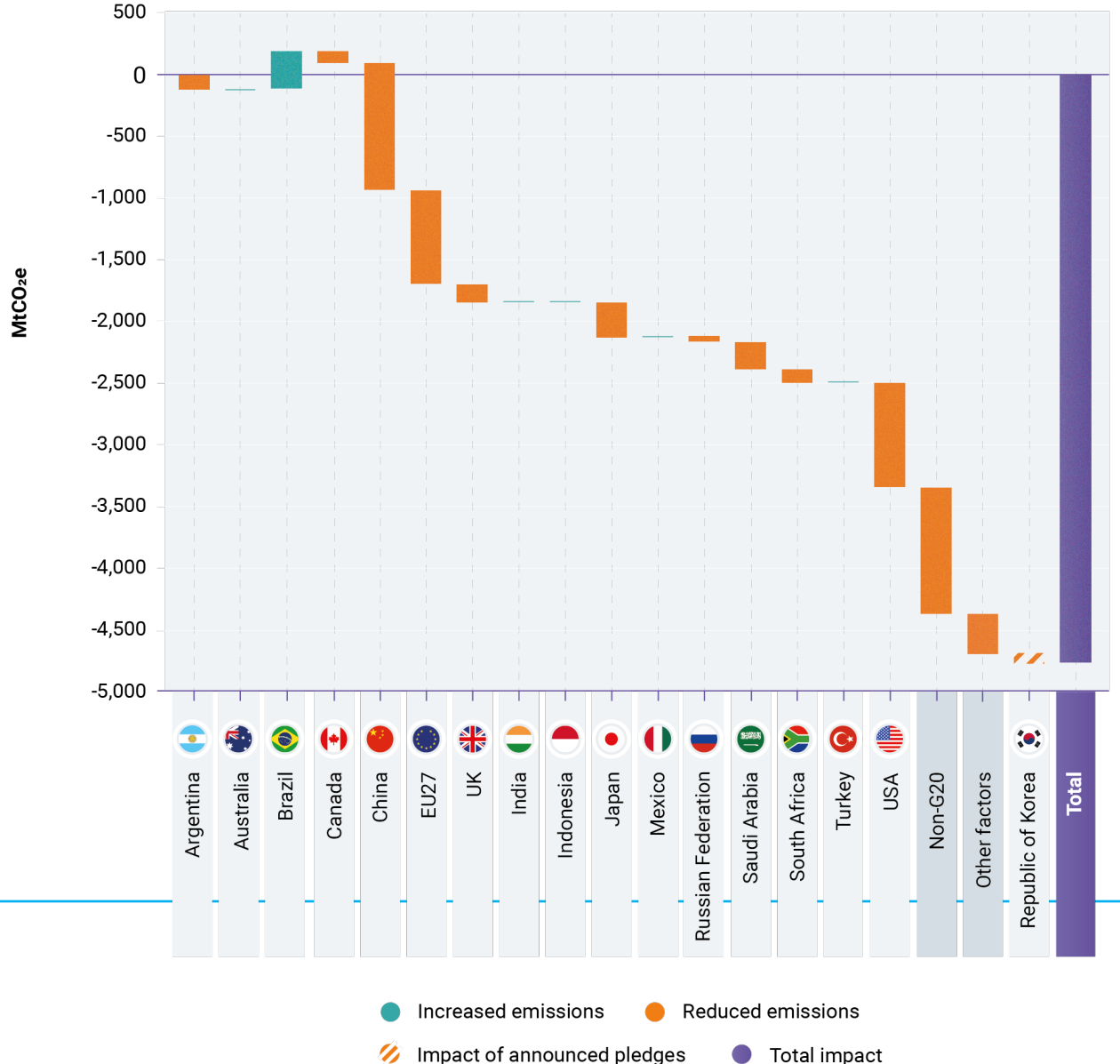
New and updated NDCs show some progress



- By 4 November 2021, 150 parties, covering 81% of global emissions, had communicated new or updated NDCs
- Over 60% of these had lower 2030 emissions
- Around 13% imply equal or higher 2030 emissions
- The effect of the remaining NDCs is unclear as they are not comparable to the prior NDCs
- The NDCs are generally more transparent and more include GHG targets than prior NDCs

However, the aggregate impact of mitigation pledges on projected global greenhouse gas emissions in 2030 is limited



- The aggregate impact of all new or updated unconditional NDCs and other announced pledges as at 4 November 2021 is estimated to lead to a total reduction in 2030 global GHG emissions of about 4.8 $GtCO_2e$ compared with prior pledges
- This reduction is about 0.7 $GtCO_2e$ greater than that reported in the Emissions Gap Report 2021

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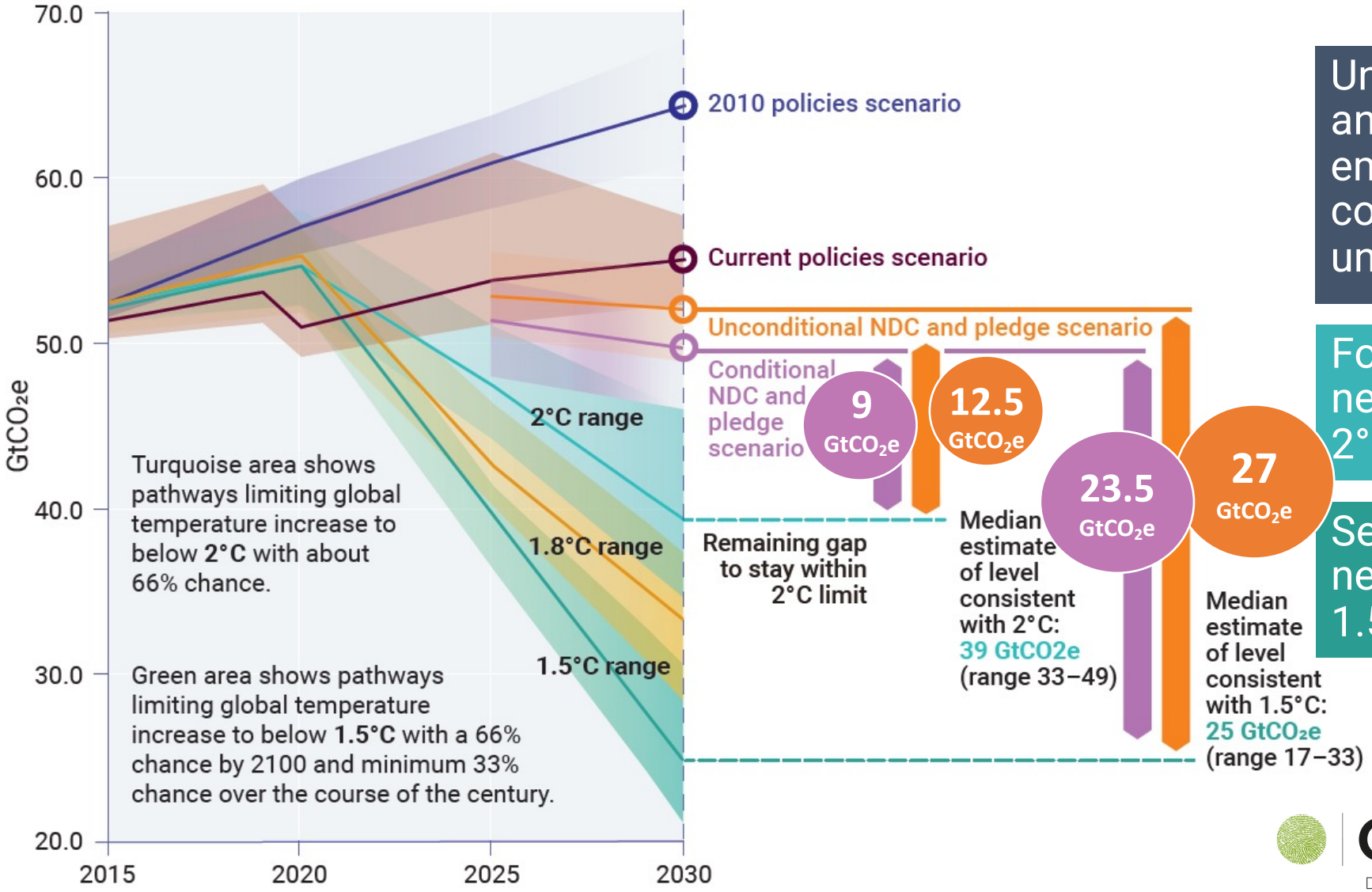
The emissions gap in 2030 remains large



Unconditional NDCs and announced pledges lower emissions in 2030 by 8% compared to prior unconditional NDCs

Four times higher ambition needed to get on track to 2°C

Seven times higher ambition needed to get on track to 1.5°C

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A promising development is the net-zero emissions pledges made by 74 parties, covering three quarters of global greenhouse gas emissions

Global snapshot

- Net-zero pledges by 74 parties (↑ from 50), covering 76% of global domestic GHG emissions (↑ from 57), 83% of gross domestic product (↑ from 60) and 64% of the global population (↑ from 34)
- 12 targets are in law (↑ from 11), 34 in policy documents (↑ from 24) and 28 are government announcements (↑ from 15)

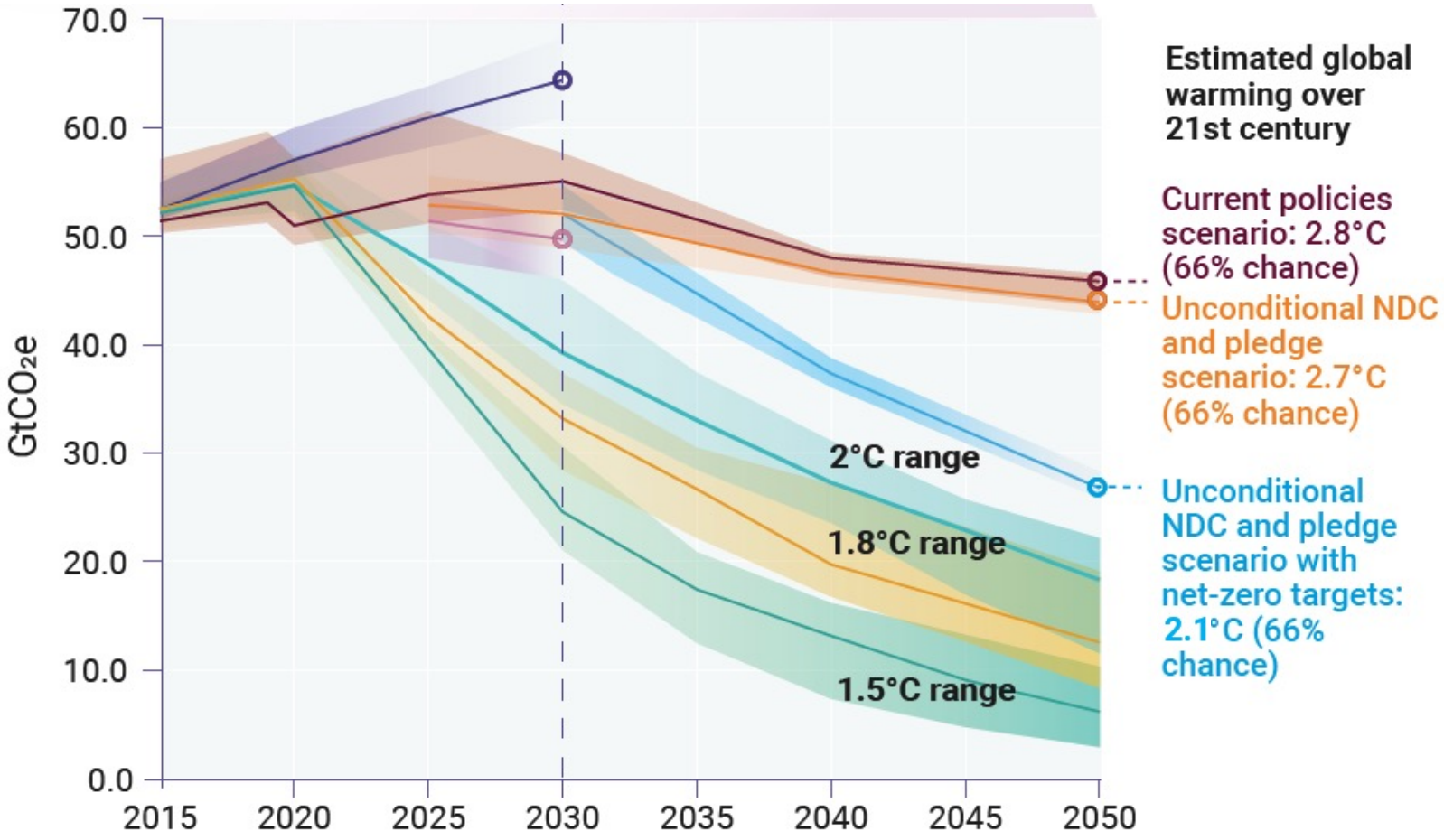
G20 snapshot

- Net-zero pledges by 17 G20 members (↑ from 12), covering 69% of global domestic GHG emissions (↑ from 54)
- Seven are in law (↑ from 6), four are in policy documents (↑ from 2) and six are government announcements (↑ from 4)
- Most are for the year 2050; one for 2045 (Germany), one for 2053 (Turkey), three for 2060 and one for 2070 (India).

Common ambiguities

Sectors and gases covered; inclusion of offsets and of international aviation and shipping emissions; lack of transparency regarding the plans for achievement and on reporting and reviewing progress

Global warming implications at the end of the century under 2030 pledges and net-zero targets



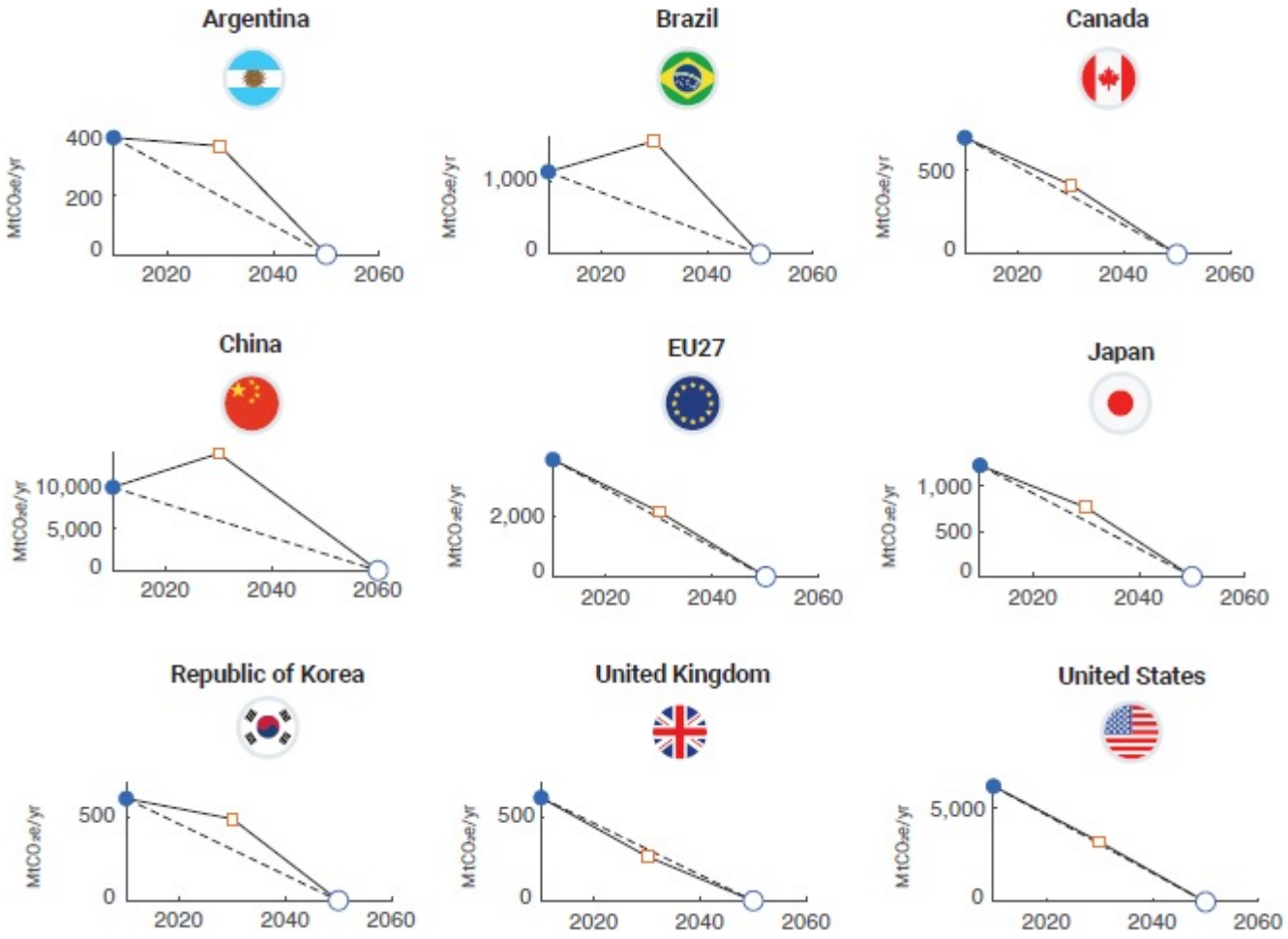
Full implementation of the net-zero pledges in addition to 2030 pledges, would bring global warming levels closer to the Paris Agreement temperature goal

But we need to get there: Collectively, G20 members are neither on track to achieve their original nor their new 2030 pledges

		Projected progress towards the previous NDC target [*x* studies meet the target/out of *y* studies]		
		Achieve previous target (indicated by +, if overachieved by more than 15 per cent)	Miss previous target	Uncertain
Status of NDC or announced target	Submitted stronger target	Argentina [3/3], EU27 [in Emissions Gap Report 2020 for EU27+UK; 1/3, one within reach],[1,2] Russian Federation+ [4/5],[1] South Africa [3/3], UK (formerly part of the EU)	USA [0/5], Canada [1/3]	
	Announced stronger target	China [4/6], Japan [3/3]	Republic of Korea [0/3][3]	
	No new target submitted	India+ [4/6], Saudi Arabia [2/2], Turkey+ [3/3]		
	Submitted equivalent or weaker target		Australia [1/4], Brazil [1/4, one within reach], Mexico [0/3]	Indonesia [0/3, two within reach]

- Ten G20 members are on track to achieve their previous NDCs, while seven are still off track
- Assessed against current policy scenarios, the G20 as a group is projected to fall short of achieving their original unconditional NDCs by 1.1 $GtCO_2e$ annually
- Six new or updated NDCs and three announcements by G20 members with enhanced mitigation pledges (as of 30 Sept 2021)

Few of the G20 members' 2030 pledges put emissions on a clear path towards net zero



There is an urgent need to enhance ambition and accelerate action to bridge the emissions gap and set global emissions on a credible path towards net zero to keep the temperature goal of the Paris Agreement achievable

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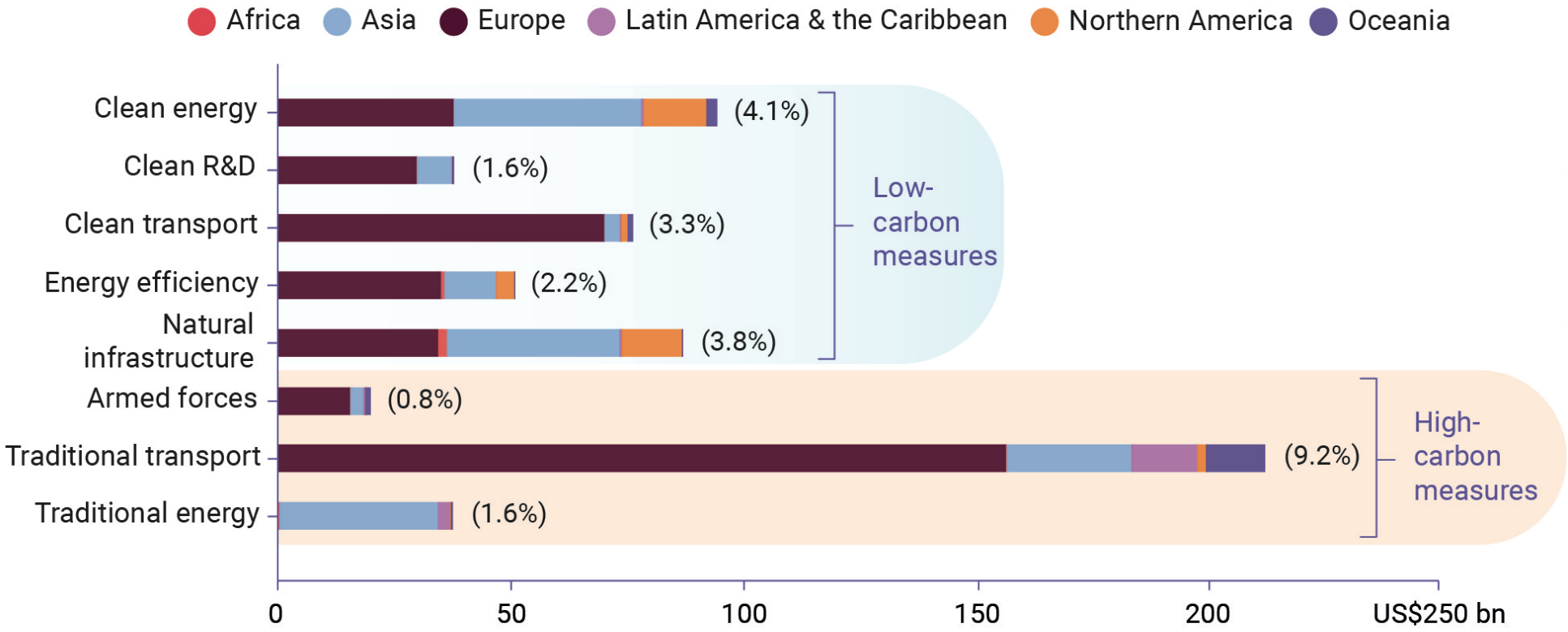
Opportunities to bridge the gap and get on track to net zero: COVID-19 fiscal measures

Global recovery spending as at May 2021 across sectors by region (US$ billion). Low-carbon initiatives (top) and high-carbon initiatives (bottom)



- Approximately US$16.7 trillion was spent on COVID-19-related rescue and recovery packages to May 2021
- Of this, US$2.25 trillion is considered recovery spending.
- Only around 17–19 per cent (US$390–440 billion) of the recovery spending is likely to reduce GHG emissions

Opportunities to bridge the gap and get on track to net zero: methane

Reducing methane emissions can:

- Slow down the rate of warming in the short term
- Reduce peak warming during this century
- Help bridge the emissions gap

Untapped potential:

- Current NDCs only cover about one third of the methane reduction required to be consistent with a 2°C temperature goal, and about 23 per cent of what is needed for the 1.5°C goal.

Fossil Fuels

Using existing technologies to reuse methane leaking from oil, gas and coal facilities can reduce the sector's emissions by **40-50%** by 2030 - much of it at net-zero cost.

Agriculture

Measures such as changing rice growing patterns, breeds of cattle and their diets can reduce the sector's emissions by **20%** by 2030.

Waste

Actions such as diverting organic material from landfills or capturing landfill gas can reduce the sector's emissions by **35-40%** by 2030.

Opportunities to bridge the gap and get on track to net zero: market mechanisms

- Markets can provide an opportunity for countries, companies and other actors to achieve their emission reduction goals at lower costs
- The number of countries that in their new or updated NDCs have indicated the planned or possible use of voluntary cooperative approaches has almost doubled compared to the previous NDCs, indicating significantly increased interest
- Carbon markets can deliver real emissions abatement and drive ambition, but only when rules are clearly defined, designed to ensure that transactions reflect actual reductions in emissions, and supported by arrangements to track progress and provide transparency

Looking ahead

- The Glasgow Climate Pact
- The road to COP 27
- The Sixth Assessment Report of the Intergovernmental Panel on Climate Change
- Plans for this year's Emissions Gap Report

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Thank you

On behalf of the 78 authors,
13 steering committee members
and the production team of the report

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