

## Pulling the plug on fossil fuels in power

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19 September 2023

[www.climateactiontracker.org](http://www.climateactiontracker.org)

# Agenda

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Taking stock of climate action

1.5°C aligned power sector benchmarks

Are countries pulling the plug on fossils?

Q & A

# TAKING STOCK OF CLIMATE ACTION

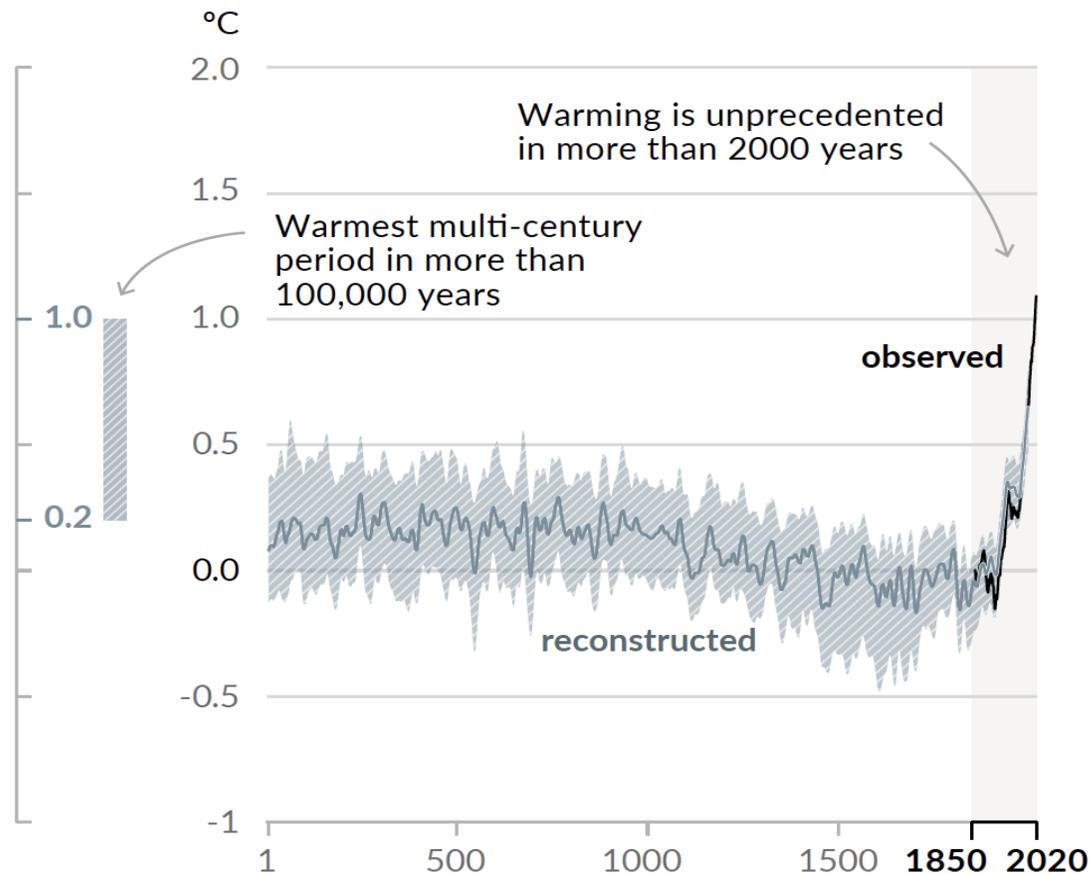
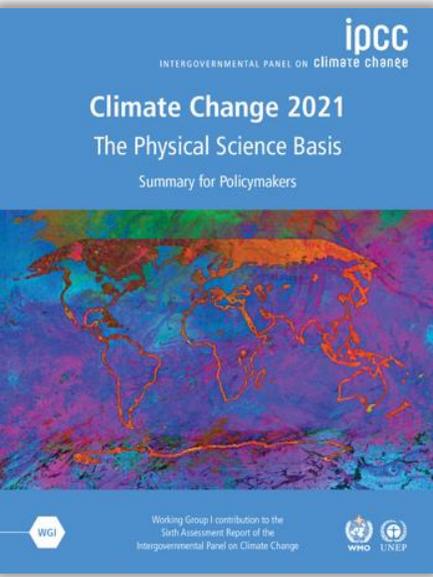
Bill Hare (Climate Analytics)

# Global Stocktake finds we're off track to meet our climate goals



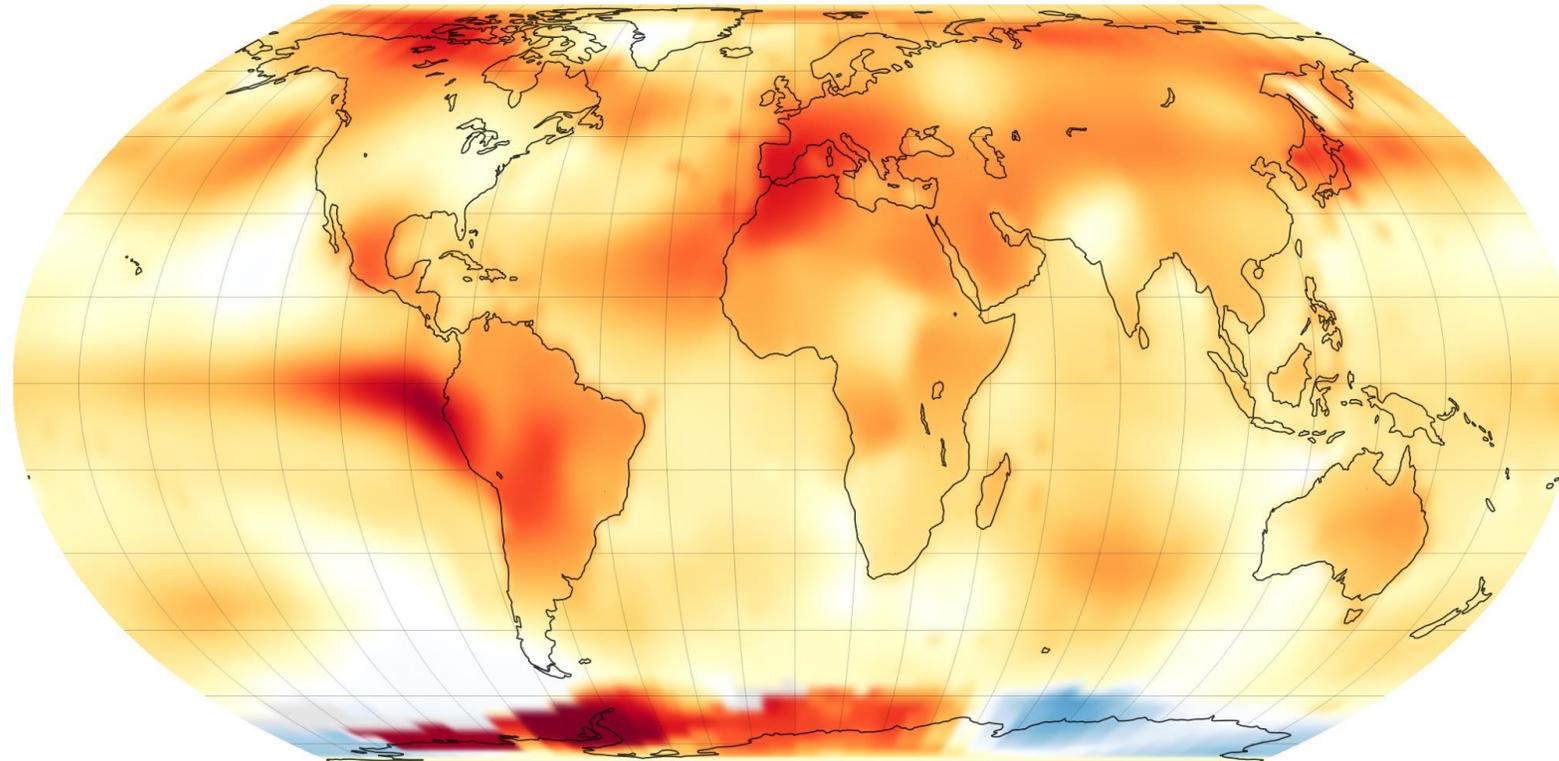
- Paris Agreement NDC commitments lead to 2030 emissions far above 1.5 °C compatible levels
- World needs to ramp up renewables & phase out fossil fuels
- It is still possible to limit warming to 1.5°C but we need to act now

# IPCC AR6: Recent changes are unprecedented



- “The scale of recent changes across the climate system as a whole and the present state of many aspects of the climate system are **unprecedented over many centuries to many thousands of years.**”
- CO<sub>2</sub> concentrations: Highest in 2 million years
- CH<sub>4</sub> and N<sub>2</sub>O highest in 800,000 years
- Temperatures: above any period in the last 125,000 years

# NASA announces summer 2023 hottest on record



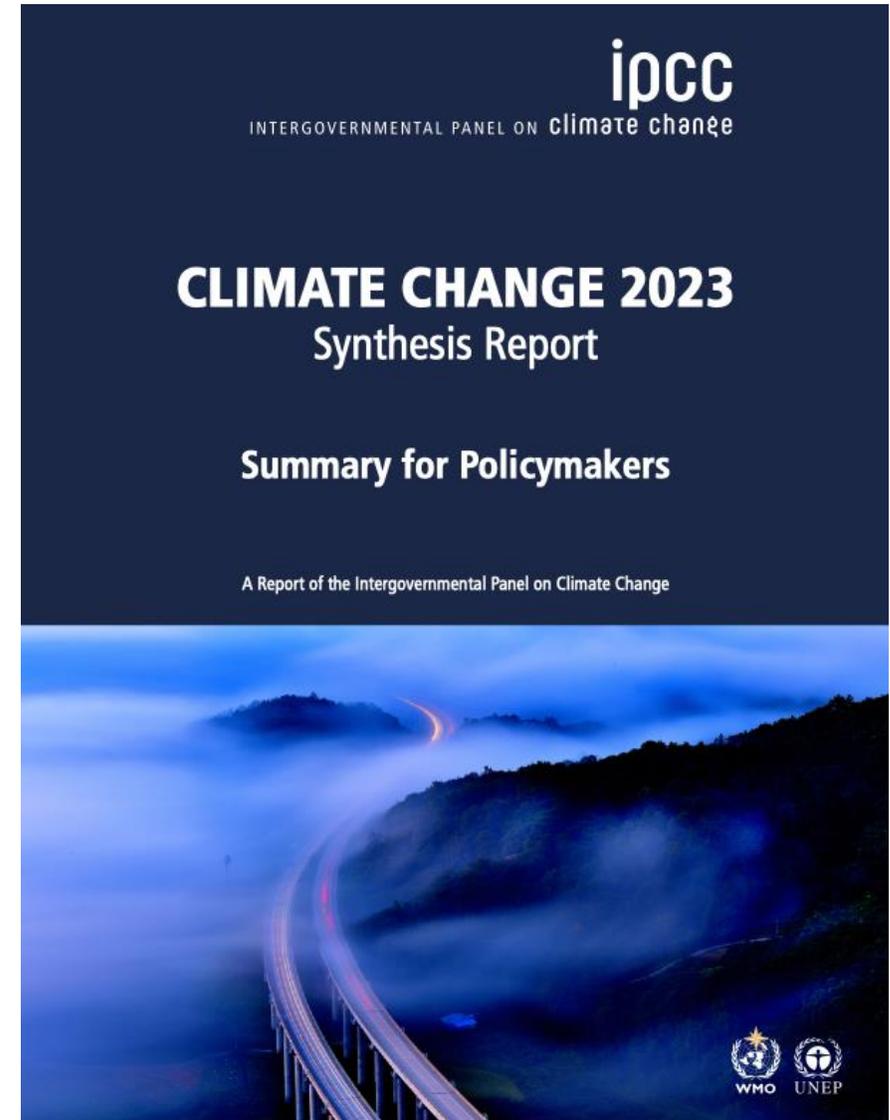
June, July, and August Global Temperature Anomaly (°C compared to 1951-1980 average)



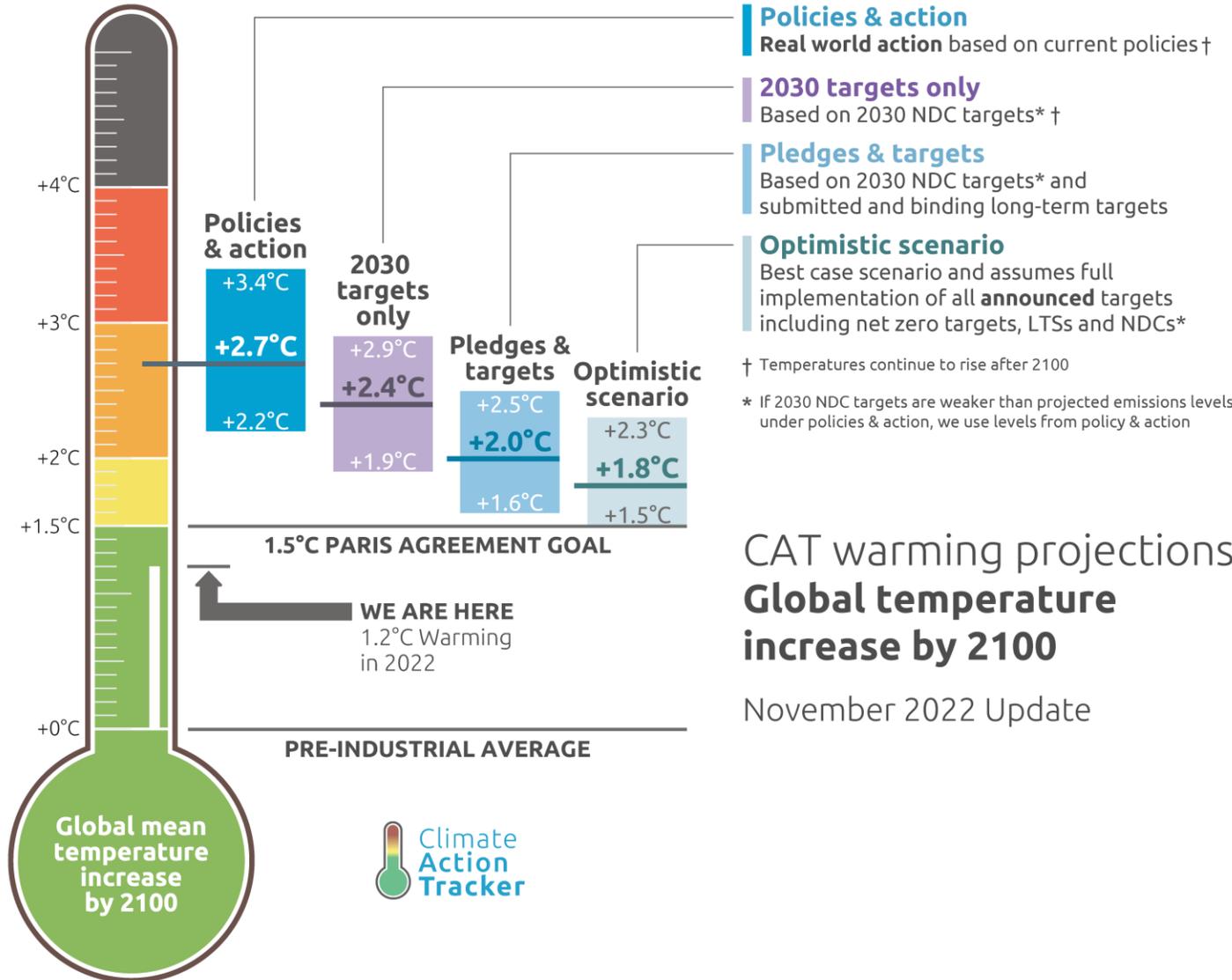
<https://climate.nasa.gov/news/3282/nasa-announces-summer-2023-hottest-on-record/>

# Recording breaking heat is ringing alarm bells

- Extreme weather events from this year are a result of roughly 1.2°C of warming
- The best available science tells us that limiting warming to 1.5°C is essential to avoiding the worst of climate change
- Peaking emissions by 2025 and halving them by 2030 is the best route we have to limit warming to 1.5°C



# Lack of near-term ambition is leading us to 2.4°C of warming



**Policies & action**  
Real world action based on current policies †

**2030 targets only**  
Based on 2030 NDC targets\* †

**Pledges & targets**  
Based on 2030 NDC targets\* and submitted and binding long-term targets

**Optimistic scenario**  
Best case scenario and assumes full implementation of all **announced** targets including net zero targets, LTSs and NDCs\*

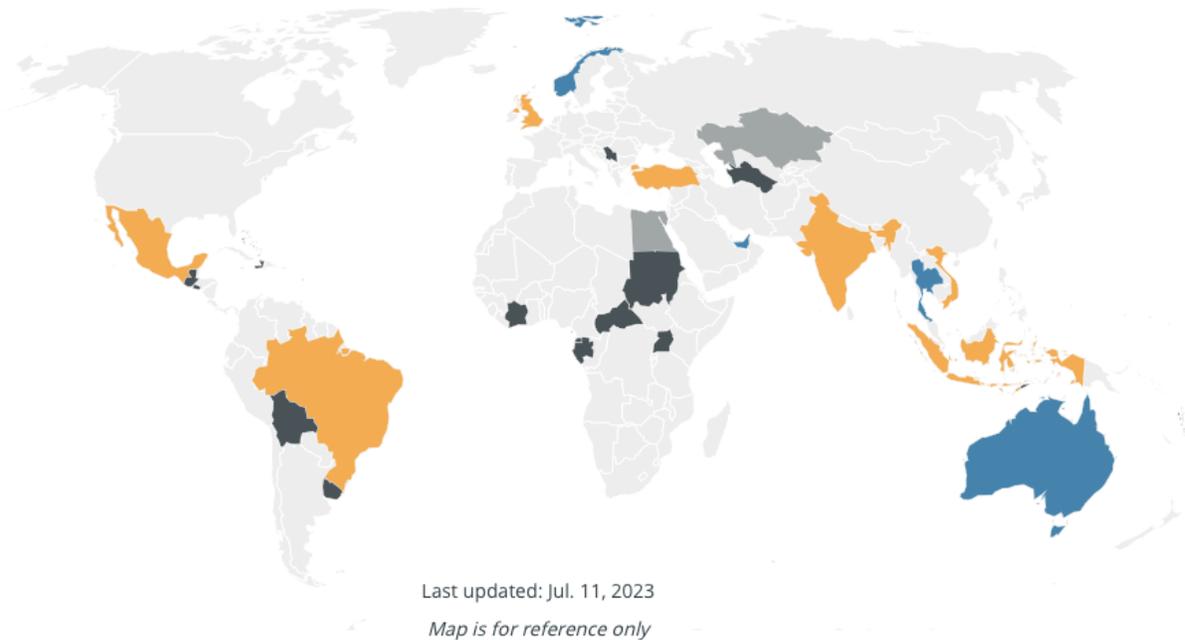
† Temperatures continue to rise after 2100

\* If 2030 NDC targets are weaker than projected emissions levels under policies & action, we use levels from policy & action

CAT warming projections  
**Global temperature increase by 2100**  
November 2022 Update

- **2030 targets** alone lead to end of century warming of 2.4°C
- Under **current policies**, end of century warming will be 2.7°C
- Our **most optimistic scenario** which includes all announced net zero targets, reaches 1.8°C. This looks like progress, but **1.5°C would still be pushed well out of reach.**
- **Policy** implementation is too slow. We urgently need faster emissions cuts to 2030

# There has been barely any progress since COP26



## CLIMATE TARGETS NDC updates since 2022

**36** Submitted an update

- 5** Stronger NDC target
- 7** Did not increase ambition\*
- 22** Countries we do not analyse submitted new NDC
- 2** Submitted new NDC - analysis pending

**0** Proposed an update

- 0** Proposed stronger NDC targets
- 0** Proposed target not more ambitious
- 0** Countries we do not analyse proposed new target
- 0** Proposed new target - analysis pending

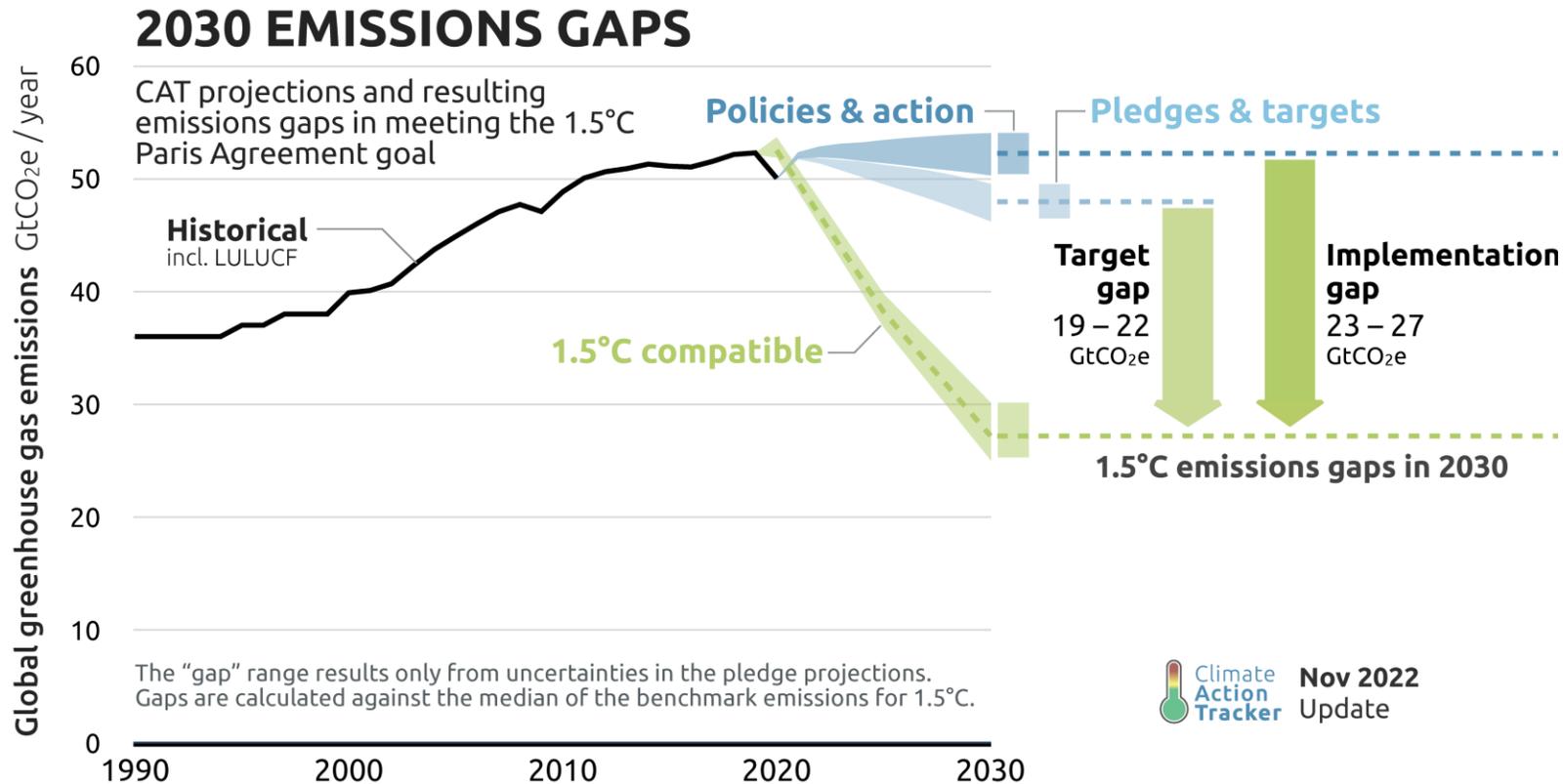
**159** Countries have not updated target

- Countries agreed to “revisit and strengthen” their NDCs in 2021, but little progress has been made so far

20.8% GLOBAL EMISSIONS COVERED BY NEW NDC SUBMISSIONS

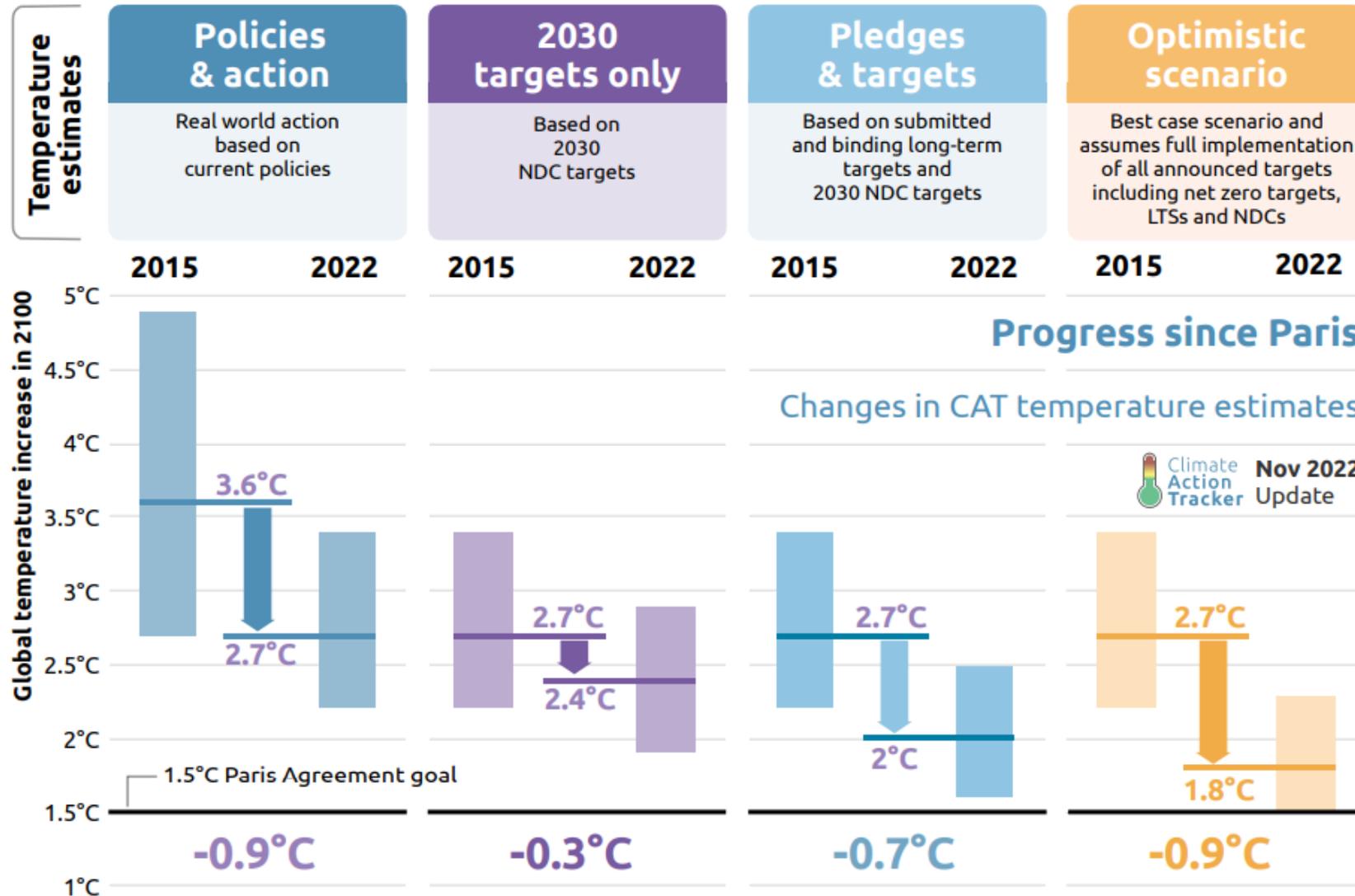
34.3% GLOBAL POPULATION COVERED BY NEW NDC SUBMISSIONS

# Governments need to step up on action and ambition

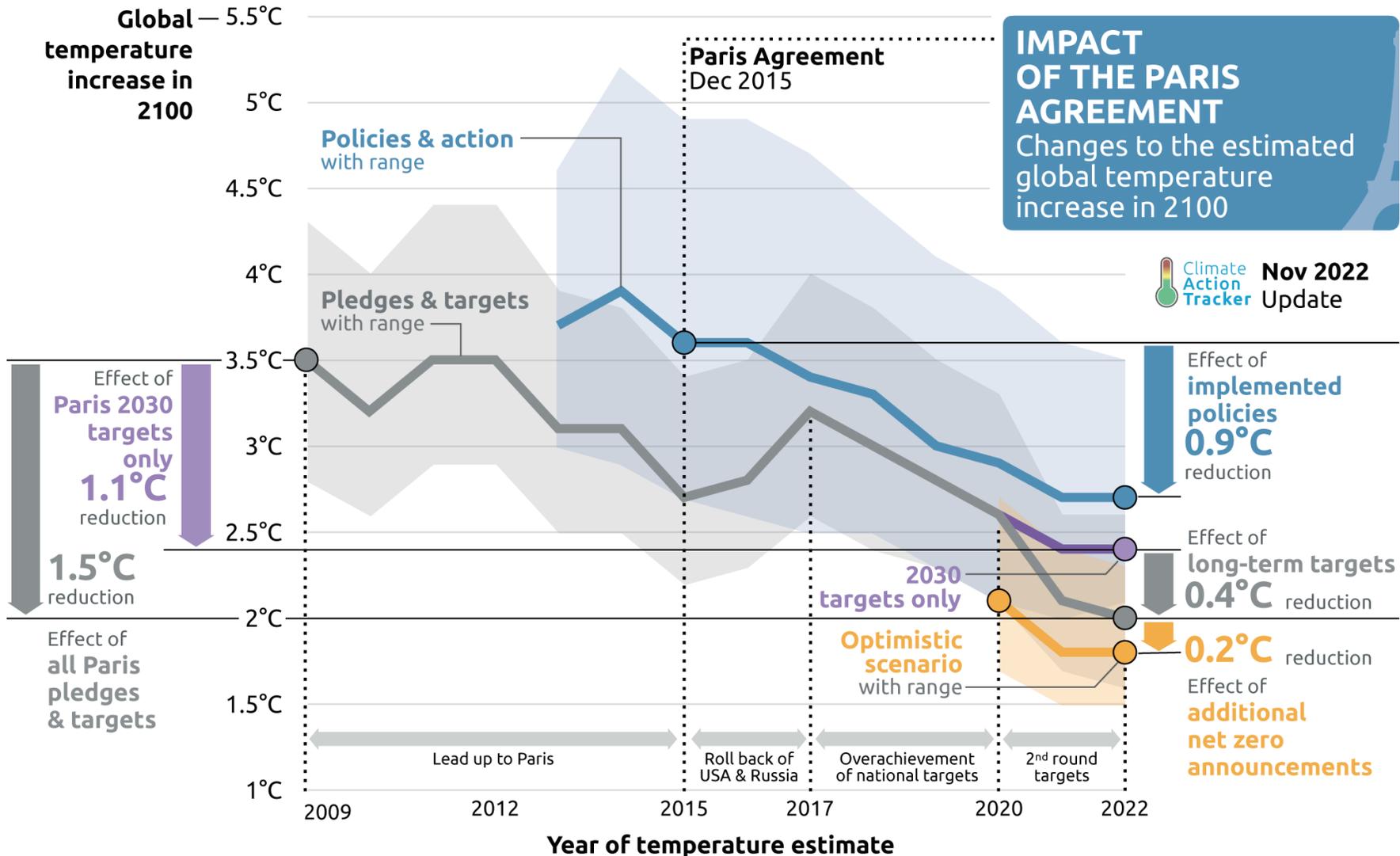


- To keep 1.5°C alive, we need to **halve** emissions from current levels by 2030
- Governments have been closing the targets emissions gap, but need to **accelerate policy implementation**

# There has been progress since the Paris Agreement



# There has been progress since the Paris Agreement (cont'd)



# Rapid ramp up of renewables is critical



- Increase new wind and solar capacity additions by fivefold to reach 1.5 TW per year by 2030
- Set a global renewables target of at least 80% of electricity generation by 2030, more than doubling today's share of around 30%

# G20 renewables target no substitute for clear fossil fuel phase out



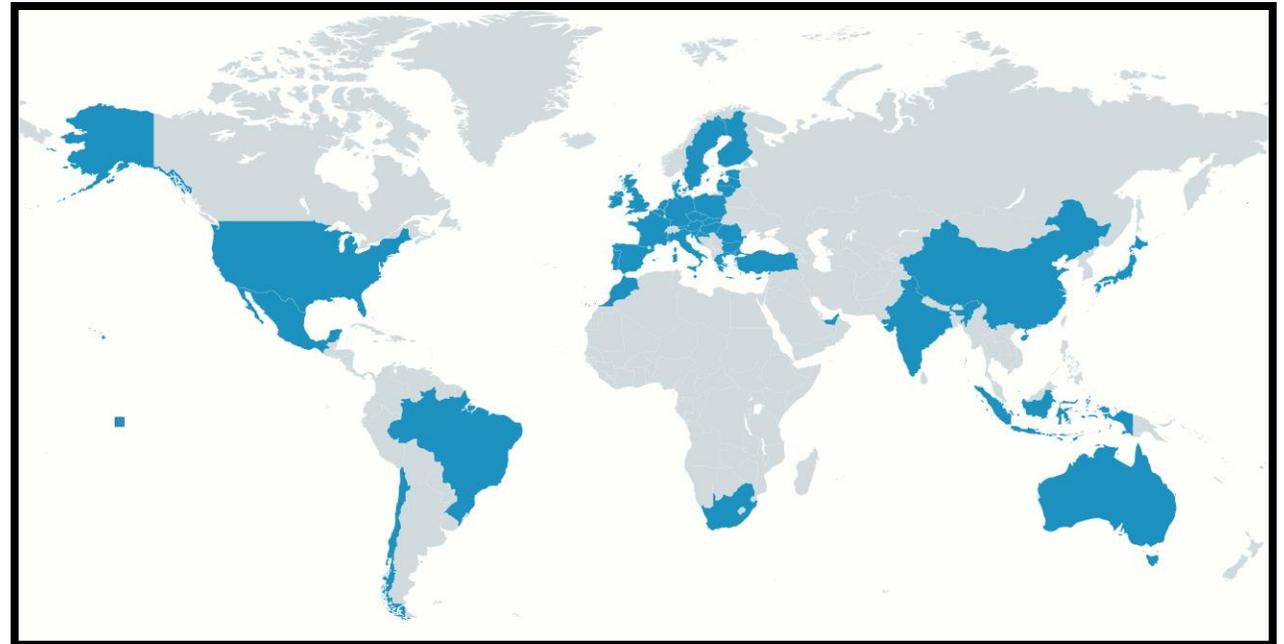
- Tripling renewable energy capacity globally by 2030 is minimum ambition – may need to go further
- ‘Phase down’ of unabated coal in power sector not enough
- Need a clear endgame for fossil fuels which G20 didn’t provide

# 1.5°C ALIGNED POWER SECTOR BENCHMARKS

Neil Grant (Climate Analytics)

- **1.5°C compatible power sector benchmarks**
  - Share of coal, fossil gas and renewables in the power system
  - Emissions intensity of electricity generation
- **For the world as a whole and sixteen countries**
  - Responsible for over 75% of global power sector emissions in 2019

**Countries selected for benchmark production**

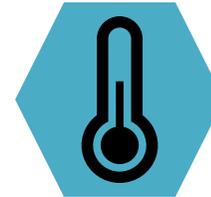


## Two lines of evidence



### Global perspective

- Global integrated assessment models
- Selected 32 pathways which avoid excessive CDR reliance
- Also have low fossil CCS deployment
- Downscaled to the national level



**Link back to  
1.5°C  
compatibility**



### National perspective

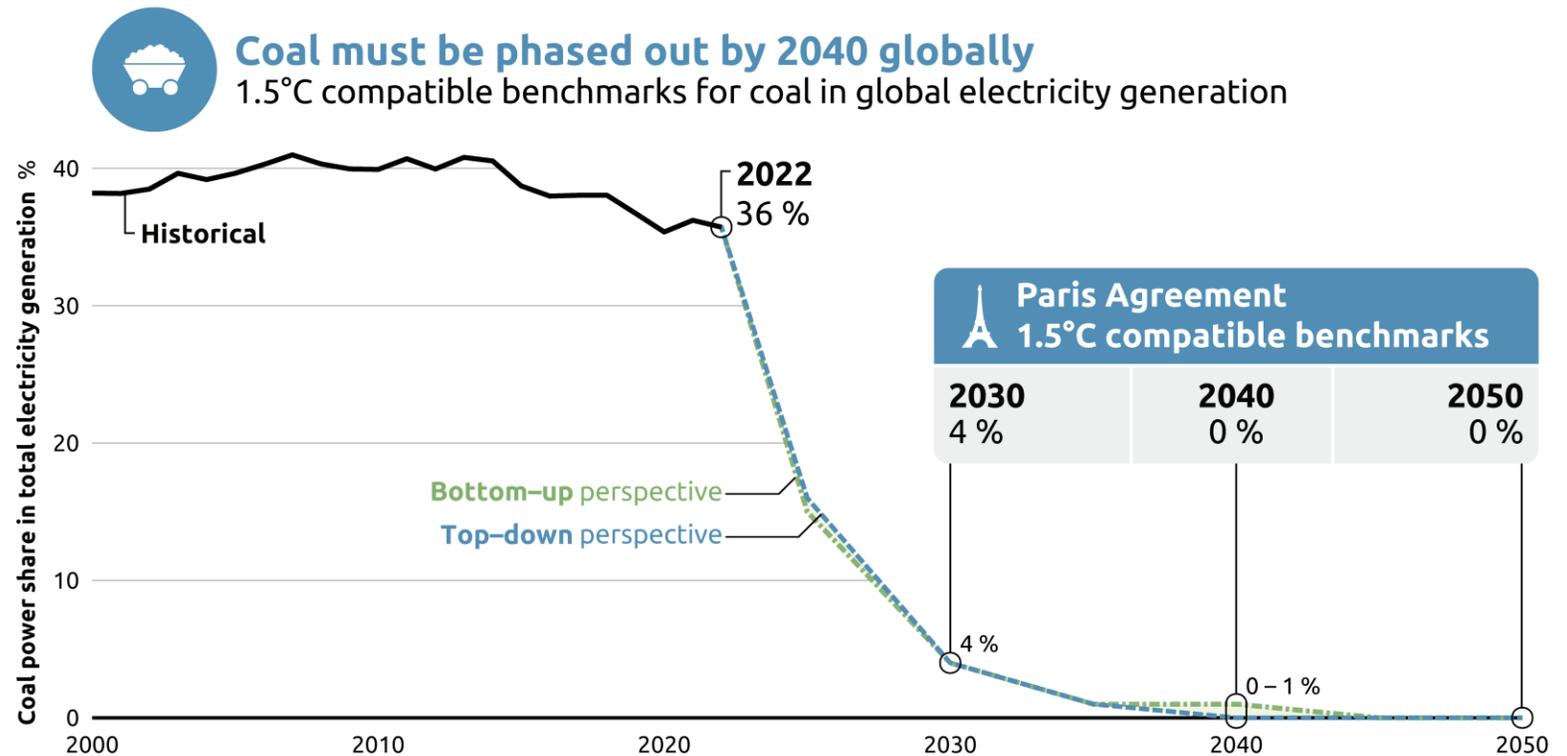
- >300 national studies reviewed
- >100 selected based on ambition, methodology and narrative
- Filtered for 1.5°C compatibility



**Representing  
national  
circumstances**

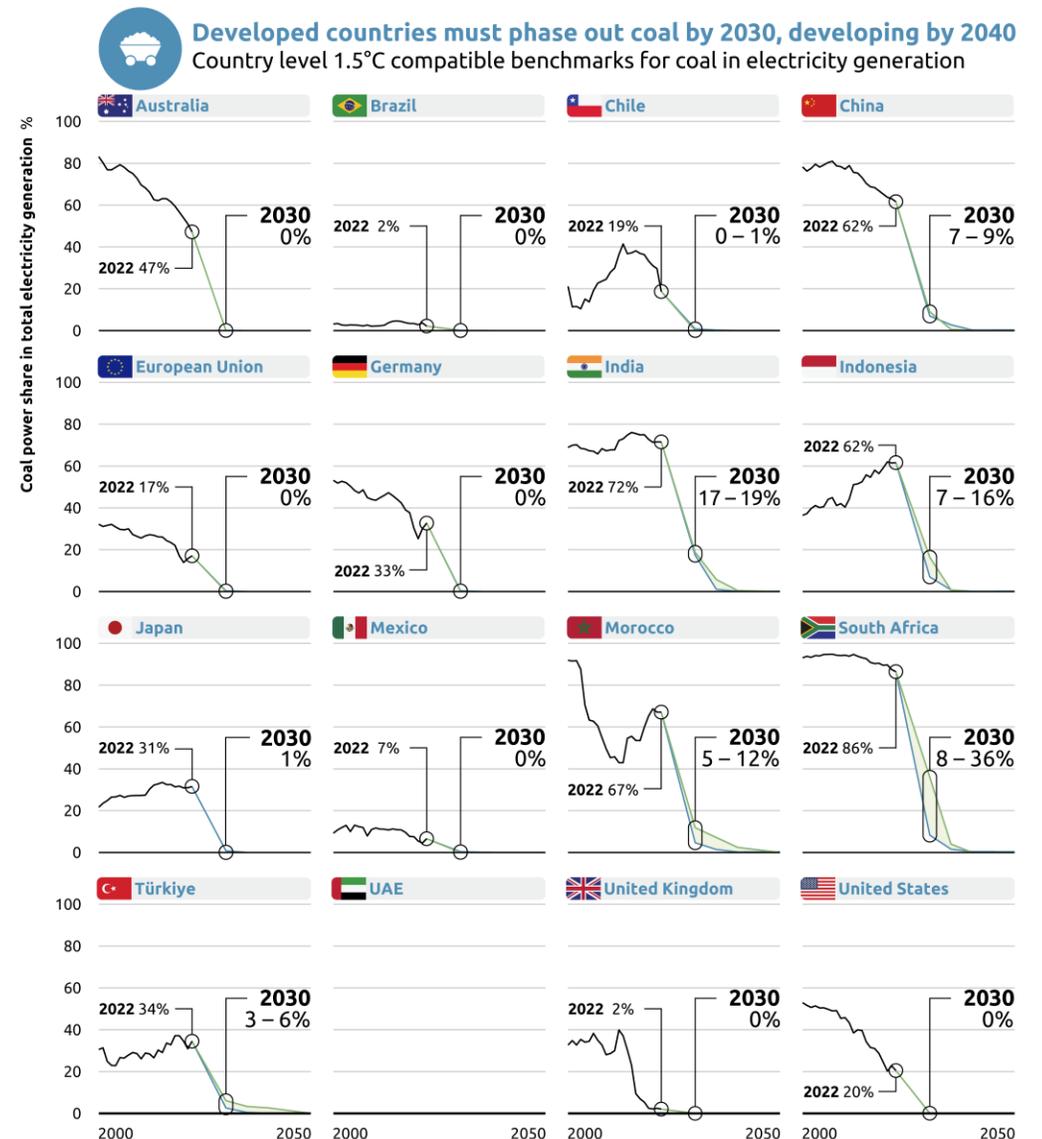
# A global coal phase-out in the power sector by 2040

- Coal power should be phased out globally by 2040 to limit warming to 1.5°C
- By 2030 coal should be providing <5% of global generation
- No room for coal equipped with CCS **anywhere** in the power sector



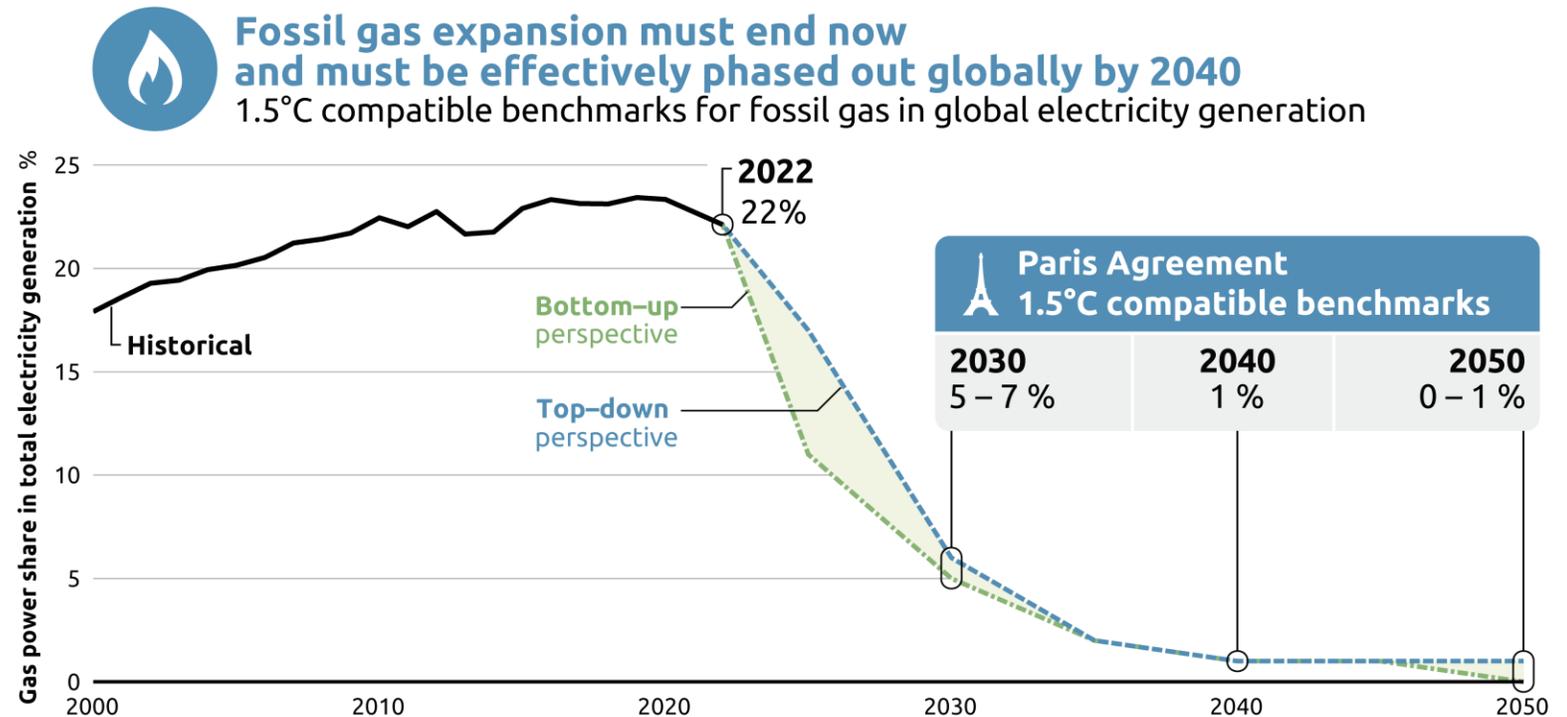
# A global coal phase-out in the power sector by 2040

- Developed countries need to phase out coal by 2030
- Developing countries phase out by 2040, but show strong reductions in coal generation by 2030
- This will require substantial international support to make a global coal phase-out fair



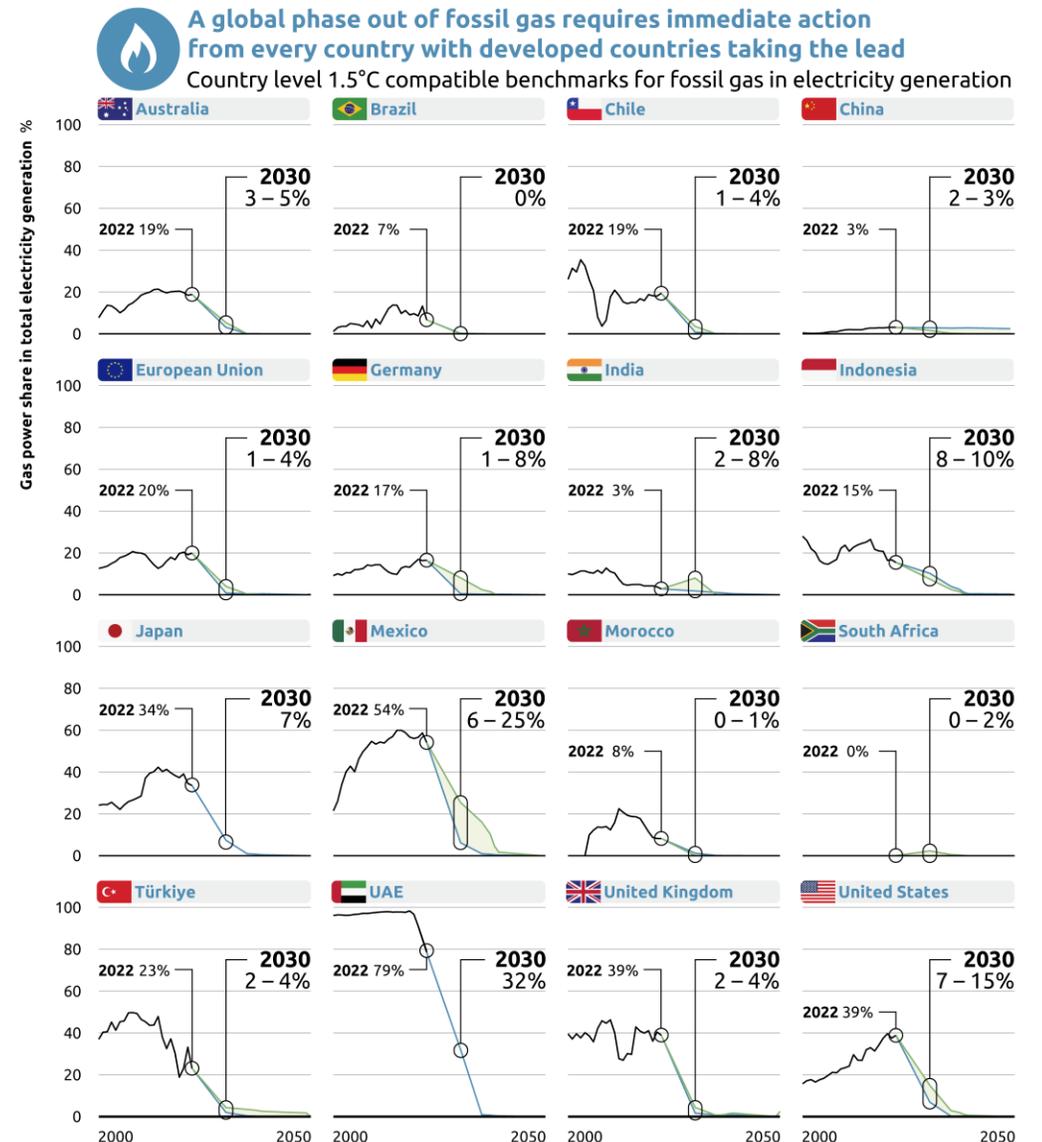
# Fossil gas use in the power sector must be rapidly reduced

- Fossil gas is not a bridging fuel and needs to be ~5% of generation by 2030
- The role of CCS for gas power plants is marginal at best
- Fossil gas generation should be effectively phased out by 2040



# Fossil gas use in the power sector must be rapidly reduced

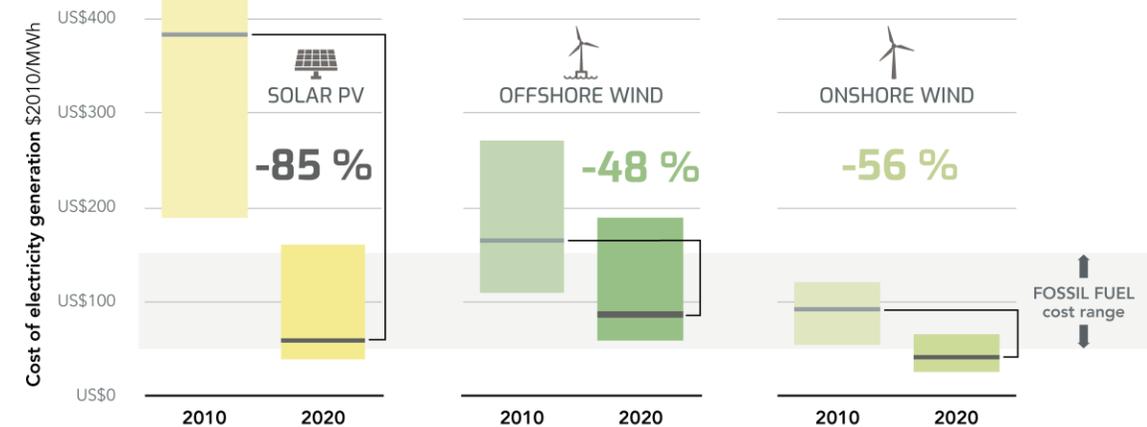
- Developed countries have greater fossil gas use in the power sector – they need to lead on the phase-out
- Developed countries should effectively phase out fossil gas by 2035 and achieve clean power
- Developing countries should avoid the gas development trap (e.g., India, South Africa) and phase out gas by 2040



# The benefits of avoiding the fossil gas trap

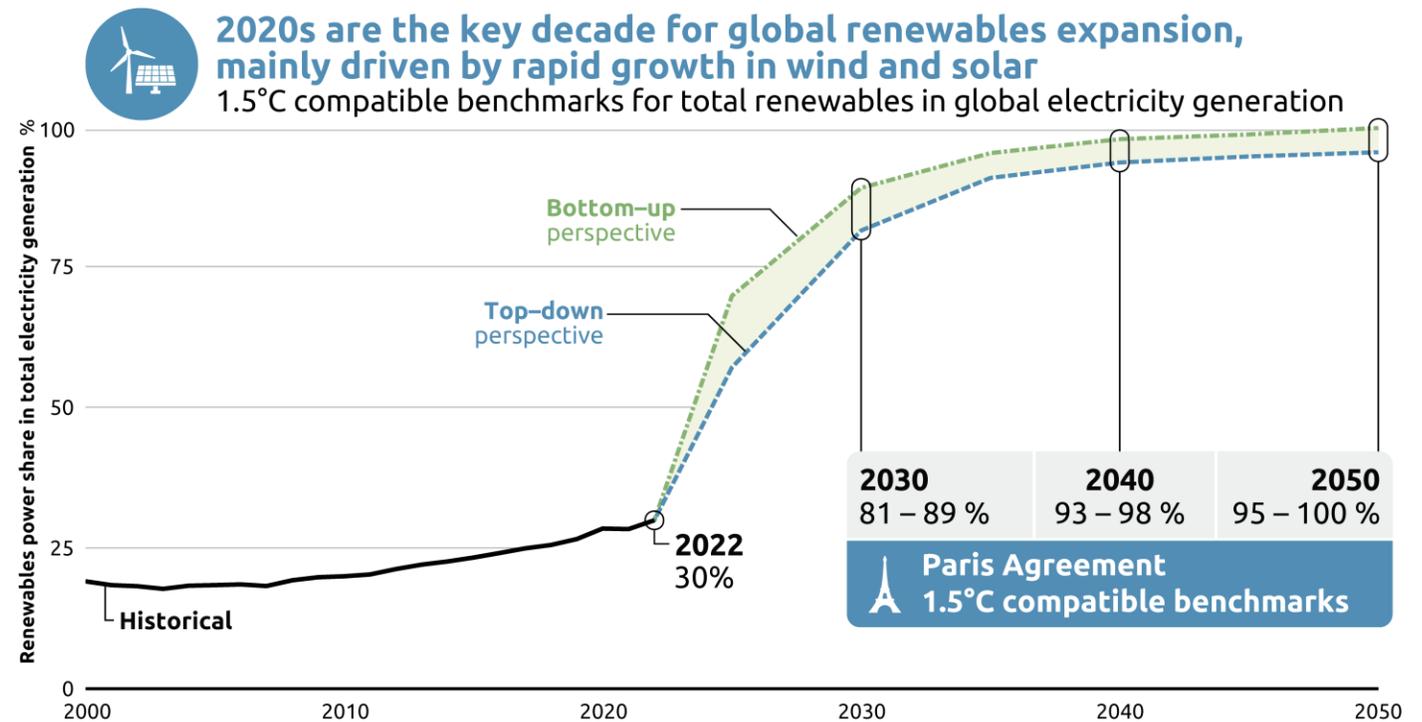
- Developing countries have huge untapped renewable potential, which is cheaper than fossil fuels
- Moving into fossil gas now is a recipe for stranded assets and additional debt burden
- Many developing countries are clear that the road ahead is renewables, not fossil gas
- Climate finance and the cost of capital for renewables need to be addressed

Wind and solar are now cost competitive with fossil fuels



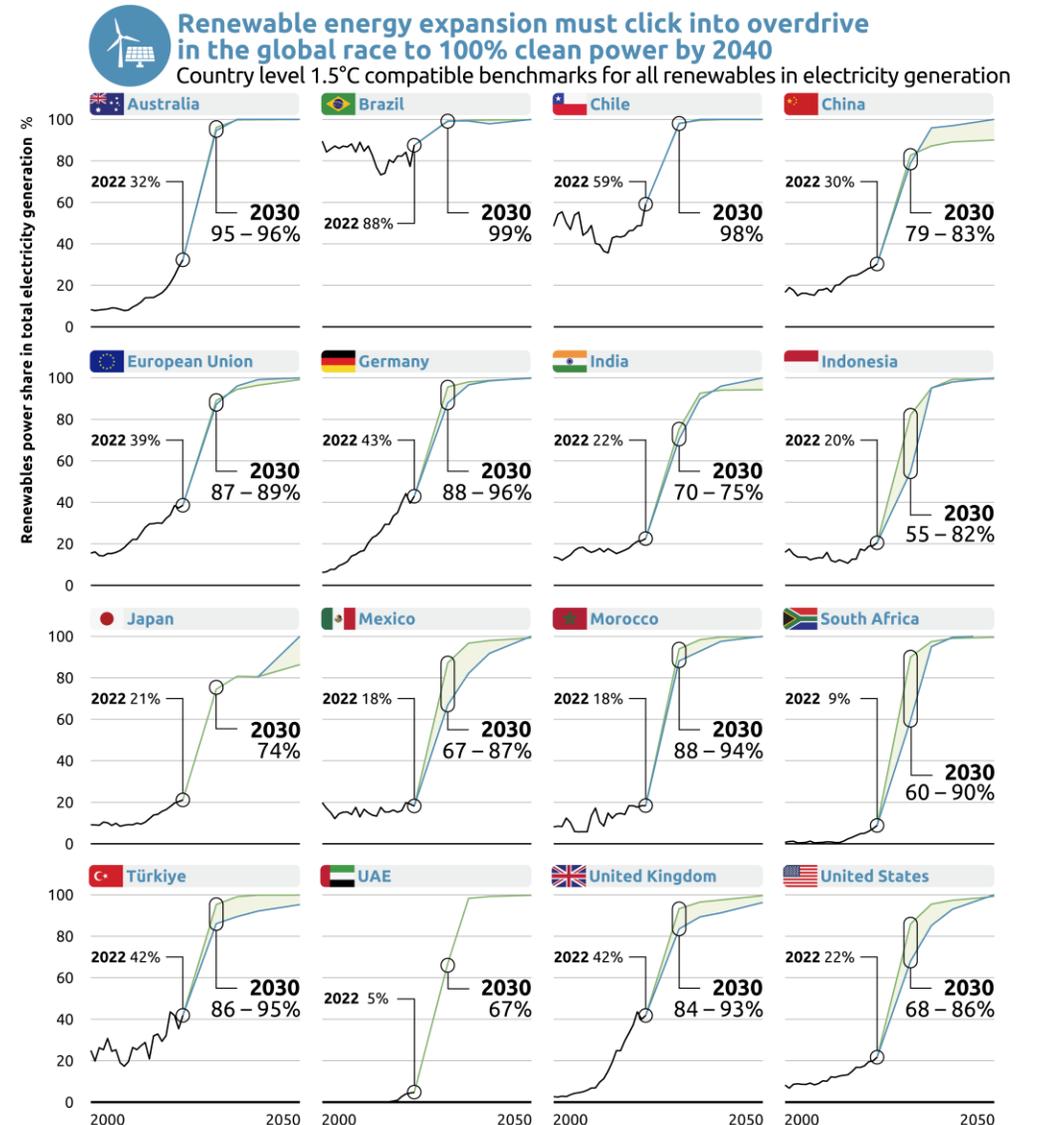
# Renewables need to be rapidly deployed in the power sector

- Renewables should provide over 80% of global electricity demand by 2030
- Renewables provide over 26,000 TWh of generation in 2030 (up from 7,000 TWh today)
- In 1.5°C compatible pathways, ~100% renewable electricity generation is achieved by 2050



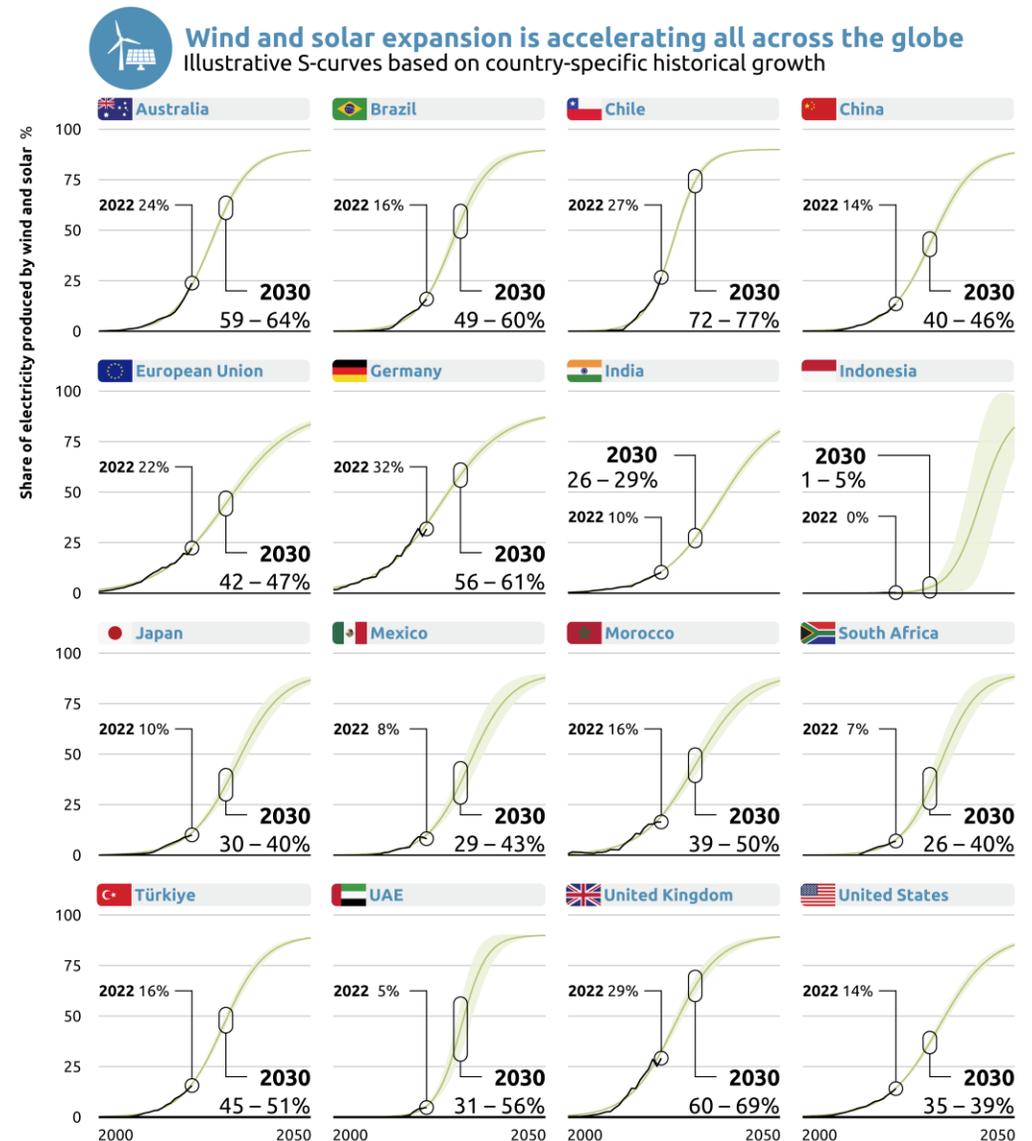
# Renewables need to be rapidly deployed in the power sector

- Developed countries should be targeting over 80% renewables by 2030
- Developing countries should all reach at least 50–75% renewables by 2030
- All countries reach >80% renewables by 2035
- Developing countries will need international support to unlock their renewable resources



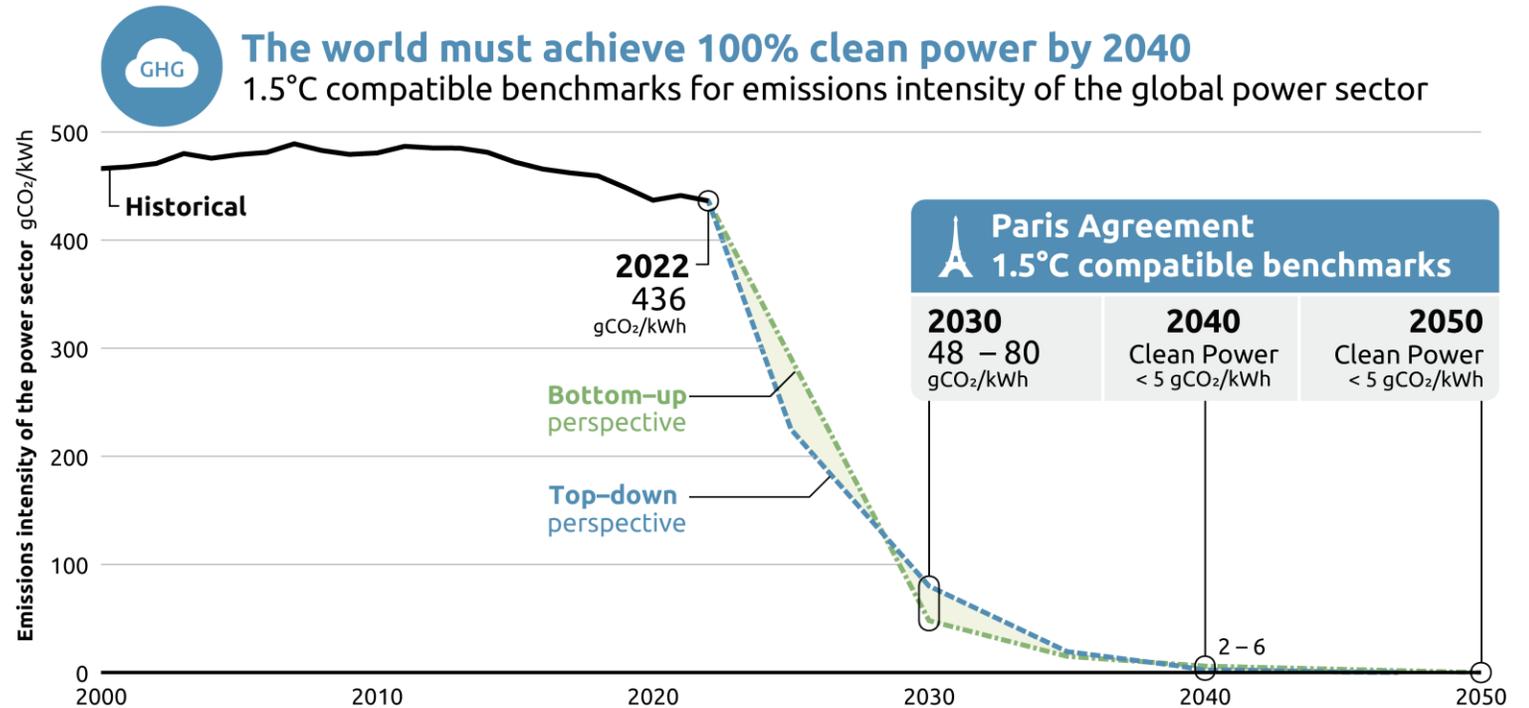
# Wind and solar expansion is accelerating across the globe

- Wind and solar deployment is accelerating across the globe
- Currently, the world is on track to achieve ~50% renewable electricity and around 70% by 2035
- While more acceleration is needed, a 1.5°C compatible power sector transition is still possible
- Promising signs in some countries (e.g., Chile, Türkiye and the UK) – but action needs to be sustained and accelerated everywhere



# Clean electricity generation by 2040

- Phasing out fossil fuels by 2040 would lead to clean electricity
- Developed countries should aim for clean power by 2035, developing by 2040
- Clean electricity within a generation's time remains the North Star of the power sector transition



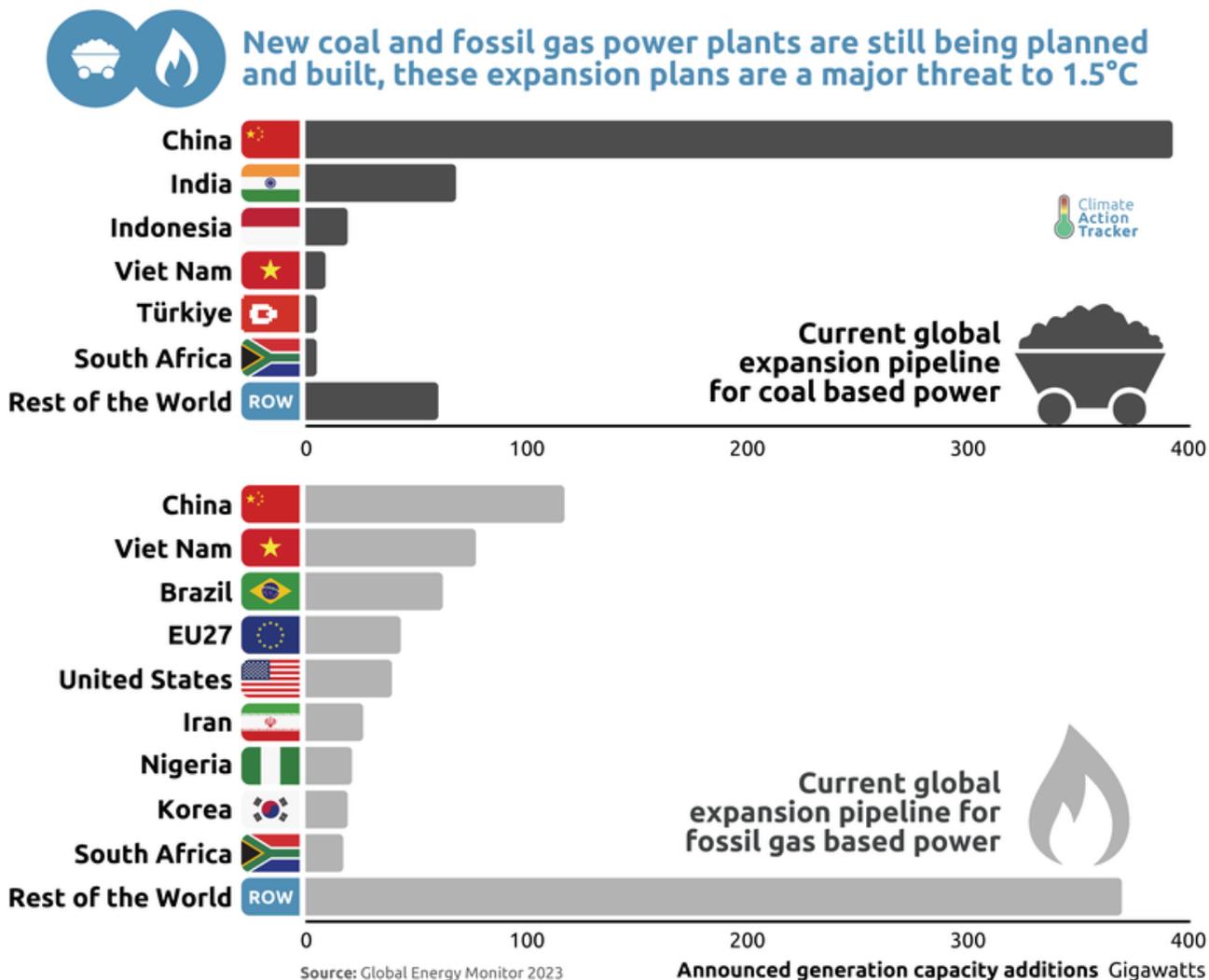
# ARE COUNTRIES PULLING THE PLUG ON FOSSILS?

Hanna Fekete (NewClimate Institute)

# Progress of countries against 1.5°C benchmarks in electricity generation

		COAL	FOSSIL GAS	RENEWABLES
	United Kingdom	✓ 1.5°C COMPATIBLE	⟷ MIXED PICTURE	⟷ MIXED PICTURE
	Chile	⟩⟩ RIGHT DIRECTION	⟷ WRONG DIRECTION	⟩⟩ AHEAD OF THE PACK
	Germany	⟩⟩ RIGHT DIRECTION	⟷ WRONG DIRECTION	⟩⟩ AHEAD OF THE PACK
	South Africa	⟩⟩ RIGHT DIRECTION	⟷ MIXED PICTURE	⟷ MIXED PICTURE
	China	⟷ WRONG DIRECTION	⟩⟩ RIGHT DIRECTION	⟷ MIXED PICTURE
	EU27	⟩⟩ RIGHT DIRECTION	⟷ WRONG DIRECTION	⟷ MIXED PICTURE
	India	⟷ WRONG DIRECTION	⟩⟩ RIGHT DIRECTION	⟷ MIXED PICTURE
	Australia	⟷ MIXED PICTURE	⟷ WRONG DIRECTION	⟷ MIXED PICTURE
	UAE	⟷ MIXED PICTURE	⟷ WRONG DIRECTION	⟷ MIXED PICTURE
	United States	⟷ WRONG DIRECTION	⟷ MIXED PICTURE	⟷ MIXED PICTURE
	Brazil	⟷ WRONG DIRECTION	⟷ WRONG DIRECTION	⟷ MIXED PICTURE
	Indonesia	⟷ WRONG DIRECTION	⟷ WRONG DIRECTION	⟷ MIXED PICTURE
	Morocco	⟷ WRONG DIRECTION	⟷ WRONG DIRECTION	⟷ MIXED PICTURE
	Türkiye	⟷ WRONG DIRECTION	⟷ WRONG DIRECTION	⟷ MIXED PICTURE
	Japan	⟷ WRONG DIRECTION	⟷ WRONG DIRECTION	⟷ LAGGING BEHIND
	Mexico	⟷ WRONG DIRECTION	⟷ WRONG DIRECTION	⟷ LAGGING BEHIND

# Additional planned capacities of fossils are a major threat to 1.5°C



# Much progress has been made, more is possible and necessary

- Fossils in electricity need to phase out – by 2035/2040
  - Rapid **decline as of now, in all countries**
  - **No role of CCS** for coal, and at best a marginal role for gas
- Renewable electricity needs to move towards 100%
  - Rapid increase, particularly for solar and wind
  - Efforts required to **speed up growth globally**
- Finance and international cooperation required to enable all countries
  - To **decarbonise their power systems**
  - To **develop in a just, sustainable way**

