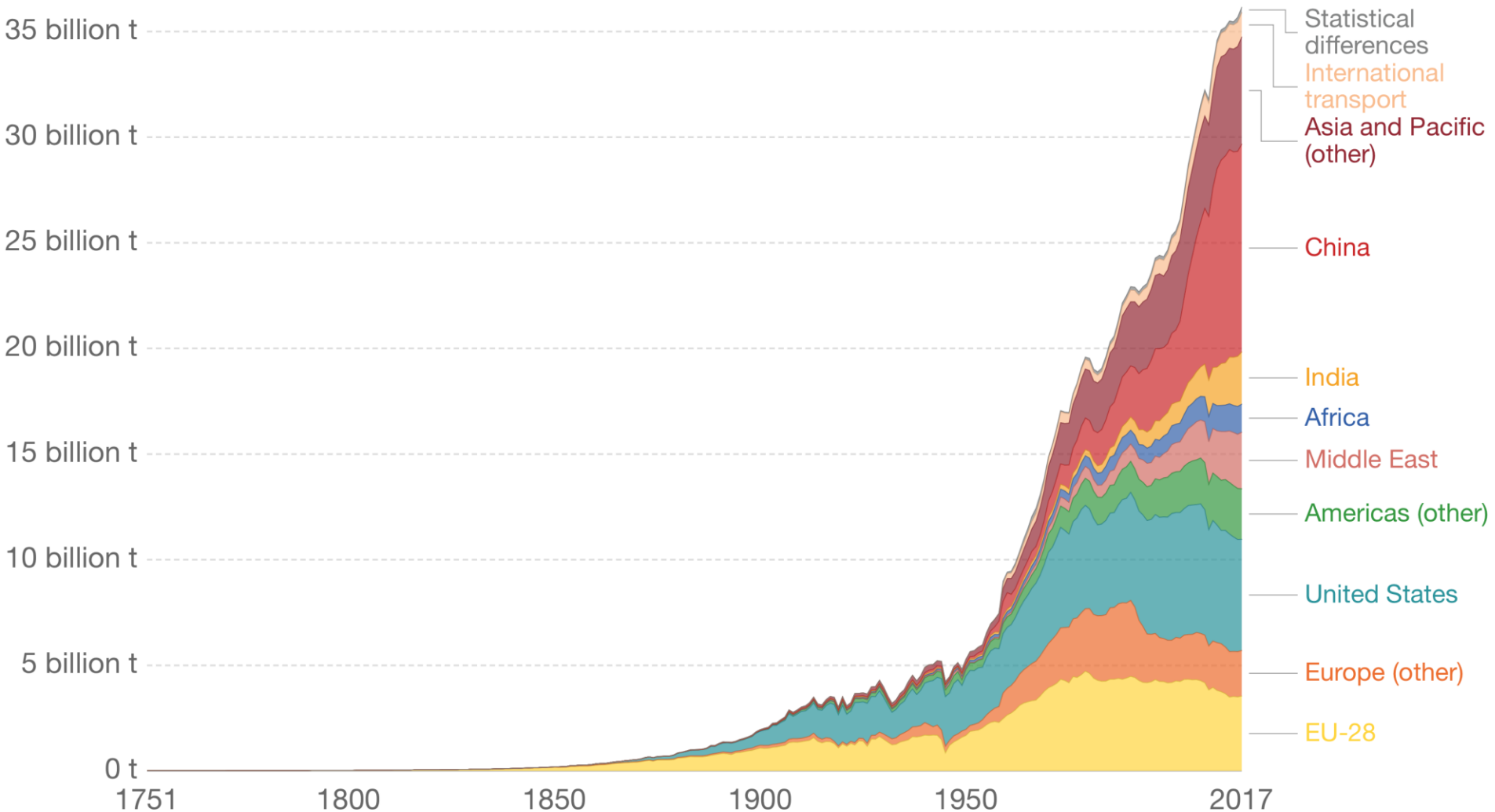


"Three Decades of International Climate Change Politics: From Rio de Janeiro to Glasgow."

Miranda A. Schreurs

Technical University of Munich

Annual total CO₂ emissions, by world region

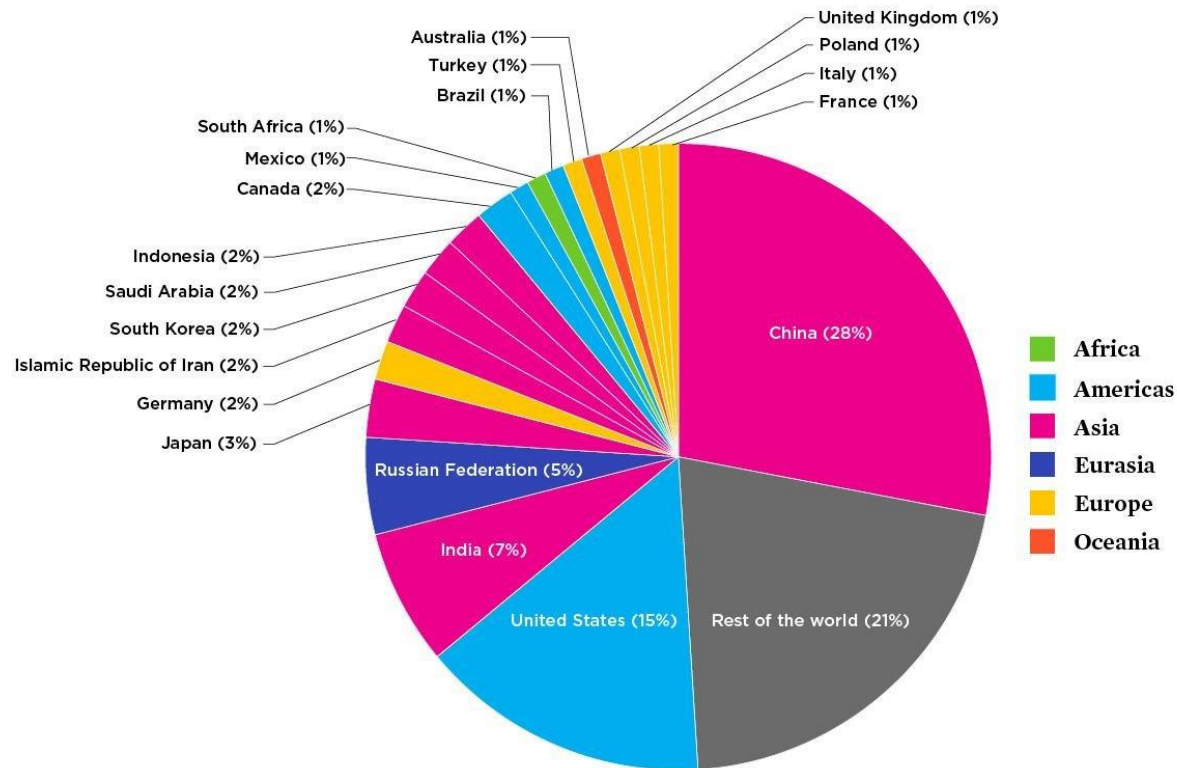


Source: Carbon Dioxide Information Analysis Center (CDIAC); Global Carbon Project (GCP)

Note: "Statistical differences" notes the discrepancy between estimated global emissions and the sum of all national and international transport emissions.

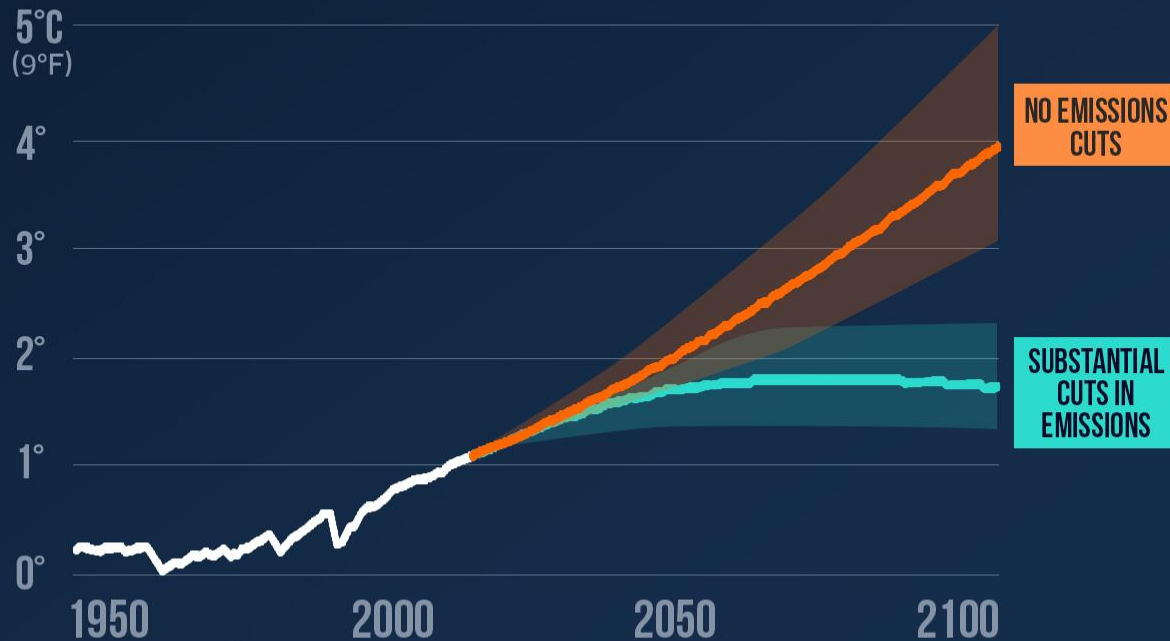
OurWorldInData.org/co2-and-other-greenhouse-gas-emissions • CC BY

Share Global CO₂ Emissions



FUTURE TEMPERATURES

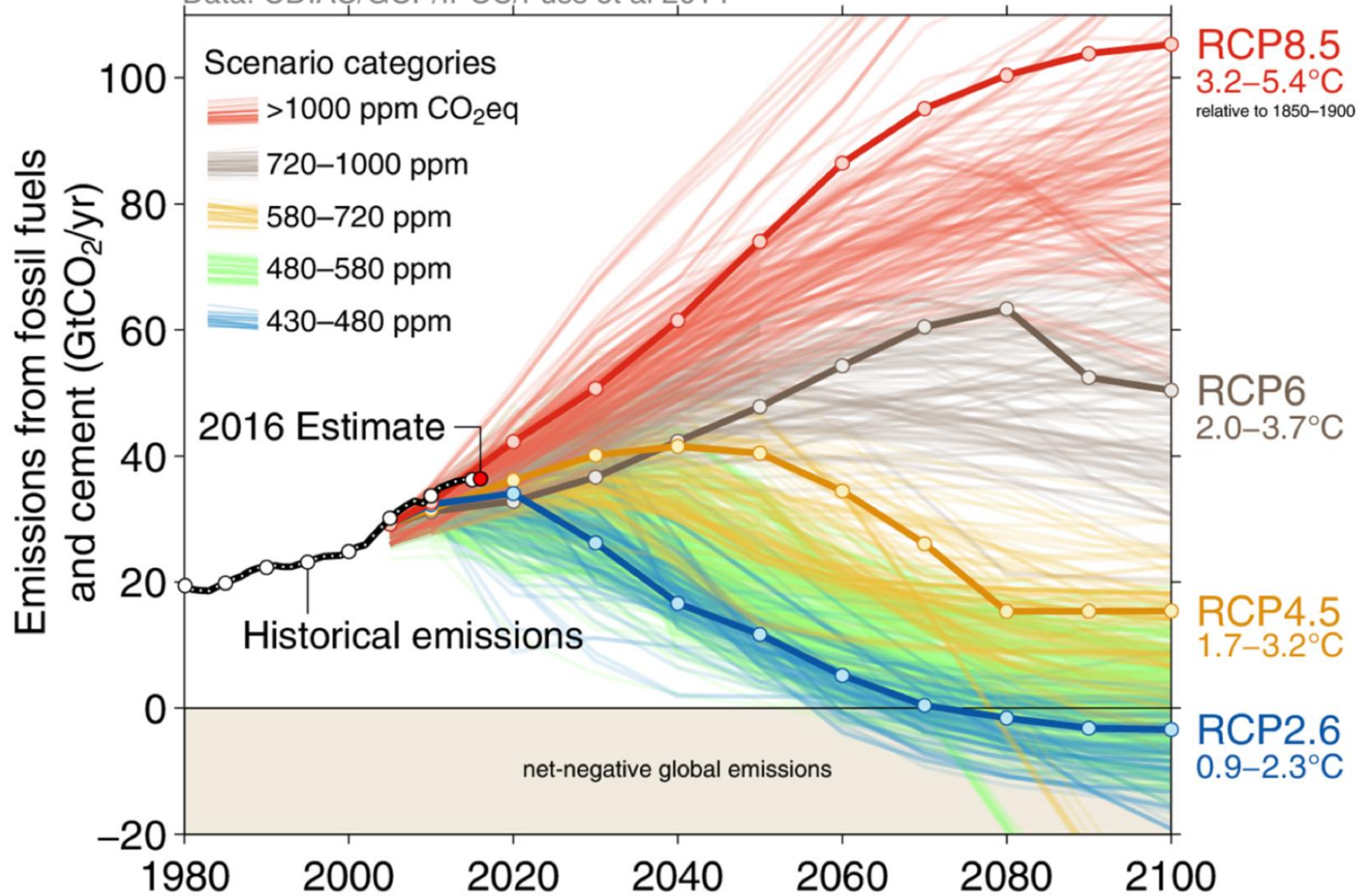
WARMING DEPENDS ON CHOICES TODAY



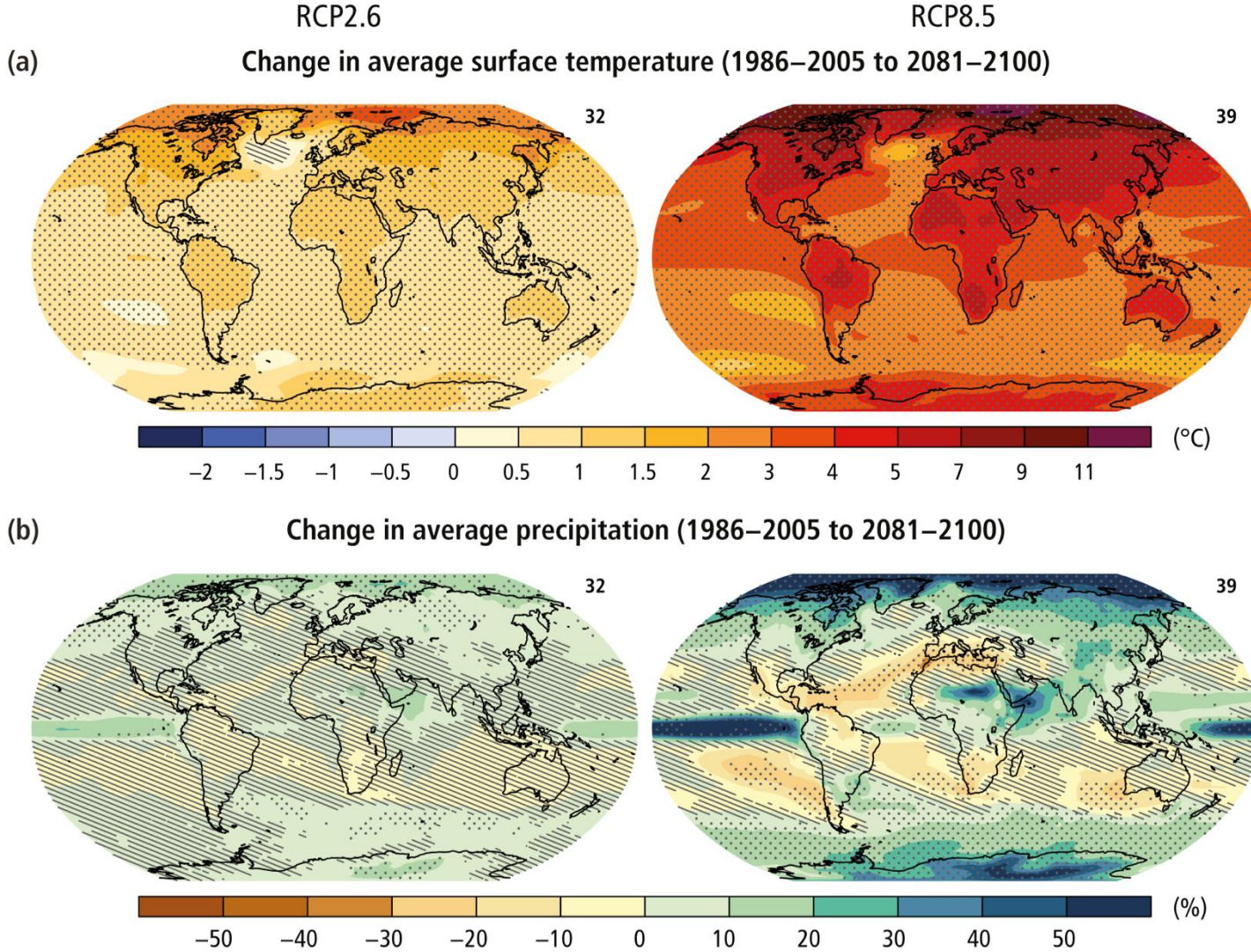
Global surface temperature (°C) anomaly relative to 1850-1900
High warming scenario: SSP3-7, Low warming scenario from SSP1-2.6.
Source: IPCC AR6 WG1

CLIMATE  CENTRAL

Data: CDIAC/GCP/IPCC/Fuss et al 2014



IPCC 5th Assessment Report

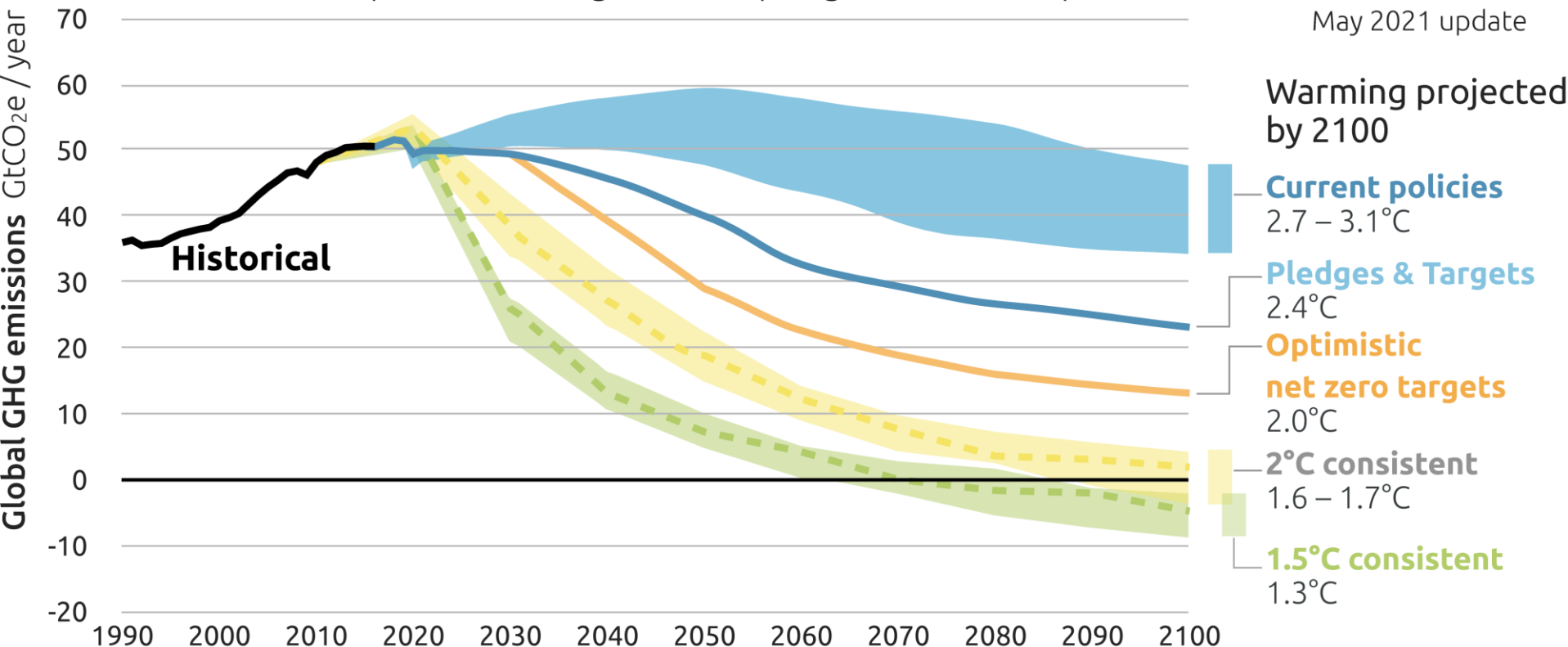


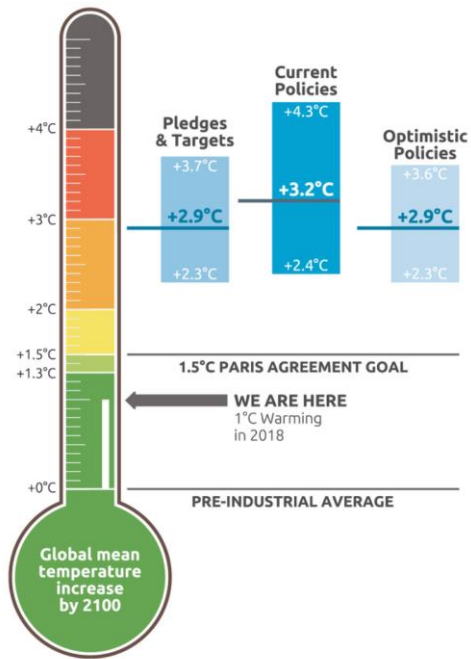
2100 WARMING PROJECTIONS

Emissions and expected warming based on pledges and current policies



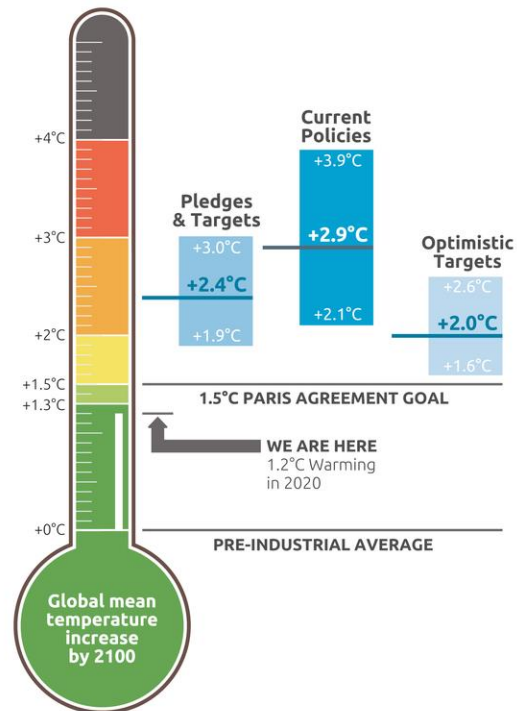
May 2021 update





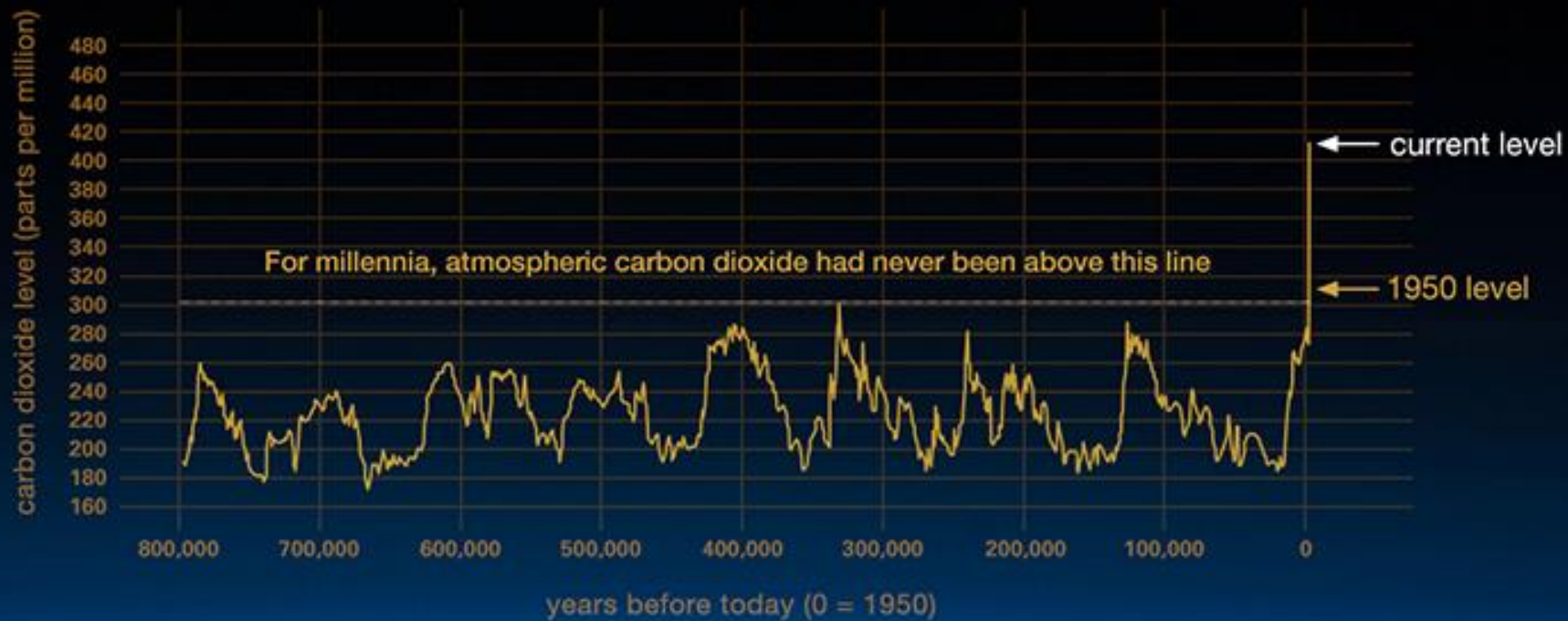
CAT warming projections Global temperature increase by 2100

September 2019 Update



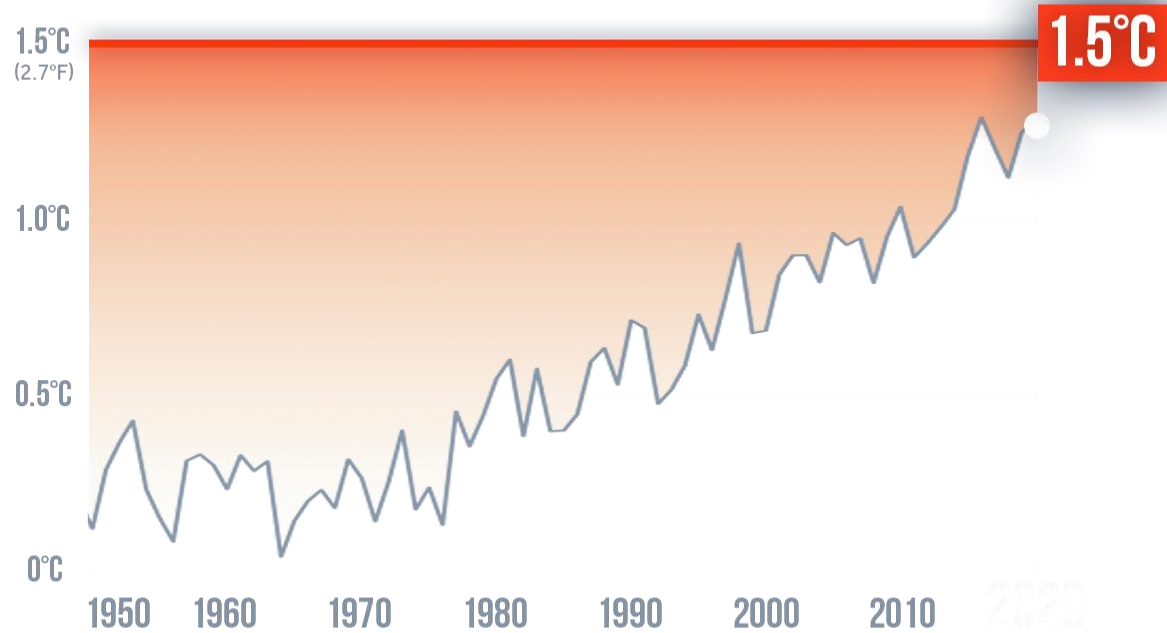
CAT warming projections Global temperature increase by 2100

May 2021 Update



CLOSING IN ON 1.5°C

OBSERVED GLOBAL TEMPERATURE CHANGE



Global mean temperature relative to 1850-1900 average.
Source: UK Met Office Hadley Centre

CLIMATE  CENTRAL

1 KEINE
ARMUT



2 KEIN
HUNGER



3 GESUNDHEIT UND
WOHLERGEHEN



4 HOCHWERTIGE
BILDUNG



5 GESCHLECHTER-
GLEICHSTELLUNG



6 SAUBERES WASSER
UND SANITÄRVER-
SORGUNG



7 BEZAHLBARE UND
SAUBERE ENERGIE



8 MENSCHENWÜRDIGE
ARBEIT UND WIRTSCHAFTS-
WACHSTUM



9 INDUSTRIE, INNOVATION
UND INFRASTRUKTUR



10 WENIGER
UNGLEICHHEITEN



11 NACHHALTIGE STÄDTE
UND GEMEINDEN



12 VERANTWORTUNGS-
VOLLE KONSUM- UND
PRODUKTIONSMUSTER



13 MASSNAHMEN ZUM
KLIMASCHUTZ



14 LEBEN UNTER
WASSER



15 LEBEN AN
LAND



16 FRIEDEN,
GERECHTIGKEIT UND
STARKE INSTITUTIONEN



17 PARTNERSCHAFTEN
ZUR ERREICHUNG
DER ZIELE



ZIELE
FÜR NACHHALTIGE
ENTWICKLUNG

Main Achievements of Paris Climate Agreement :

- Keeping temperature increase below 2°C, and strive for 1.5° C
- Nationally determined contributions (NDCs) (annual reports on progress with international review)
- new NDCs after 5 years (with expectation they will represent a progression beyond previous ones)
- Increasing aid for developing countries to more than US\$100 billion per year

IPCC Special Report on 1.5 Degrees

- Human Activities are estimated to have caused a 1.0 degree warming since pre-industrial levels.
- 1.5 Degree increase likely by 2030-2052
- Pathways chosen determine rate of increase, impacts, and costs (-45% of 2010 ghg levels by 2030 needed)



UN Emissions Gap Report 2018

- Current NDCs inadequate; global emissions are still increasing
- G20 emissions are not on track for 2030 to be consistent with 1,5 or 2 degree goals
- Ambition levels need to be raised





Nov 2021

National Responses

EU's 2030 Framework for Climate and Energy Policy Targets (old → new → newer)

Set in 2014, revised in 2018 and again in 2021.

- 40% reduction compared to 1990 → 55%
- 27% → 32% renewals in final energy
- 27% → 32.5% energy efficiency

Europe's Green New Deal

- 1.) Climate Neutrality 2050
- 2.) Circular Economy (action plan expected March 2020). Clean steelmaking using hydrogen by 2030, making batteries reusable & recyclable.
- 3.) Building renovation. Double/Triple renovation rate of buildings
4. Zero Pollution (air, water, soil) by 2050
5. Ecosystems & Biodiversity. New forestry strategy.

Green New Deal cont.

6.) Green & Healthier Agric. System (significantly reducing chemical pesticides, fertilisers & antibiotics. Aligning Common Agricultural Policy with Green Deal.

7.) Transport. 95gCO₂/km

8.) Just transition fund for regions most impacted by transition away from fossil fuels

9.) R&D (35% of EU research for climate-friendly technologies)

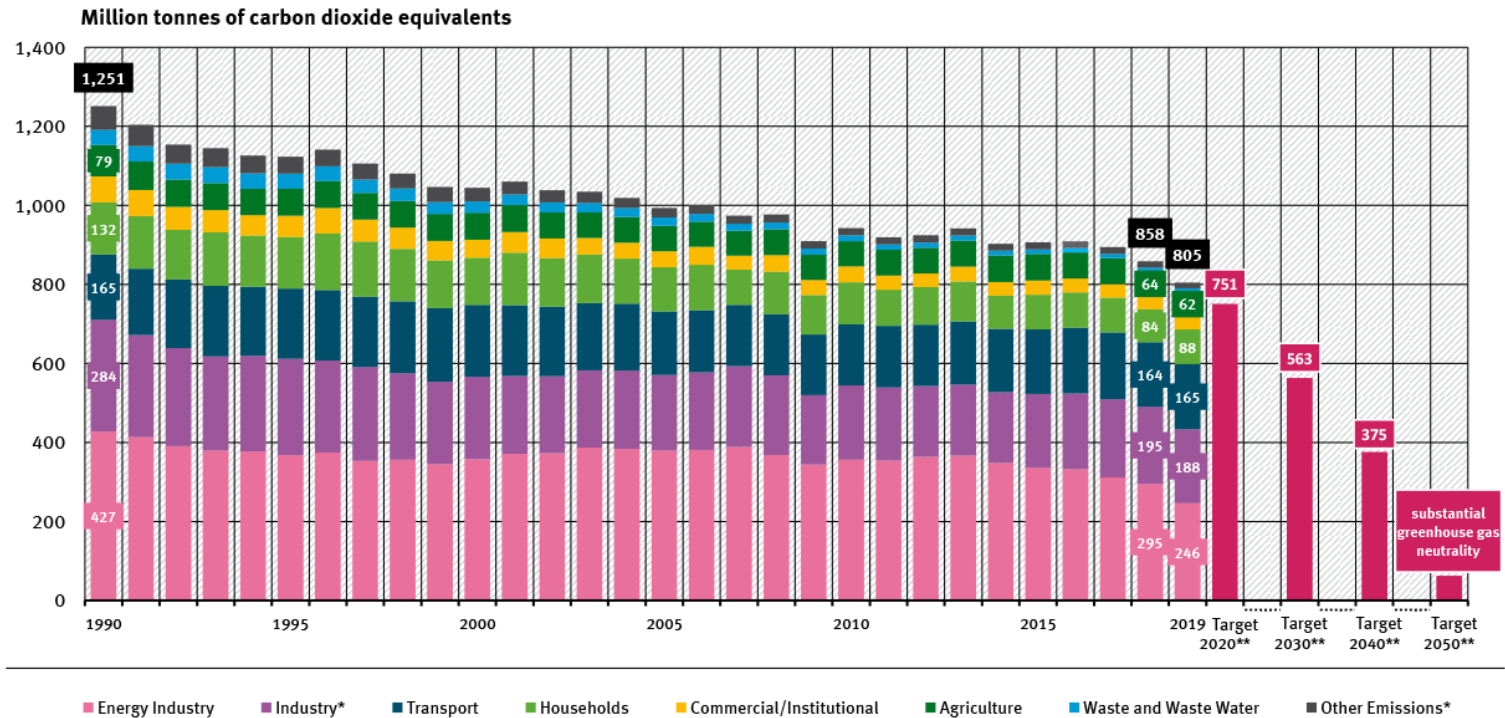
10.) Carbon border tax/external relations

EU Climate Neutrality by 2050

- 28 November 2020, European Union agrees on „climate neutrality“ target
- Exemptions for Poland to reach climate neutrality at its own pace

Deutschland

Emission of greenhouse gases covered by the UN Framework Convention on Climate



Emissions by UN reporting category, without land use, land use change and forestry

* Industry: Energy and process-related emissions from industry (1.A.2 & 2);

Other Emissions: Other combustion (rest of CRF 1.A.4, 1.A.5 military) & fugitive emissions from fuels (1.B)

** Targets 2020 to 2050: Energy Concept of the German Federal Government (2010)

2019: Short-term forecast, emissions from commerce, trade & services contained in Other Emissions

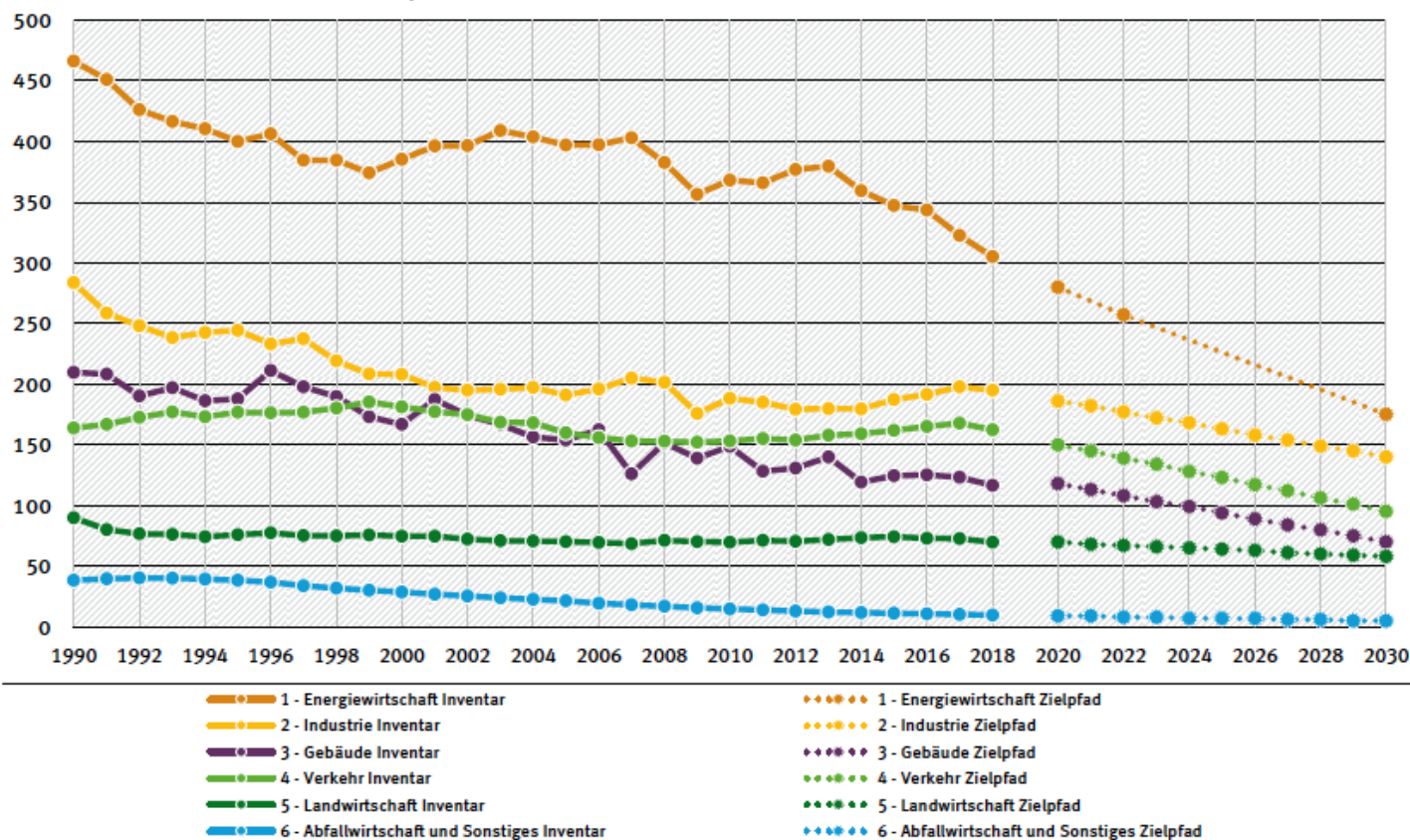
Source: German Environment Agency, National Inventory Reports for the German Greenhouse Gas Inventory 1990 to 2018 (as of 12/2019) and estimate for 2019 from UBA Press Release 15th of march 2020

Energy and Climate Targets: Deutschland

- Nuclear phaseout by end of 2022
- Coal phaseout by 2038 at the latest
- 65% reduction in ghgs until 2030 (1990 baseline)
- Yearly targets by sector
- Annual monitoring

Entwicklung und Zielerreichung der Treibhausgas-Emissionen in Deutschland in der Abgrenzung der Sektoren des Klimaschutzplans 2050*

Millionen Tonnen Kohlendioxid-Äquivalente



* Die Aufteilung der Emissionen weicht von der UN-Berichterstattung ab, die Gesamtemissionen sind identisch

Quelle: Umweltbundesamt 2020

Decision of the German Constitutional Court 30.04.2021

- Inadequate targets for reducing emissions outline for the period starting from 2031.
- The constitutional judges are therefore calling on the legislature to regulate the reduction targets for greenhouse gas emissions after 2030 in more detail. The court expects answers by the end of 2022.
- At the moment, high emission reduction burdens are only "irreversibly postponed to periods after 2030".
- The "partly still very young complainants" would be "violated in their freedom rights" if policy were left unchanged.

- The court obliges the legislature to find a balance between the use of freedom on the one and the clearly expected burden of damage on the other. With this, Karlsruhe is setting clear limits of responsibility for a "senior democracy" (i.e. a democracy with many old people in it)
- "Nevertheless, or precisely because of this, older people, at least those who care about the well-being of their children and grandchildren, should cheer about this judgment."

<https://www.dw.com/de/verfassungsgericht-zwingt-deutschland-zu-mehr-klimaschutz/a-57375634>



German Climate Change Act

- June 2021 the German federal government amended the Climate Change Act of 2019 raising the CO₂ reduction target for 2030 to 65%, setting an 88% reduction target for 2040, moving up the date for when climate neutrality is to be reached to 2045, and aiming for negative emissions thereafter.

Climate neutrality targets

- Finland: 2035
 - California: 2045
 - Germany: 2045
 - EU: 2050
 - Schweden: 2045
 - China: 2060
-
- Norwegen: 2050 (2030 with international offsets)
 - New Zealand: 2050

U.S. Energy and Climate Politics

Biden calls climate “an existential threat”. Issues outlines of a climate plan

- Carbon pollution-free power sector by 2035
- Infrastructure investment (e.g. Upgrading 4 million buildings and weatherizing 2 million homes (over 4 years))
- Constructing 1.5 million sustainable homes & housing units
- Invest in clean energy technologies (battery storage, negative emissions technologies, next generation building materials, renewable hydrogen, advanced nuclear)
- Investment in electric automobiles
- Climate smart agriculture, resilience, and conservation (250,000 jobs plugging abandoned oil and natural gas wells)
- Nature-based solutions on climate change
- Environmental justice (spend at least 40% of investments in disadvantaged areas)

John Kerry. Appointed Climate Envoy

Climate an „existential risk“. Paris alone is not enough. (90% of emissions come from outside US). Ambitious climate action must be global.

Climate central to national security preparedness and foreign policy planning.

Coordinating climate action across agencies. Commissions national intelligence estimate of security implications of climate change (17 intelligence agencies will assess the dangers & risks)

Seeks Senate advice and consent on Kigali Amendment to Montreal Protocol.

Develop ambitious new climate target for Glasgow and international finance plan.

Leaders Climate Summit planned for Earth Day. April 22, 2021. Reconvening of major economies forum.

<https://www.msnbc.com/msnbc/watch/john-kerry-on-biden-climate-change-plan-stakes-couldn-t-be-any-higher-100101701697>

CHINA: Climate Policies

Nationally Determined Contribution (NDC)
to the UN Framework Convention on Climate Change
(UNFCCC)

Long-term goals for 2030











- Peak emissions (with best intentions to peak earlier)
- Reduce emission intensity by 60-65% from 2005 levels
- 20% share of renewables in energy-mix

Climate Neutrality for 2060

Total Renewables Capacity/Generation end of 2019.

Total Capacity or Generation as of End-2019

Countries in **bold** indicate change from 2018.

	1	2	3	4	5
POWER					
Renewable power capacity (including hydropower)	China	United States	Brazil	India	Germany
Renewable power capacity (not including hydropower)	China	United States	Germany	India	Japan
Renewable power capacity <i>per capita</i> (not including hydropower) ¹	Iceland	Denmark	Sweden	Germany	Australia
 Bio-power capacity	China	United States	Brazil	India	Germany
 Geothermal power capacity	United States	Indonesia	Philippines	Turkey	New Zealand
 Hydropower capacity ²	China	Brazil	Canada	United States	Russian Federation
 Hydropower generation ²	China	Brazil	Canada	United States	Russian Federation
 Solar PV capacity	China	United States	Japan	Germany	India
 Concentrating solar thermal power (CSP) capacity	Spain	United States	Morocco	South Africa	China
 Wind power capacity	China	United States	Germany	India	Spain
HEAT					
 Solar water heating collector capacity ³	China	United States	Turkey	Germany	Brazil
 Solar water heating collector capacity <i>per capita</i>	Barbados	Cyprus	Israel	Austria	Greece
 Geothermal heat output ⁴	China	Turkey	Iceland	Japan	New Zealand

Ren21. Renewables 2020. Global Status Report.