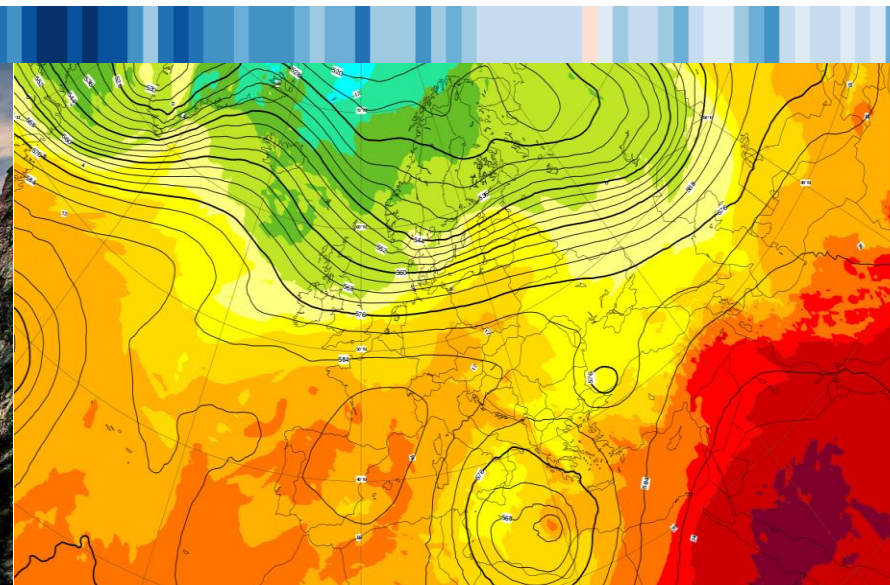


# Eine Bestandsaufnahme zur Klimakrise inmitten der COVID-19 Pandemie

Harald Rieder  
Institut für Meteorologie und Klimatologie  
Universität für Bodenkultur Wien  
harald.rieder@boku.ac.at



[https://en.wikipedia.org/wiki/Pasterze\\_Glacier](https://en.wikipedia.org/wiki/Pasterze_Glacier)

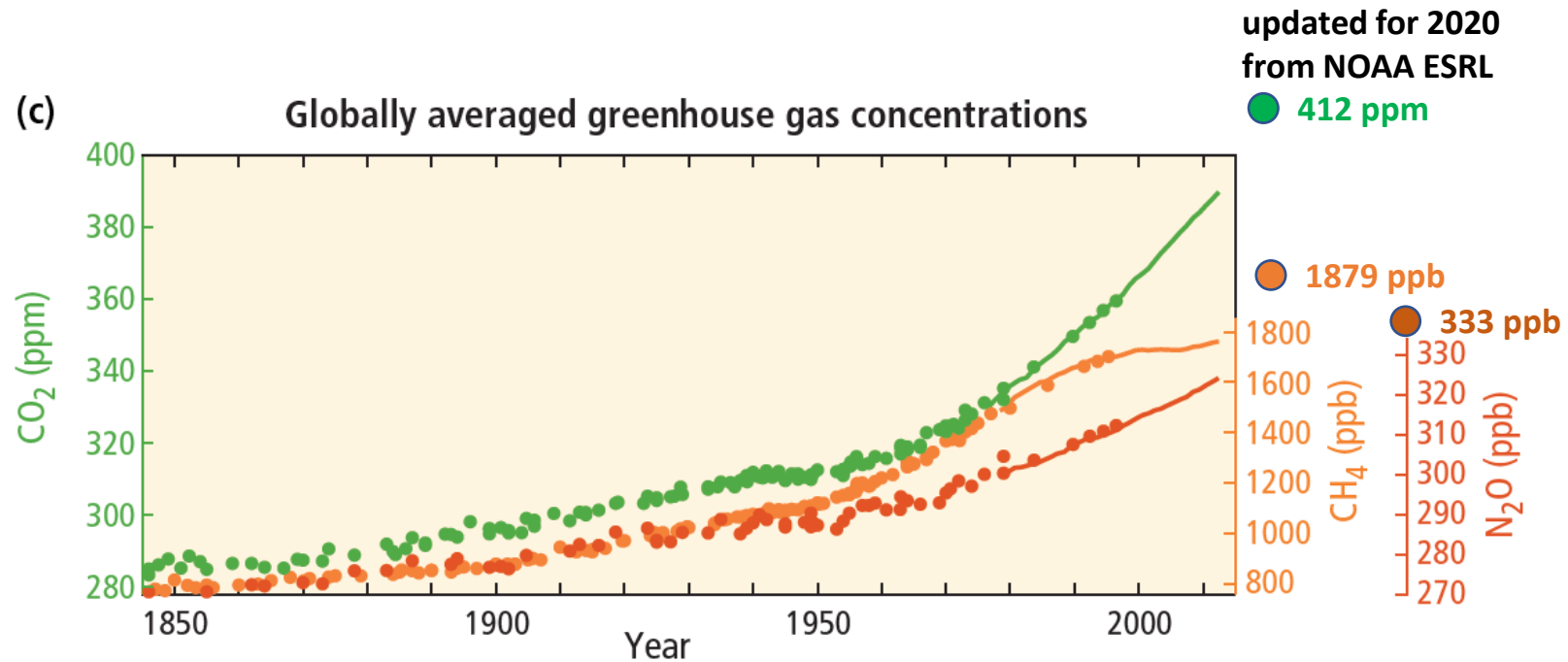


<https://www.ecmwf.int/en/forecasts/charts/catalogue/medium-z500-t850-public?facets=Range,Medium> (15 days)

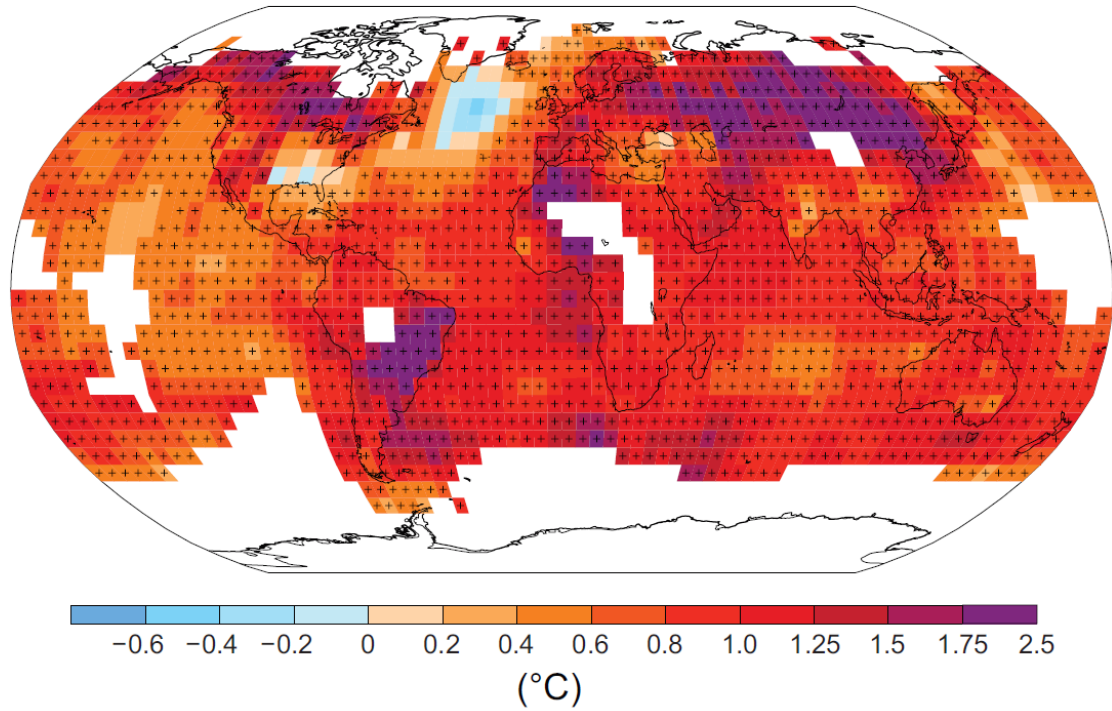


<https://www.bauernzeitung.ch/artikel/oesterreich-duerre-verursacht-millionenschaeden>

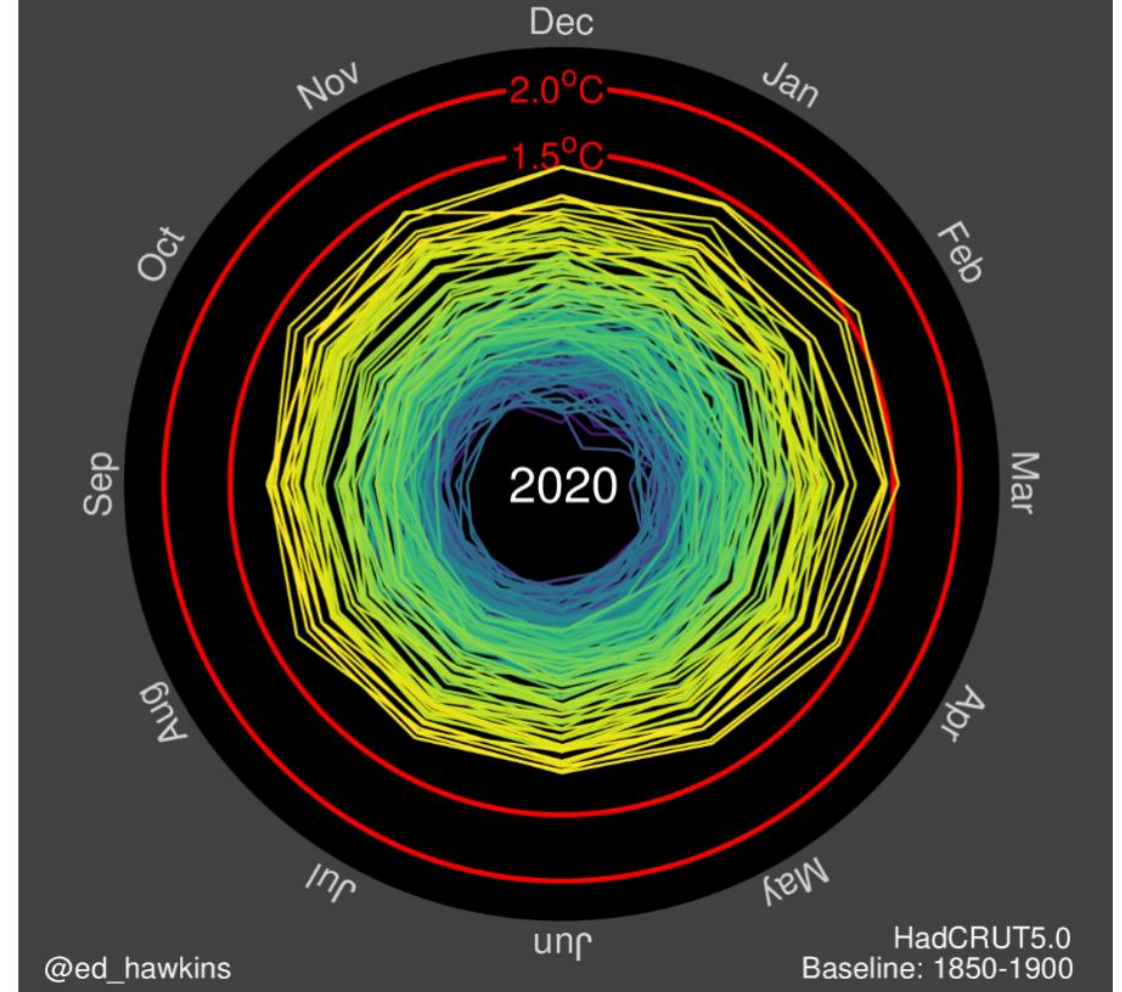
Der Einfluss des Menschen auf das Klimasystem ist klar und die jüngsten anthropogenen Emissionen von Treibhausgasen sind die höchsten in der Geschichte. Die jüngsten Klimaänderungen hatten weitverbreitete Folgen für natürliche Systeme und solche des Menschen. {1}

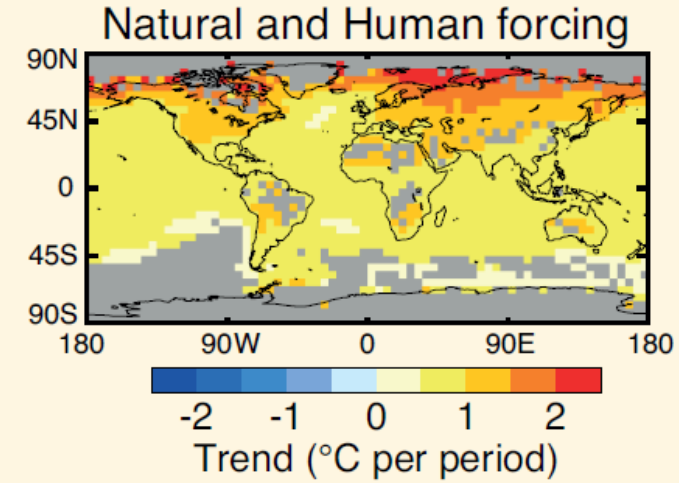
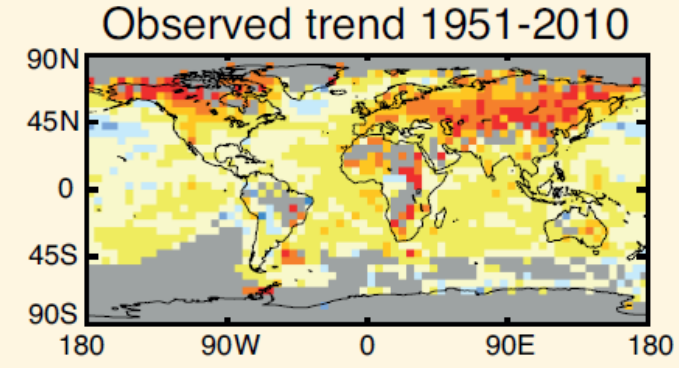
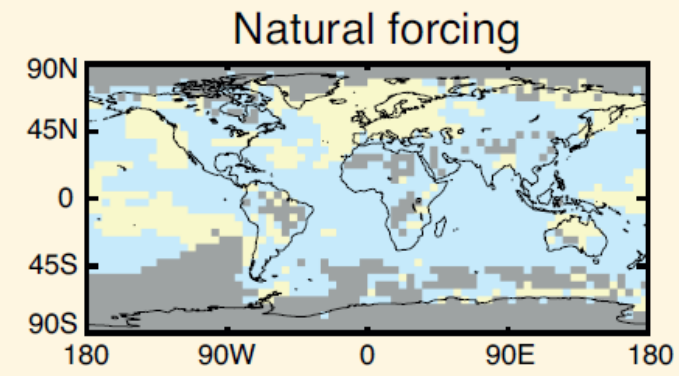
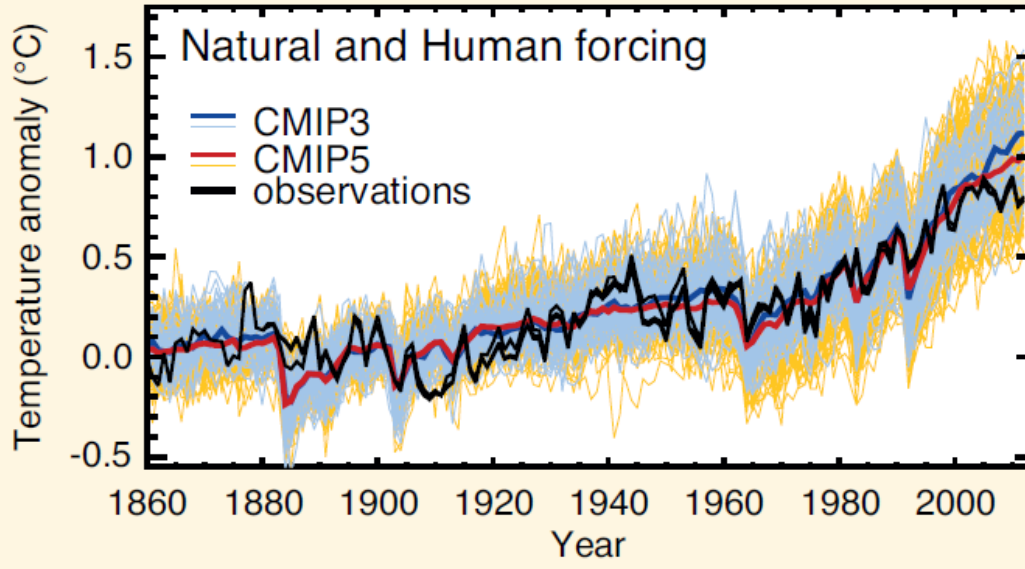
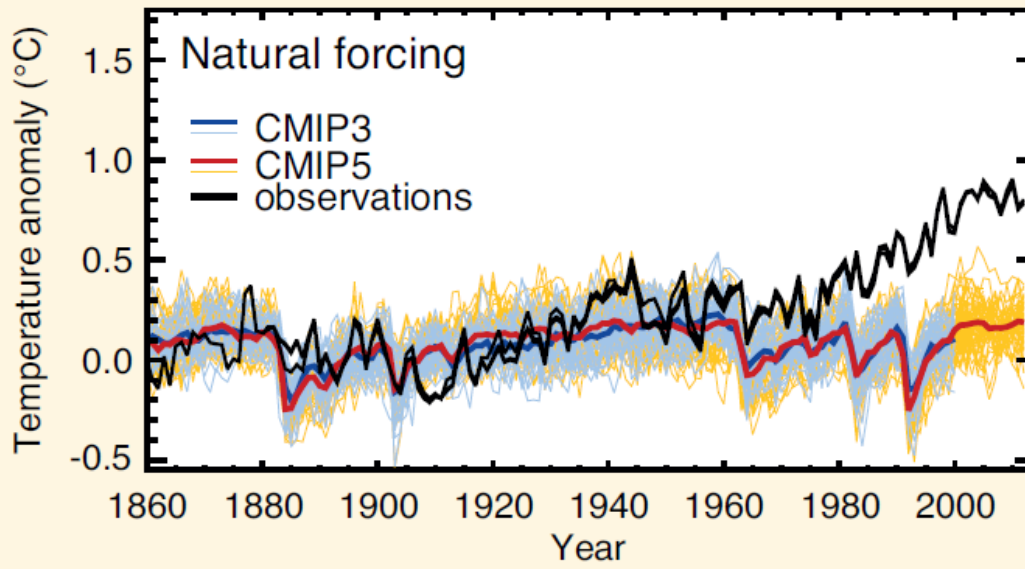


Observed change in surface temperature 1901–2012



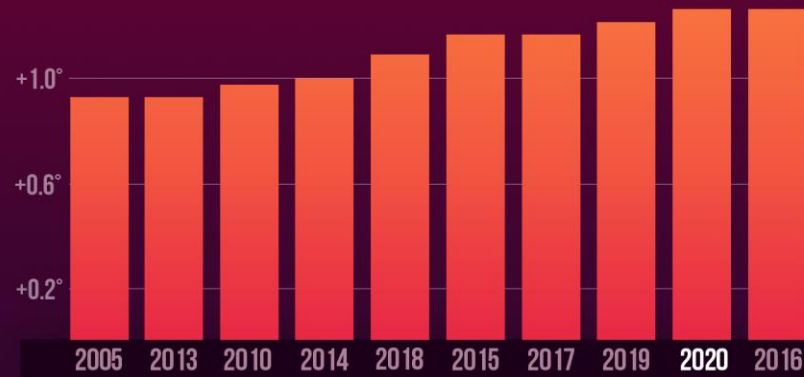
Global temperature change (1850-2020)





# 10 HOTTEST GLOBAL YEARS ON RECORD

+1.4°C 2.52°F

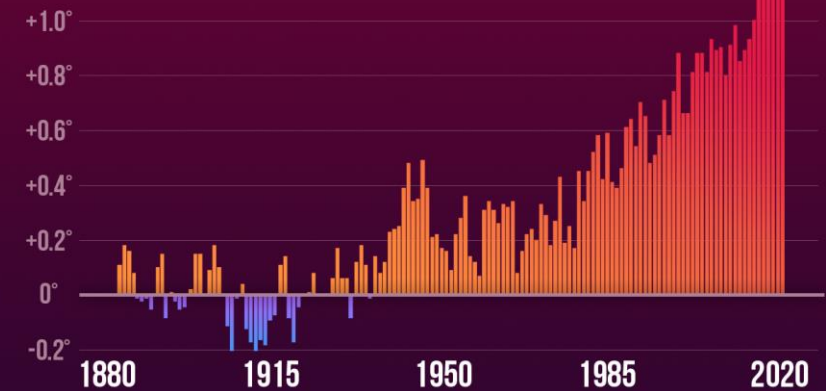


Source: NASA GISS & NOAA NCEI global temperature anomalies averaged and adjusted to early industrial baseline (1881-1910). Data as of 1/14/2021.

CLIMATE CENTRAL

# GLOBAL TEMPERATURE DEPARTURE FROM 1881-1910 AVERAGE

+1.2°C 2.16°F

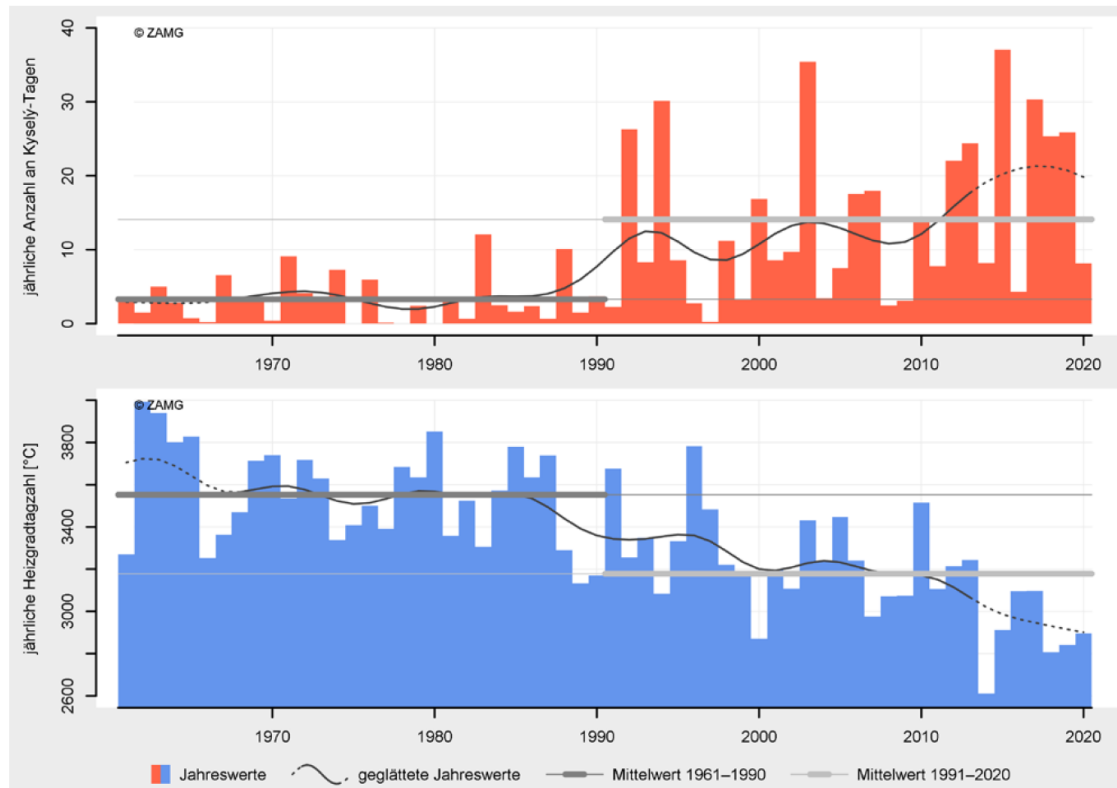
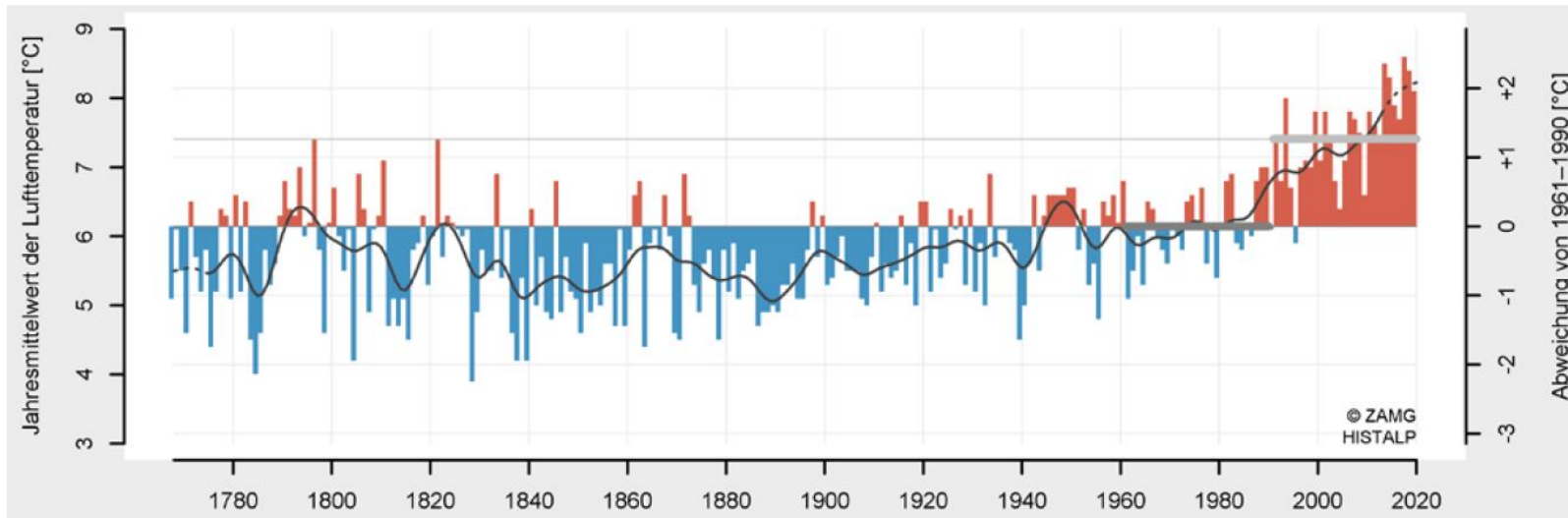


Source: NASA GISS & NOAA NCEI global temperature anomalies averaged and adjusted to early industrial baseline (1881-1910). Data as of 1/14/2021.

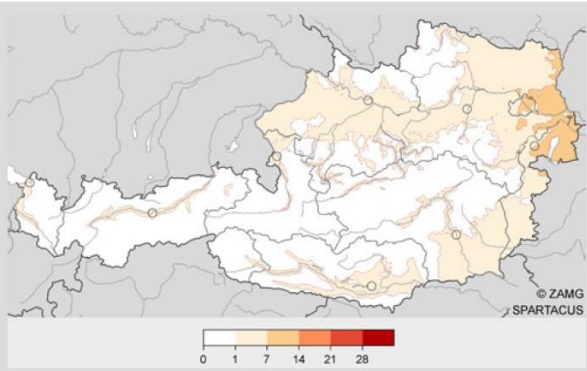
CLIMATE CENTRAL



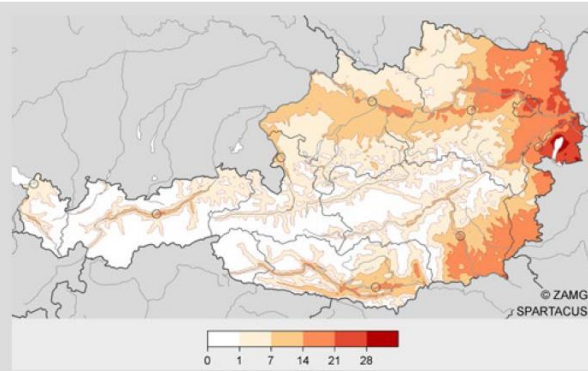
Quelle: <https://medialibrary.climatecentral.org/resources/2020-in-review-global-temperature-rankings>



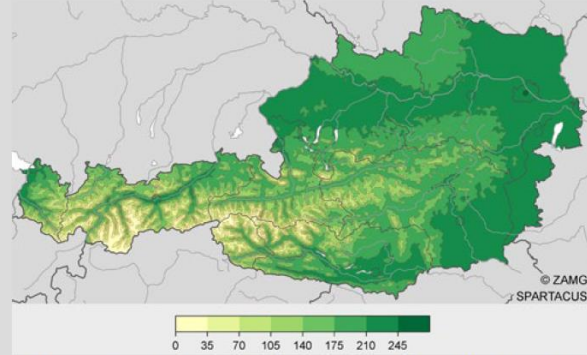
Quelle: Klimastatusbericht, 2020



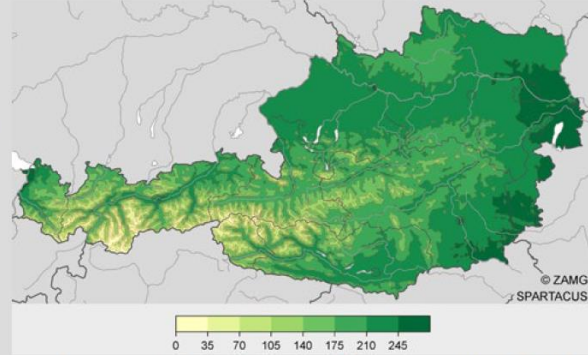
mittlere jährliche Anzahl an Kysely-Tagen [d] 1961–1990



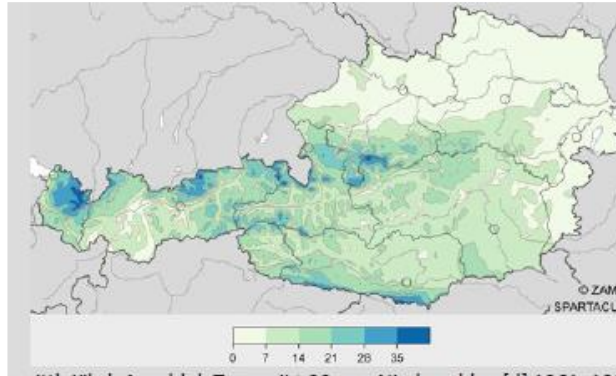
mittlere jährliche Anzahl an Kysely-Tagen [d] 1991–2020



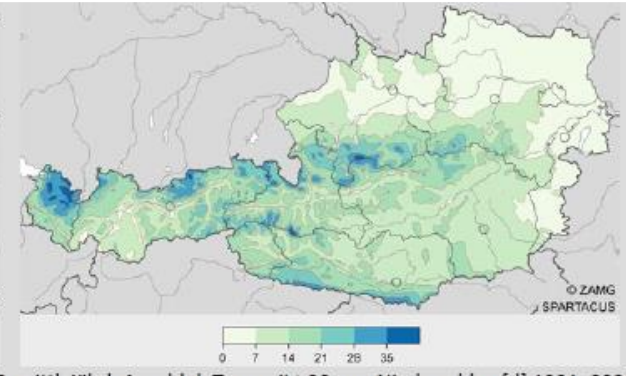
mittlere jährliche Dauer der Vegetationsperiode [d] 1961–1990



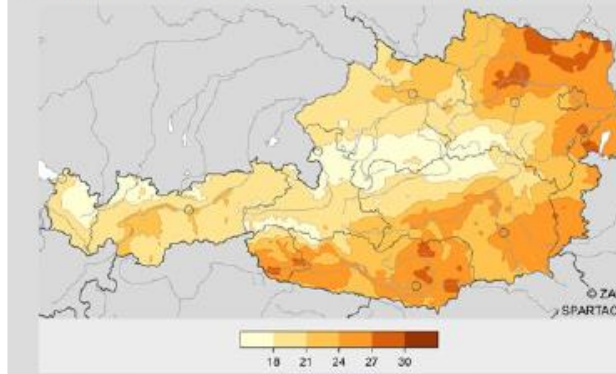
mittlere jährliche Dauer der Vegetationsperiode [d] 1991–2020



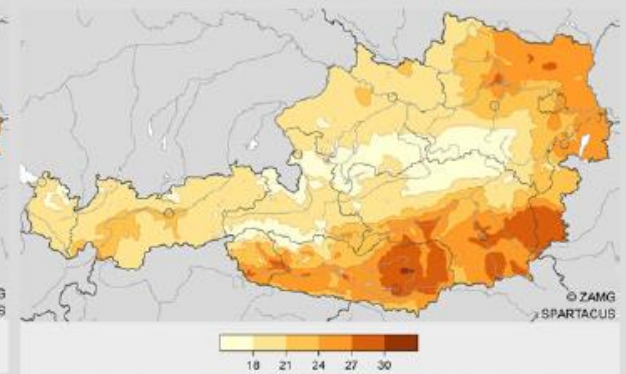
mittl. jährl. Anzahl d. Tage mit  $\geq 20$  mm Niederschlag [d] 1961–1990



mittl. jährl. Anzahl d. Tage mit  $\geq 20$  mm Niederschlag [d] 1991–2020

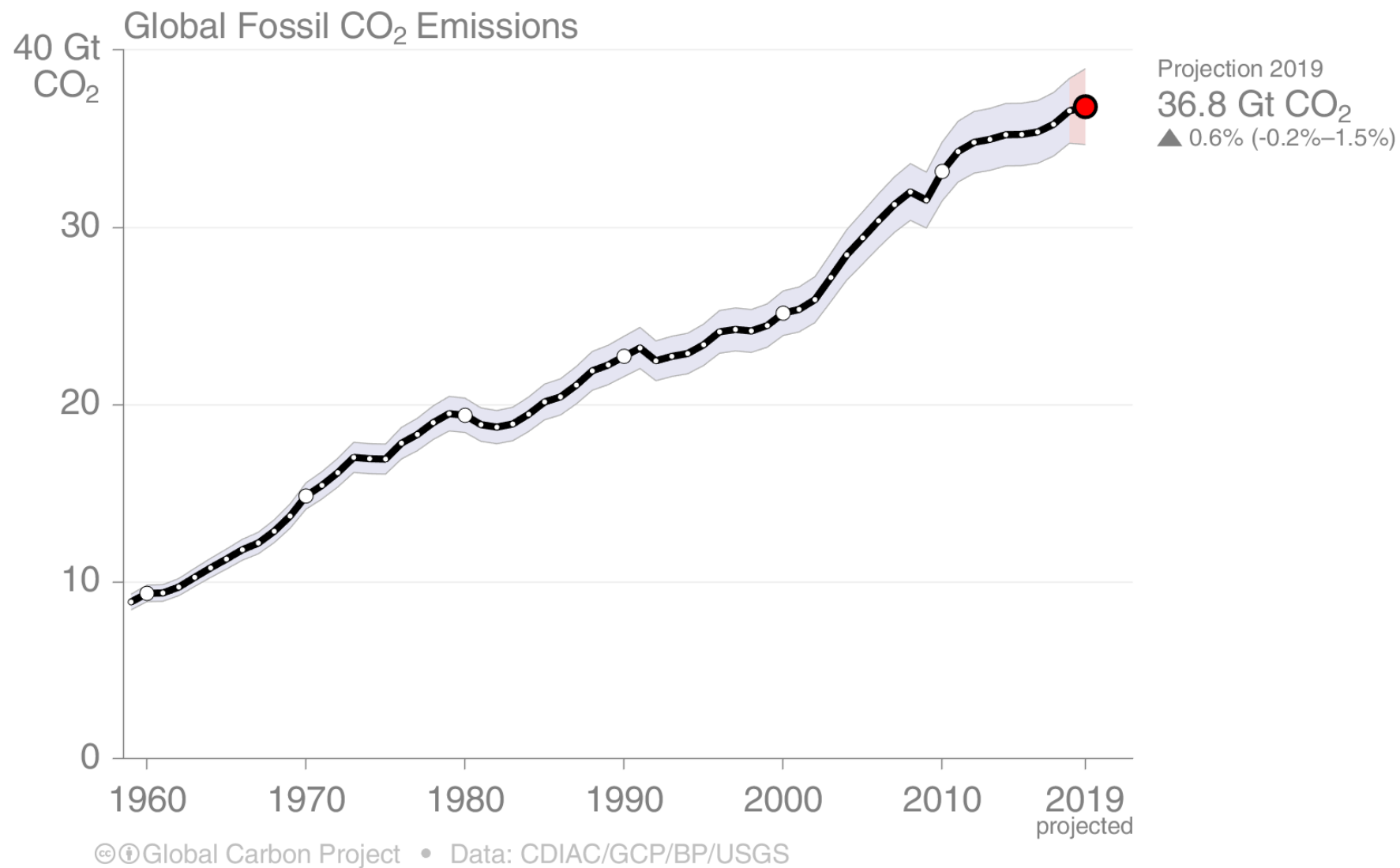


mittlere Dauer der längsten jährl. Trockenepisode [d] 1961–1990



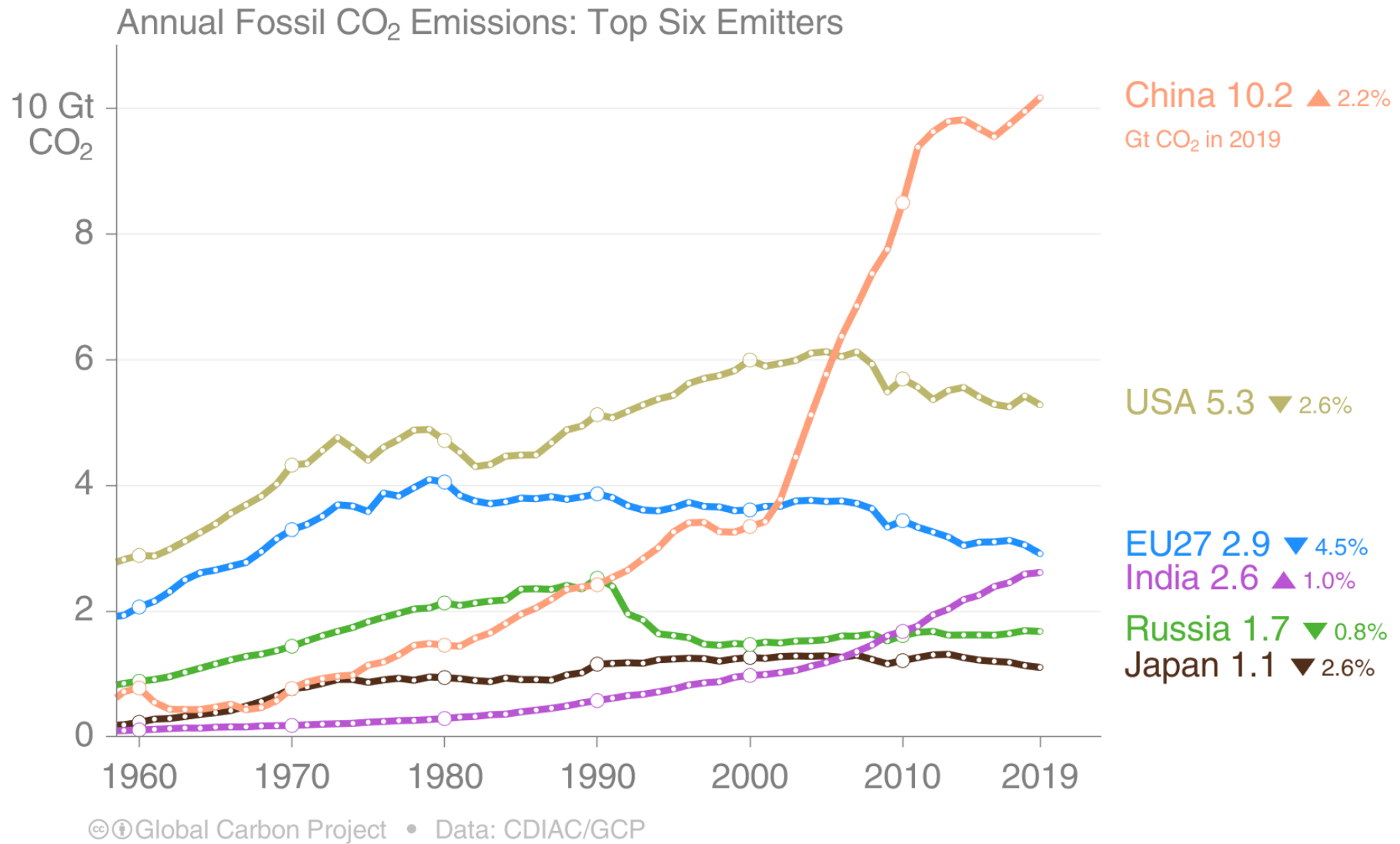
mittlere Dauer der längsten jährl. Trockenepisode [d] 1991–2020

## 2019 lagen die Emissionen um ca. 60% über jenen des Jahres 1990



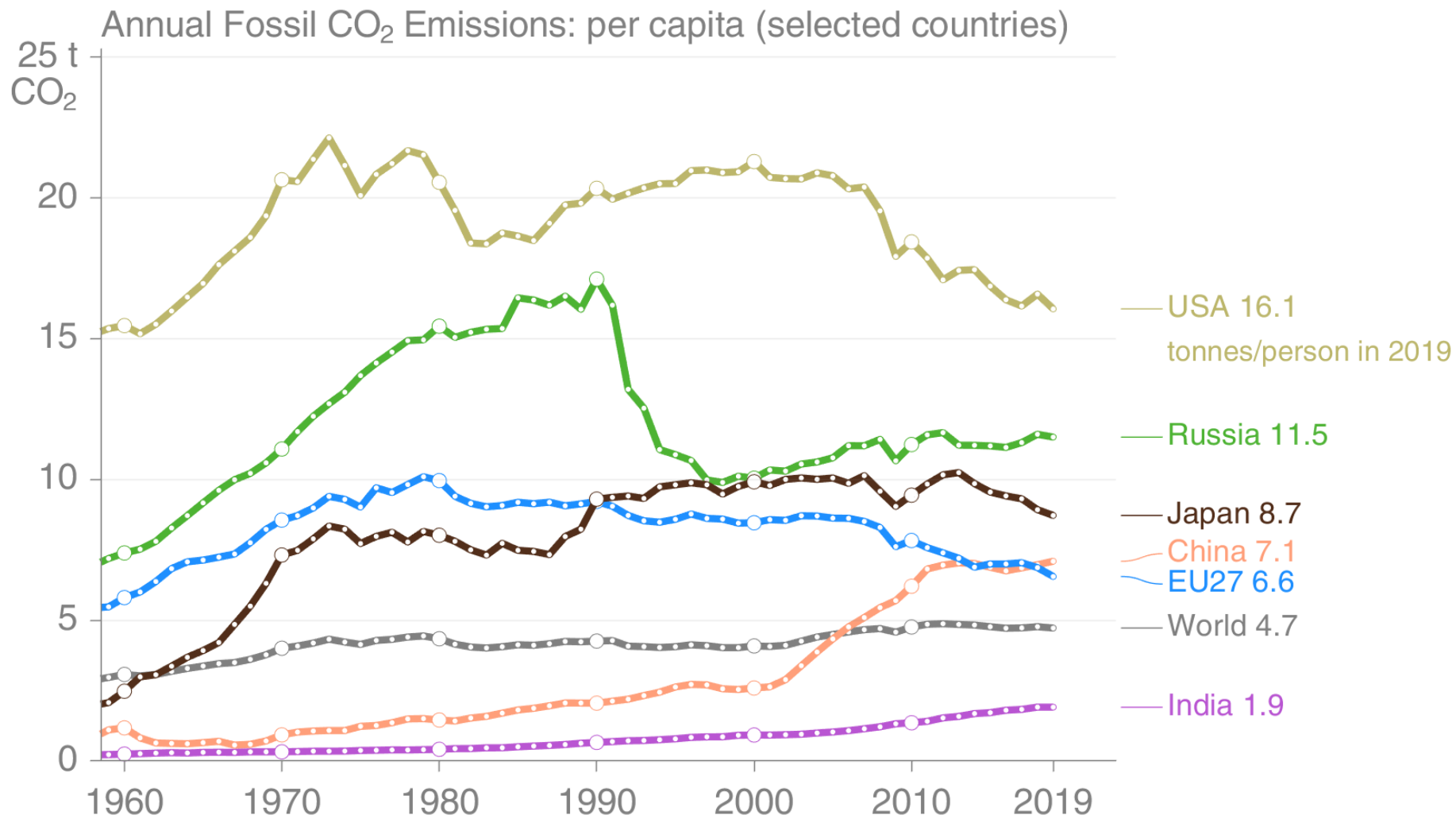


The top six emitters in 2019 covered 65% of global emissions  
China 28%, United States 15%, EU27 8%, India 7%, Russia 5%, and Japan 3%



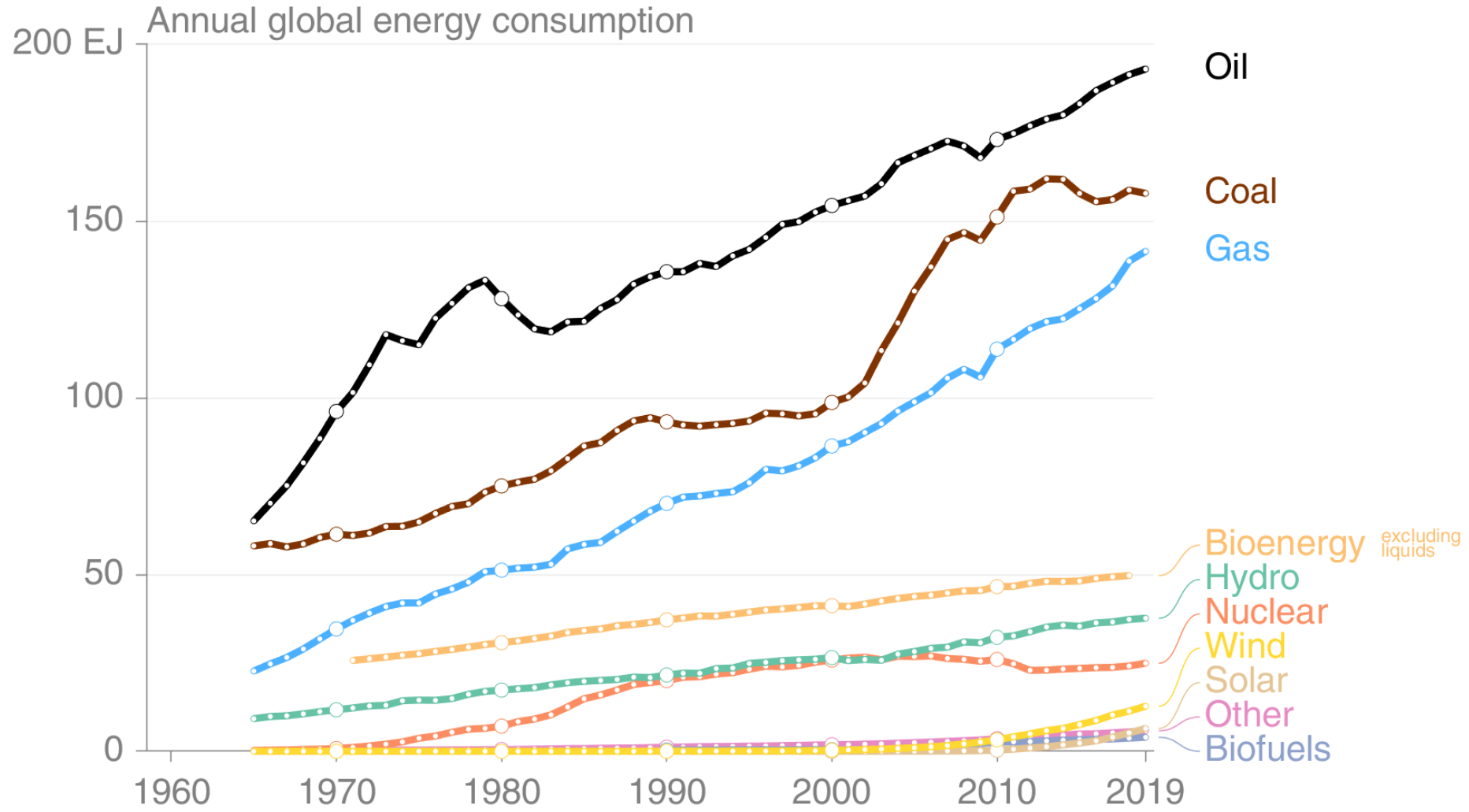
Quelle: CDIAC; Peters et al 2019; Friedlingstein et al 2020; Global Carbon Budget 2020





© Global Carbon Project • Data: CDIAC/GCP



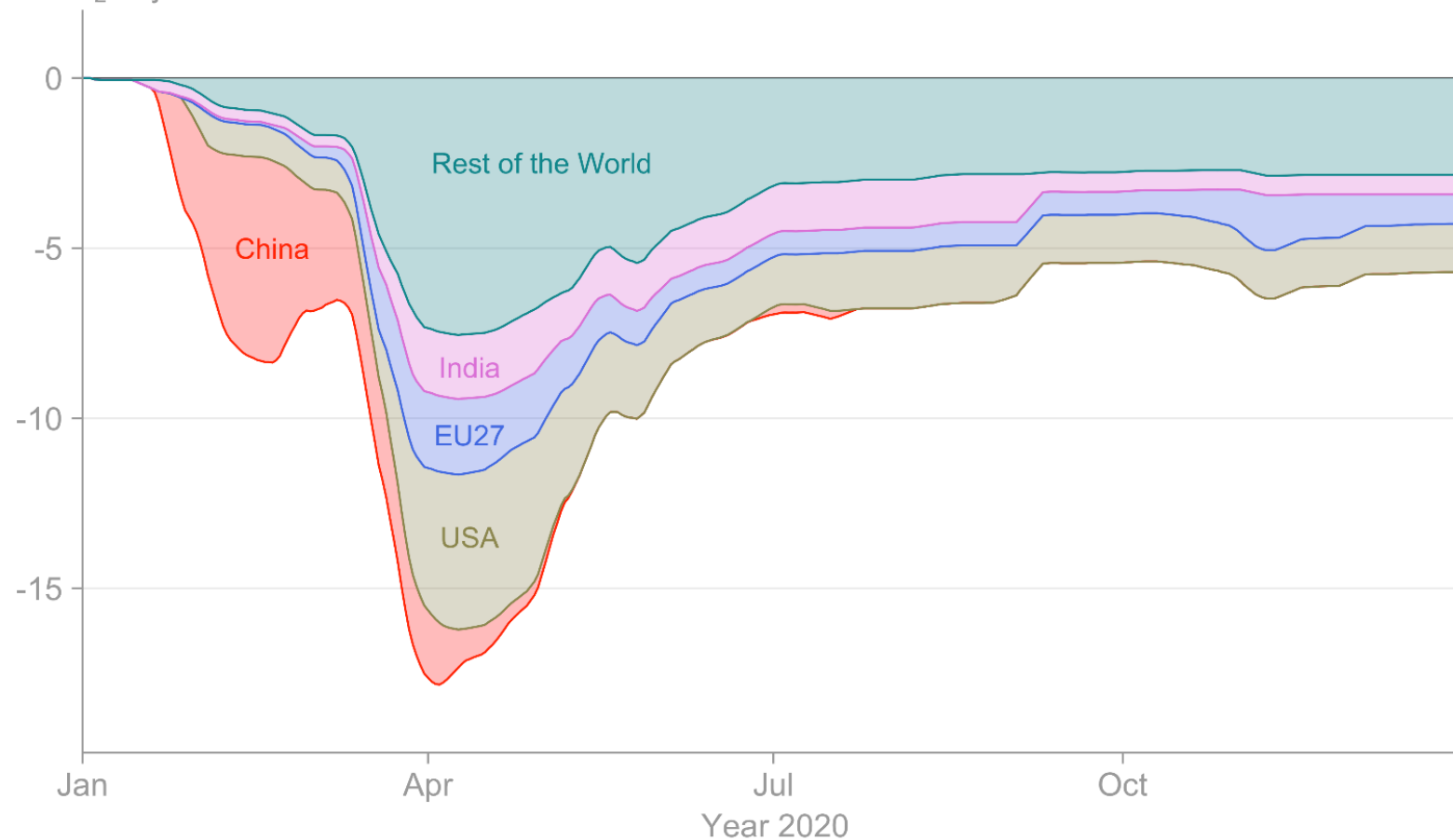


© Global Carbon Project • Data: BP, IEA (bioenergy)



Quelle: BP 2020; Global Carbon Budget 2020

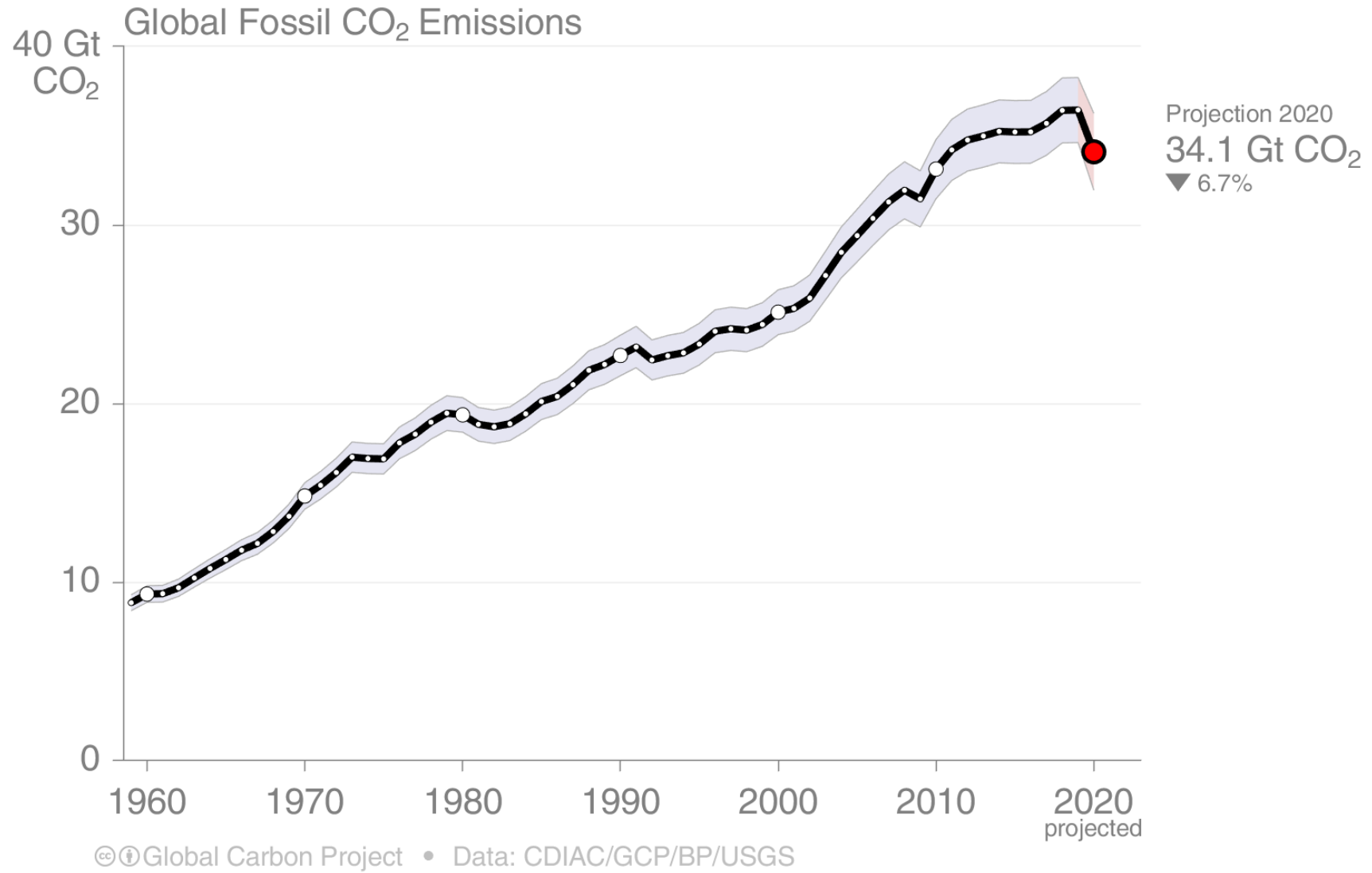
Change in global daily fossil CO<sub>2</sub> emissions  
MtCO<sub>2</sub> day<sup>-1</sup>

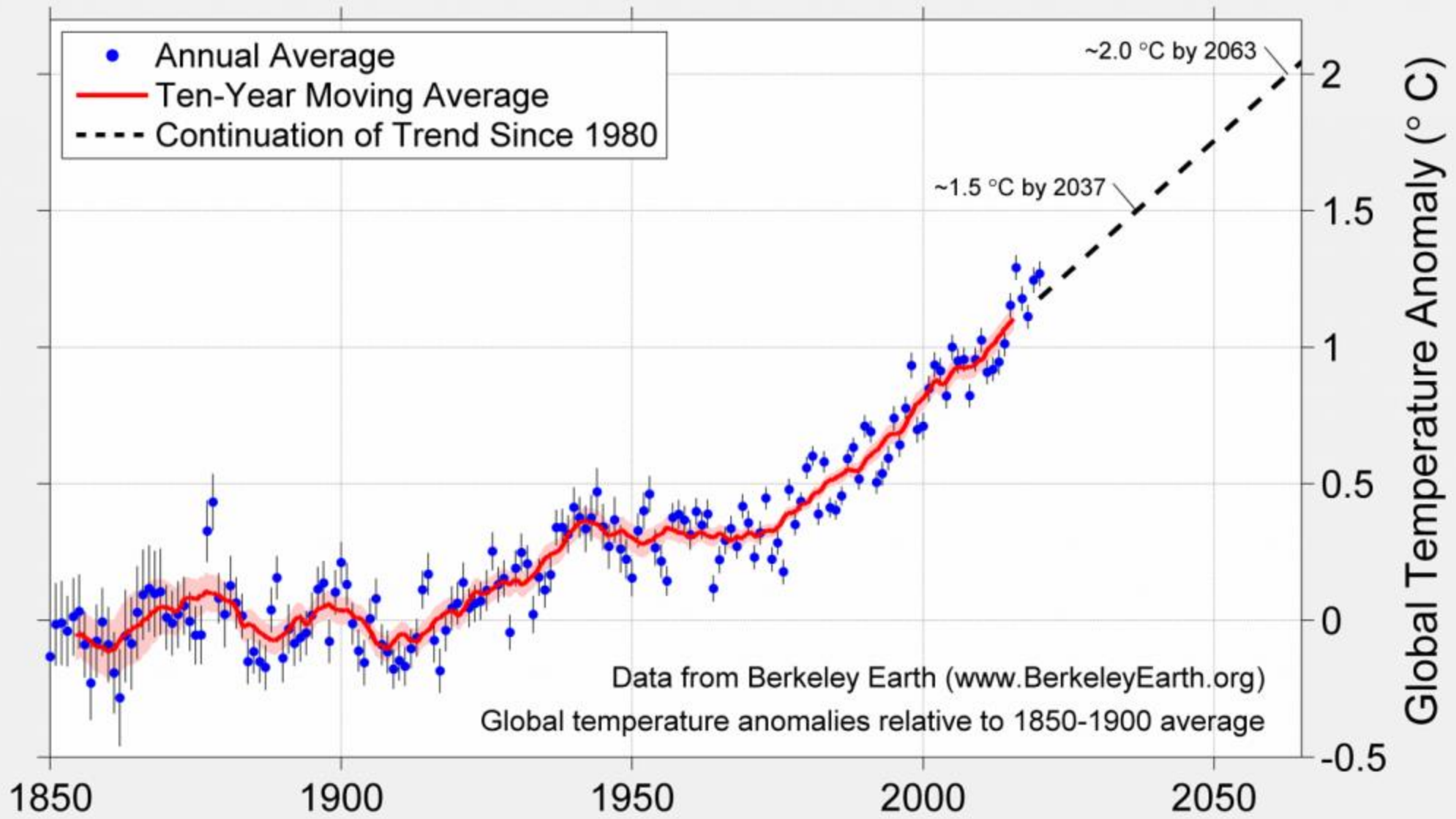


© Updated from Le Quéré et al. Nature Climate Change (2020); Global Carbon Project

·Figure: @Jones\_MattW

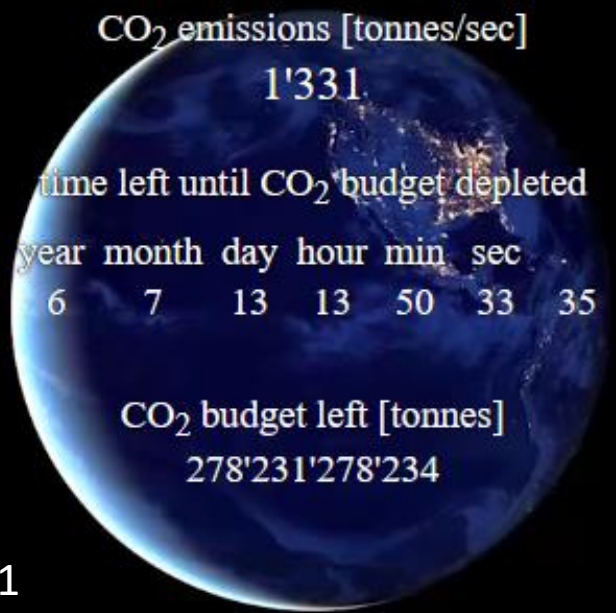
## 2020 lagen die Emissionen ca. auf dem Niveau von 2011





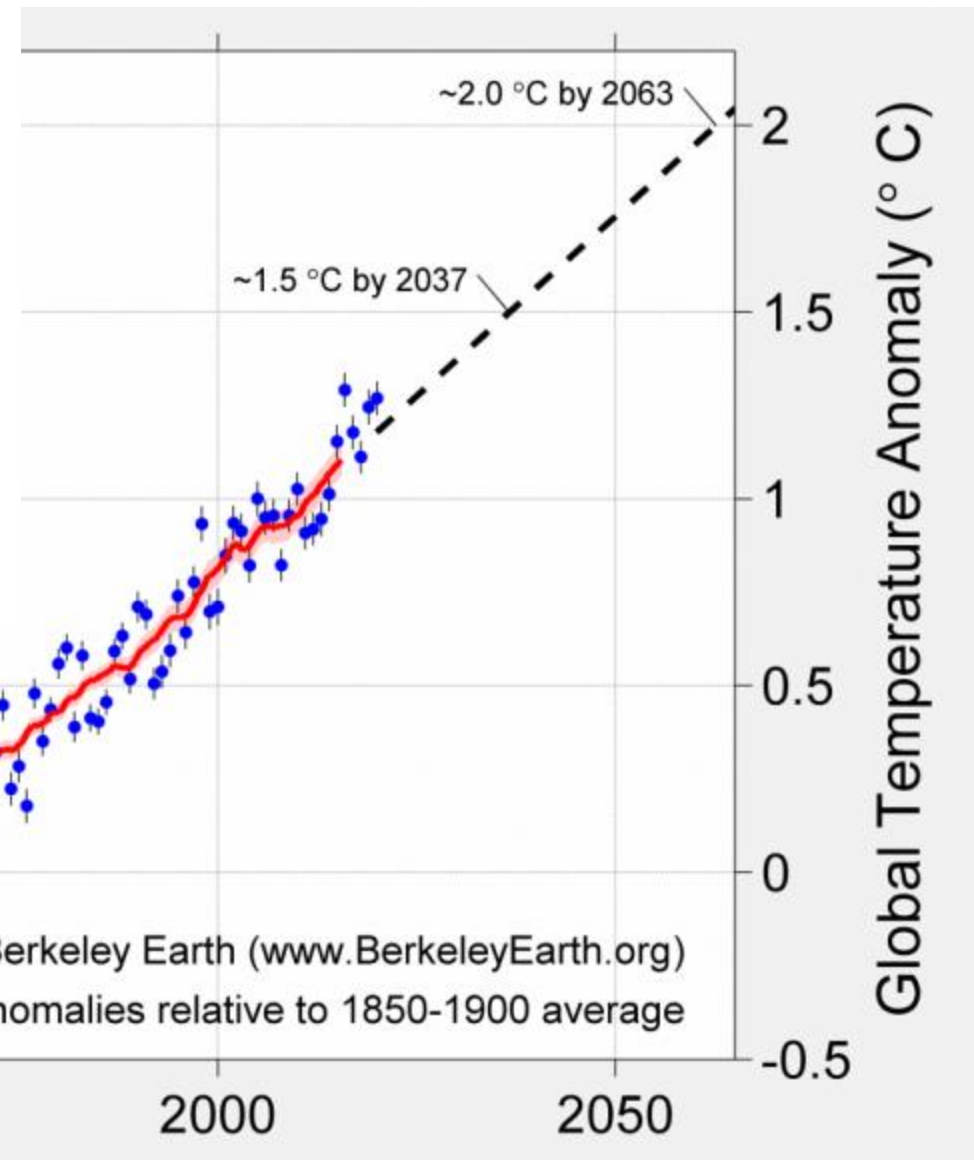
2°C scenario

1.5°C scenario

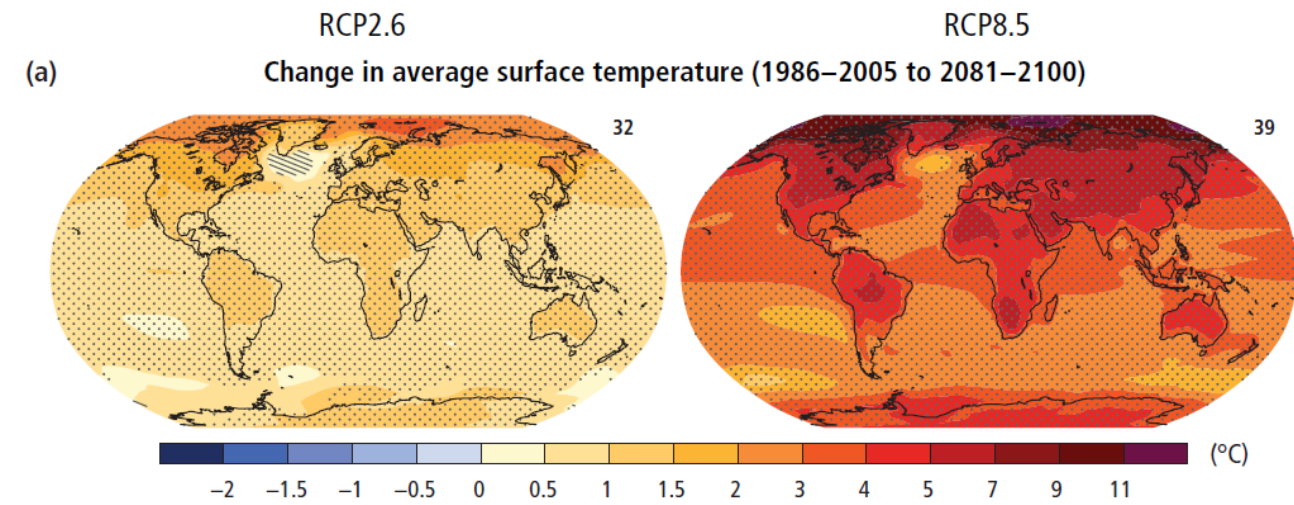
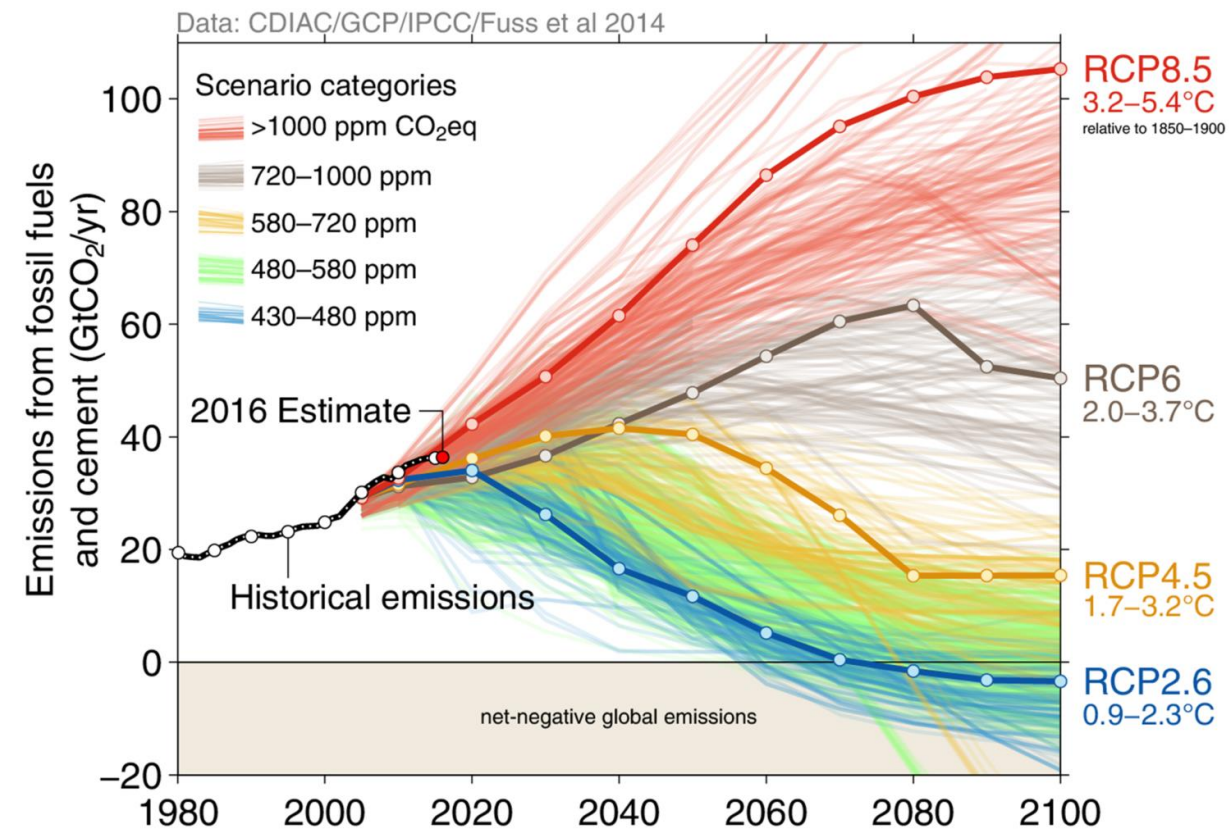


Stand: 17.5.2021

Quelle: <https://www.mcc-berlin.net/forschung/co2budget.html/>

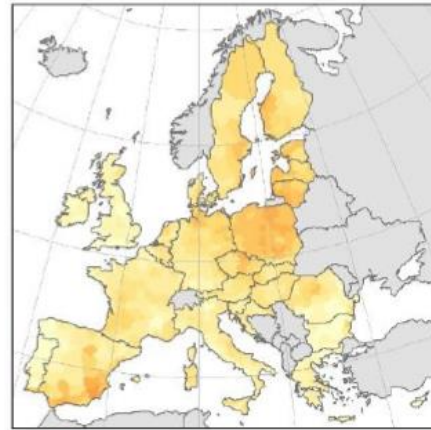
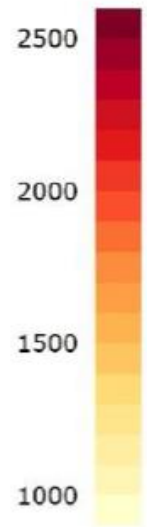


Quelle: <http://berkeleearth.org/global-temperature-report-for-2020/>

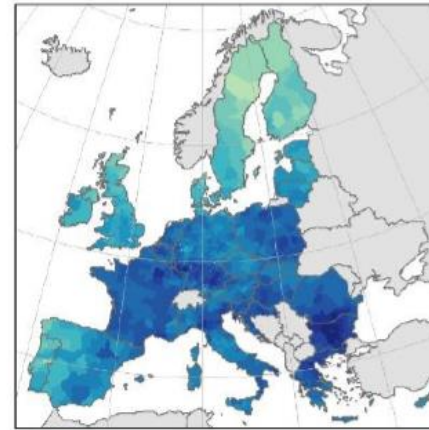




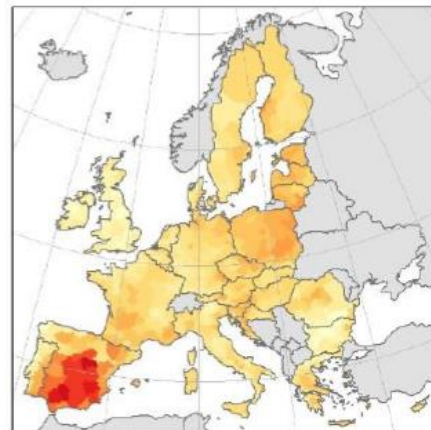
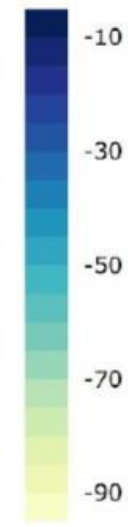
Relative change in people exposed to heat waves (%)



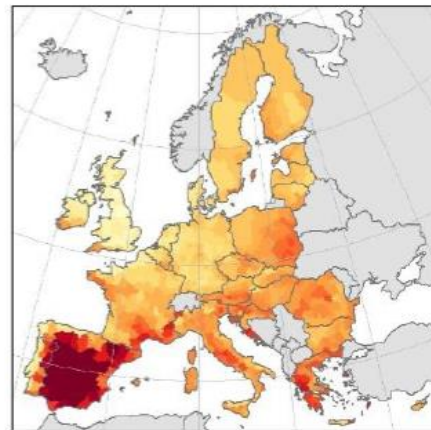
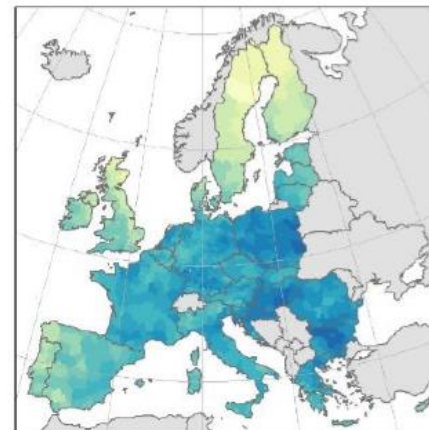
1.5 °C



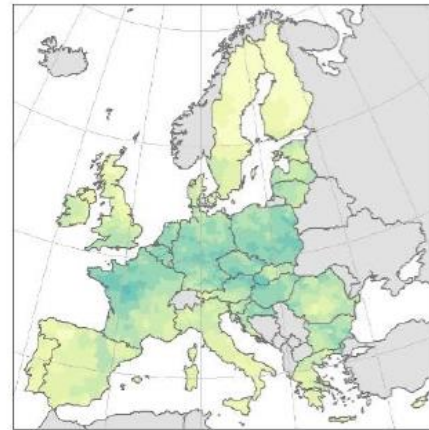
Relative change in people exposed to cold waves (%)



2 °C



3 °C



base	1.5°C	2.0°C	3.0°C
People annually exposed to a 50-year heatwave (million)			
9.6	105	172	298
Annual fatalities from heatwaves (x1000)			
2.8	30.3	52.4	96.0

base	1.5°C	2.0°C	3.0°C
People annually exposed to a 50-year cold wave (million)			
9.6	5.1	2.8	1.2
Annual fatalities from cold waves			
79	34	20	9

Quelle: JRC PESETA IV project, 2020

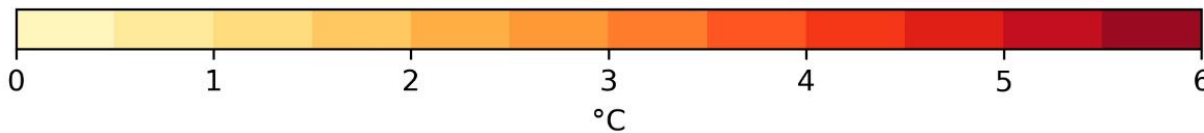
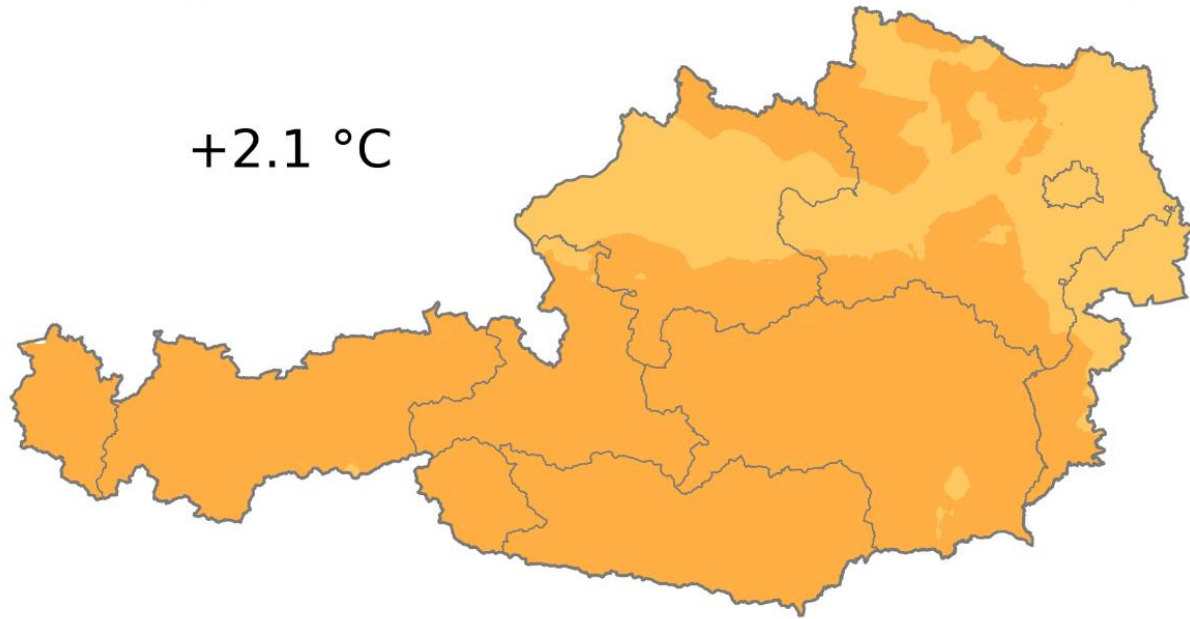


# Mittlere Temperaturänderung relativ zu 1981 - 2010

2091 - 2100

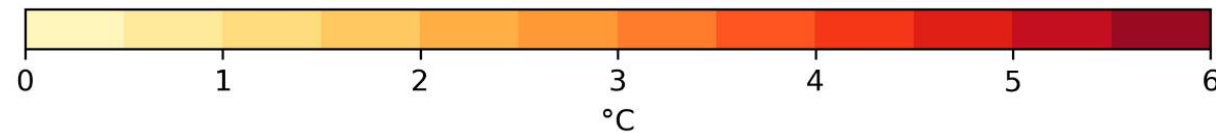
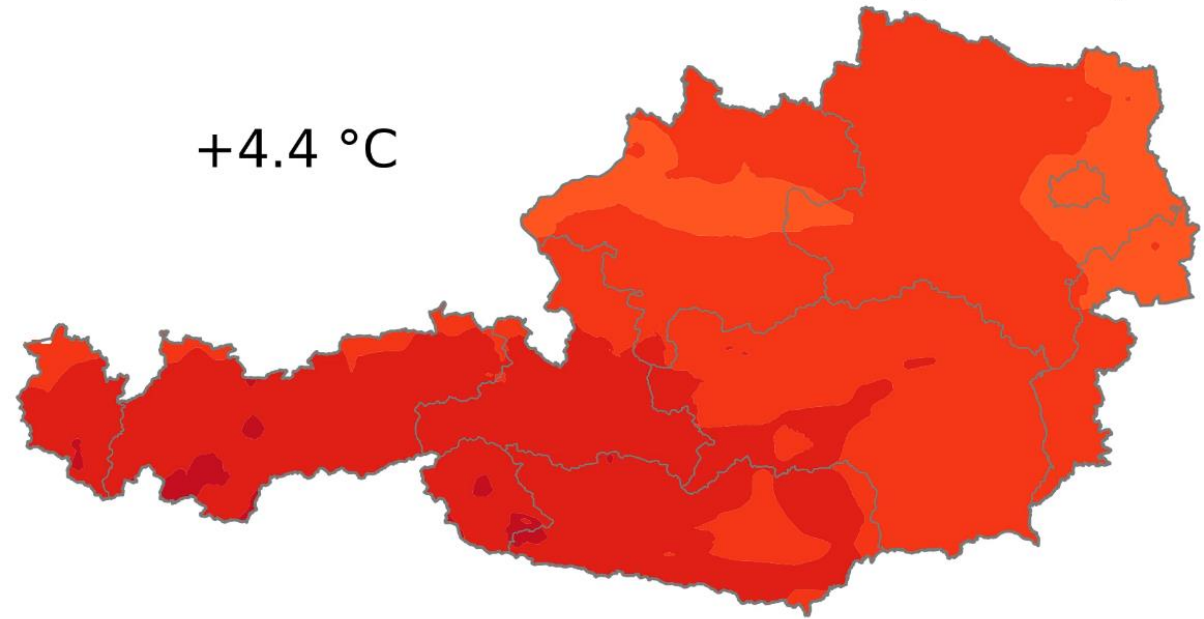
Mäßige Klimaschutzmaßnahmen (RCP4.5)

+2.1 °C

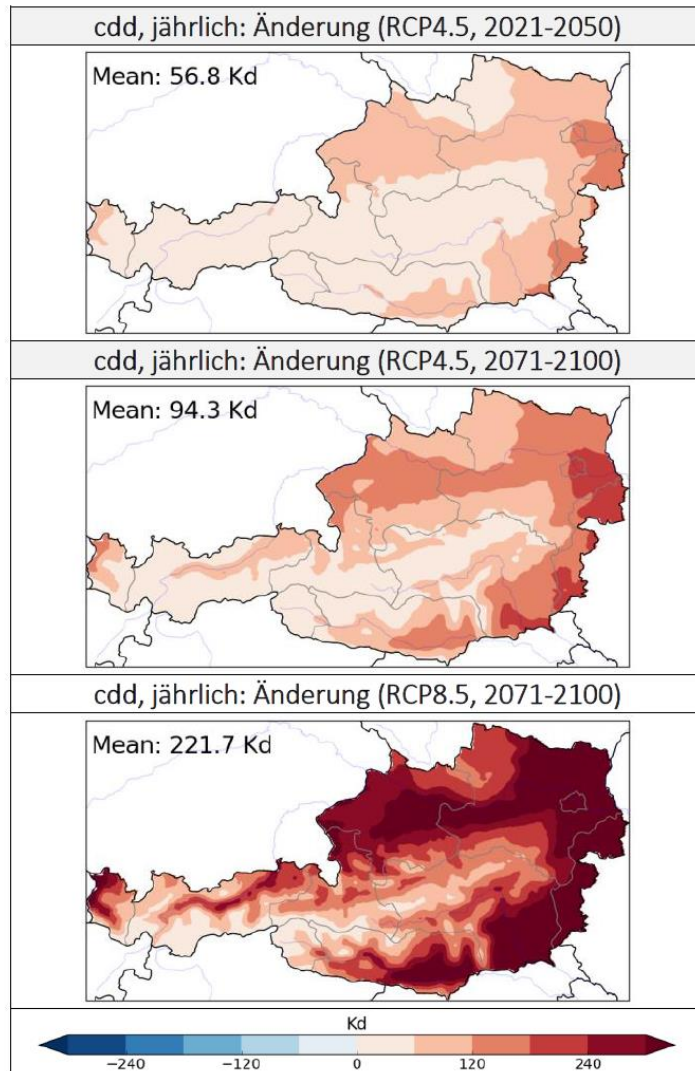


Keine Klimaschutzmaßnahmen (RCP8.5)

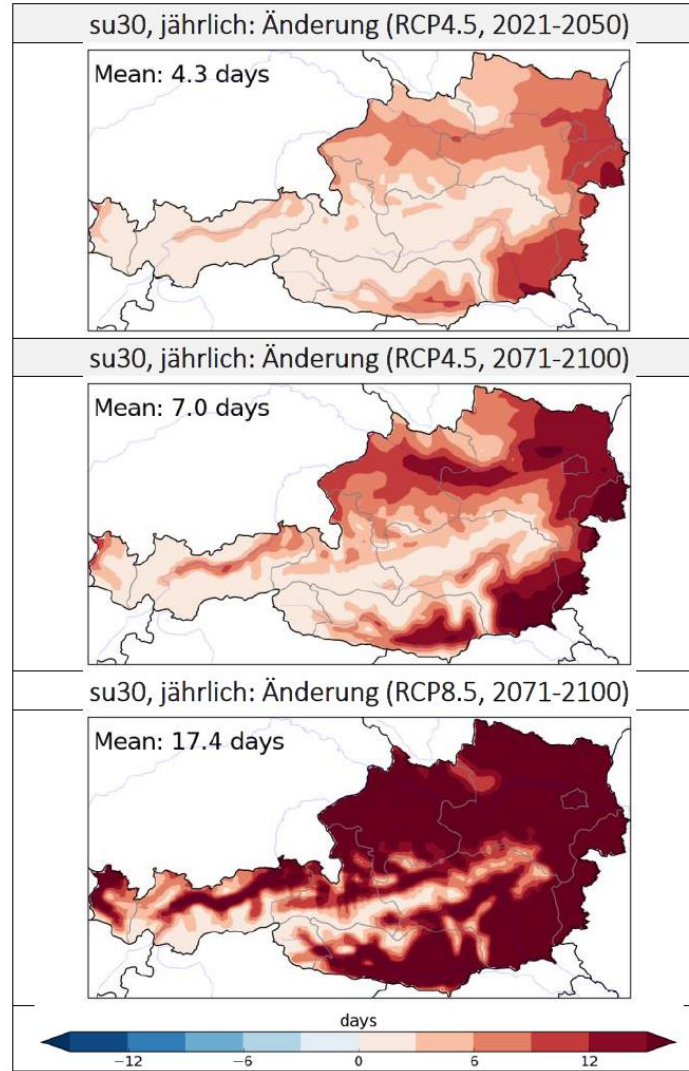
+4.4 °C



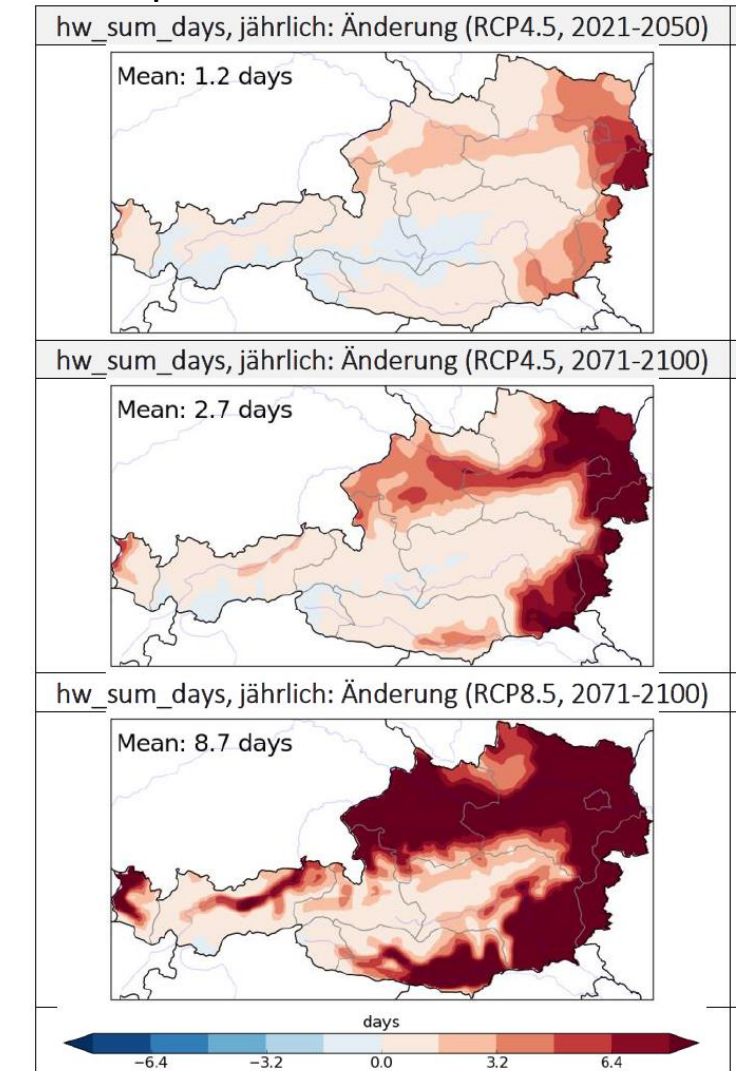
## Kühlgradtage



## Hizetage



## Hitzeepisoden

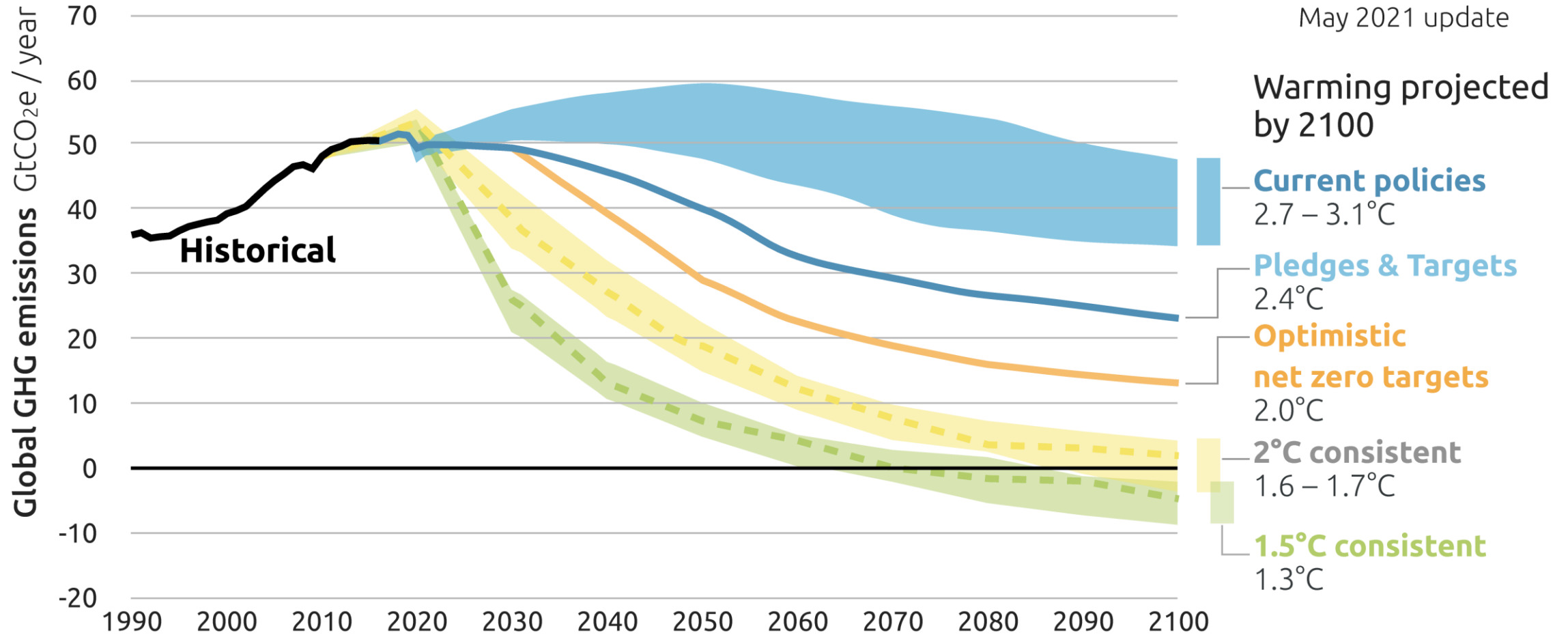


# 2100 WARMING PROJECTIONS

Emissions and expected warming based on pledges and current policies

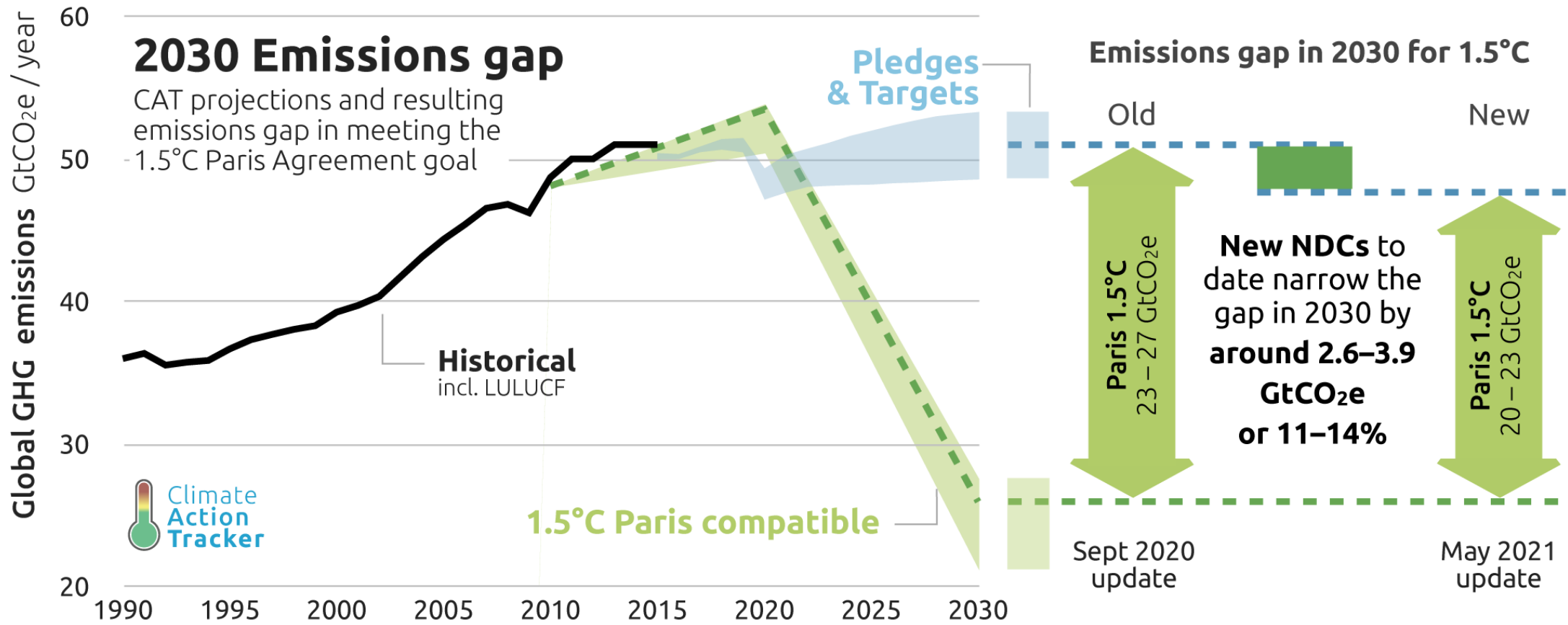


May 2021 update

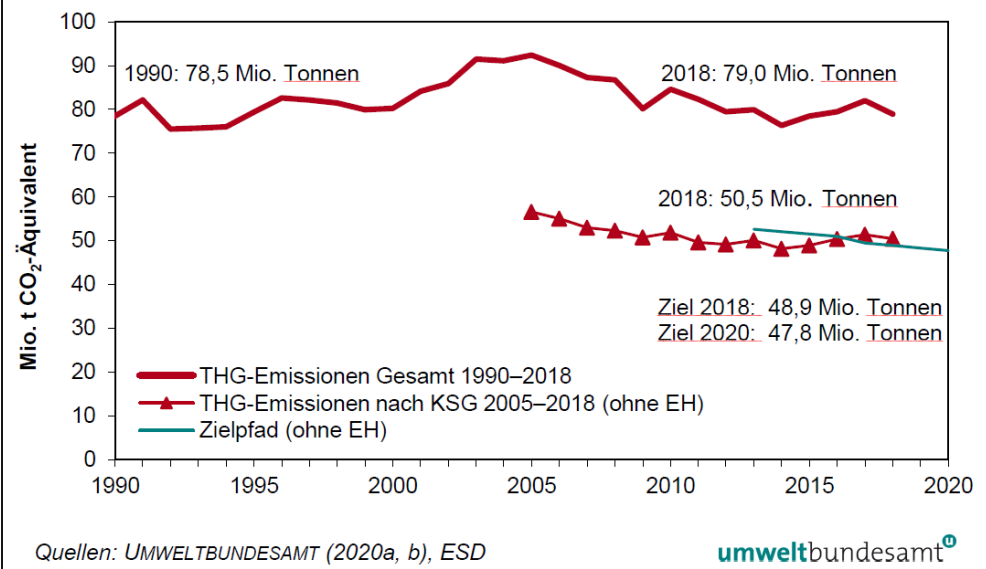


Quelle: <https://climateactiontracker.org>

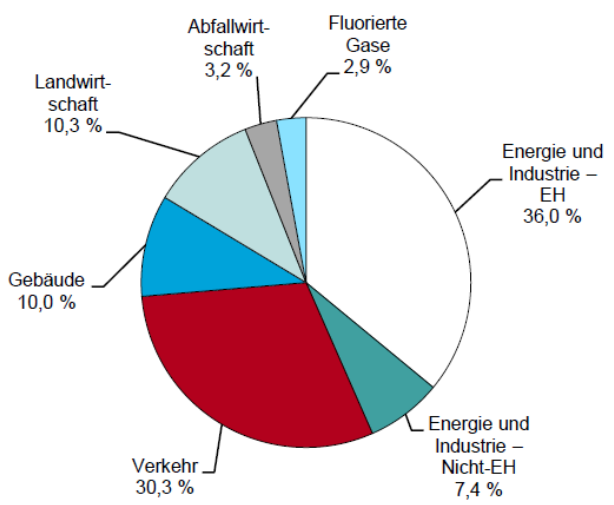




### THG-Emissionen und Zielpfad



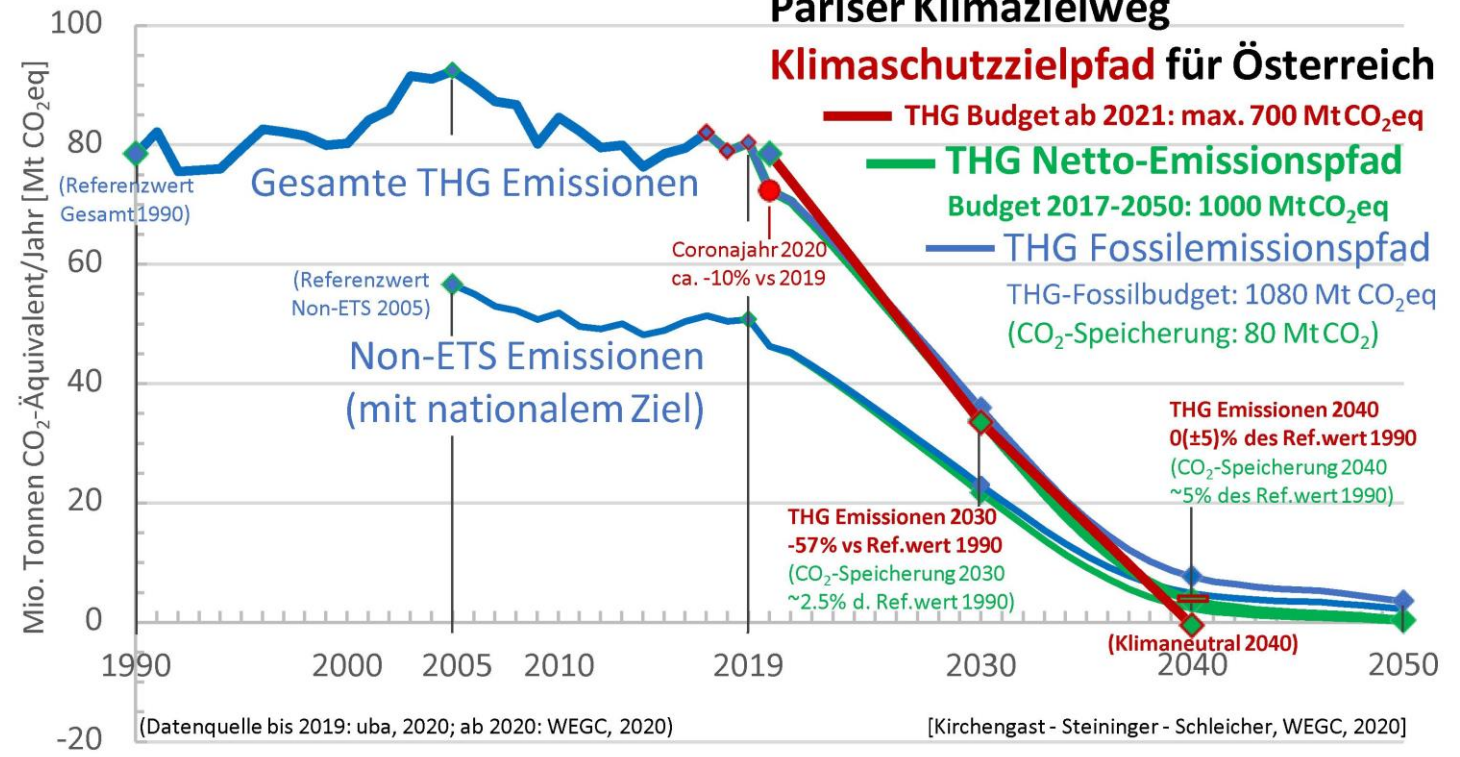
### Anteil der Sektoren an den gesamten THG-Emissionen 2018



Quelle: UMWELTBUNDESAMT (2020a)

Quelle: Umweltbundesamt, 2020

### Pariser Klimazielweg Klimaschutzzielpfad für Österreich



Quelle: WEGC, 2020



**Danke für die Aufmerksamkeit !**

