

**IST DAS KLIMA
NOCH ZU RETTEN?**

**WAS BRINGT DER
ZUKUNFTSENTSCHEID?**

**Mittwoch
03.09.25
19 Uhr**

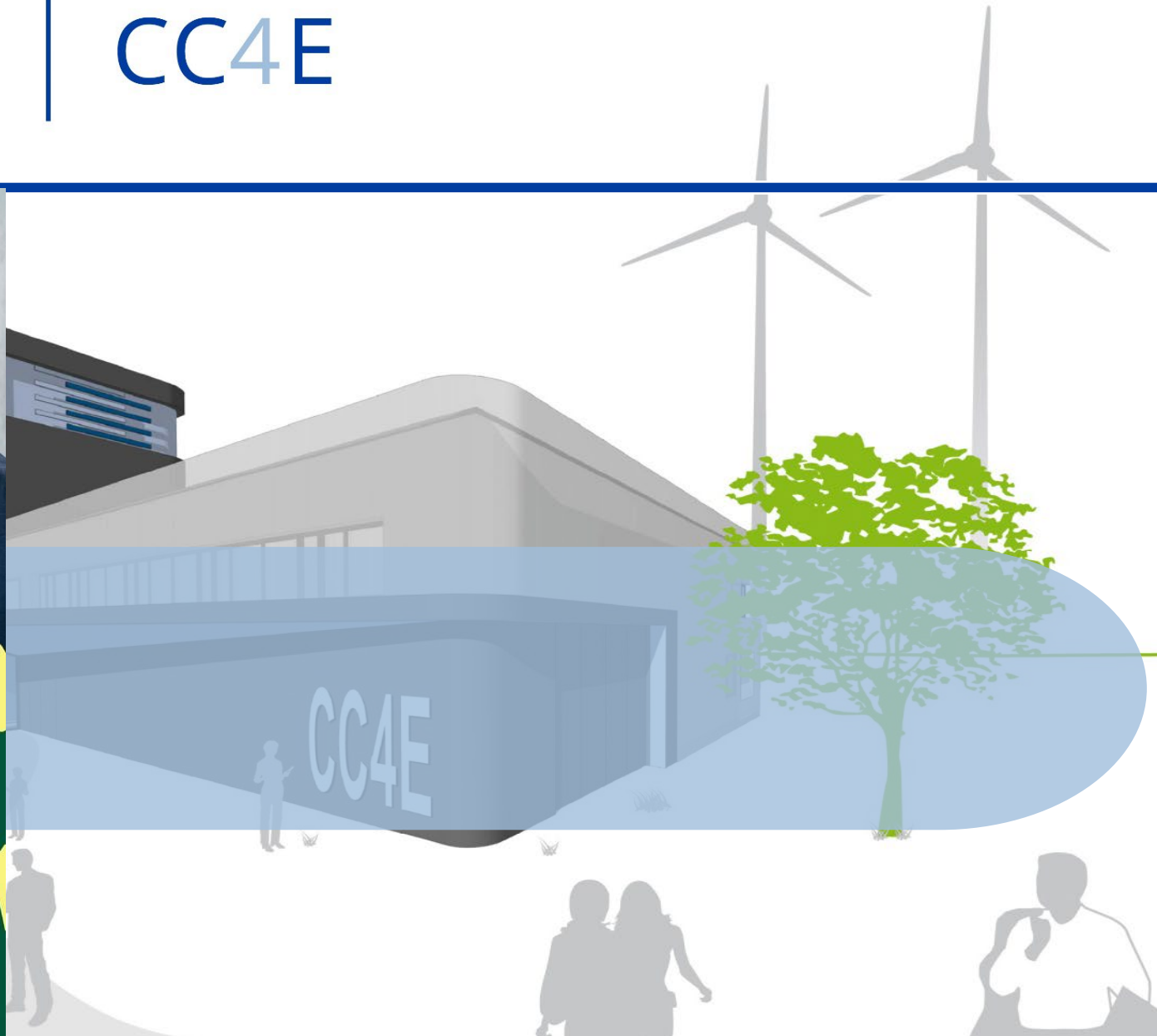
DIE GRÜNEN BERGEDORF laden ein:

**Vortrag und Gespräch mit
Professor Dr. Hans Schäfers**

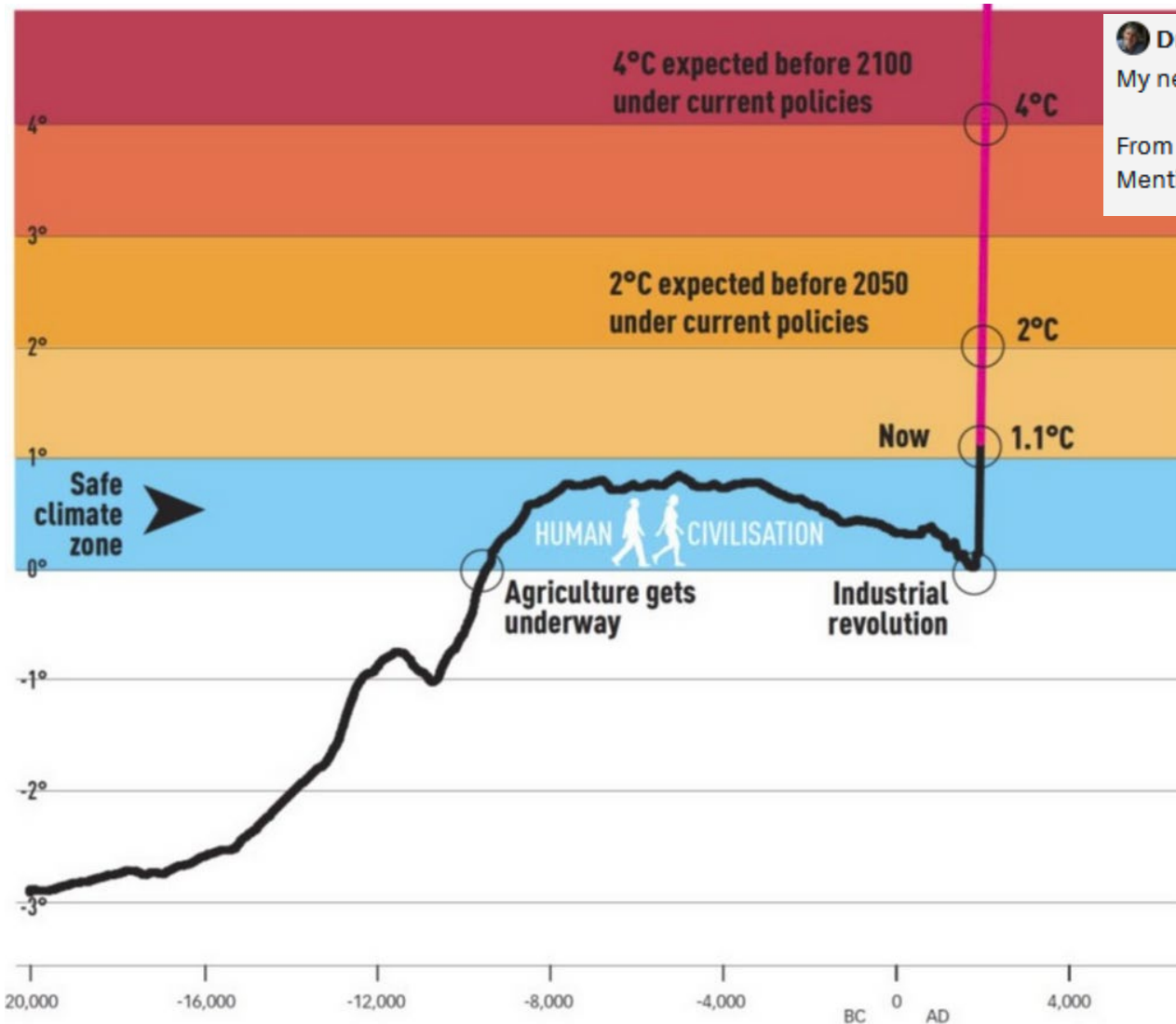
Leiter Competence Center für Erneuerbare Energien
und Energieeffizienz, HAW Hamburg

Serrahn Eins, Serrahnstraße 1, 21029 Hamburg

gruene-bergedorf.de



Unsere Klimanische



Dr Charlie Gardner @CharlieJGardner · 4. Juli

My new favourite climate graphic

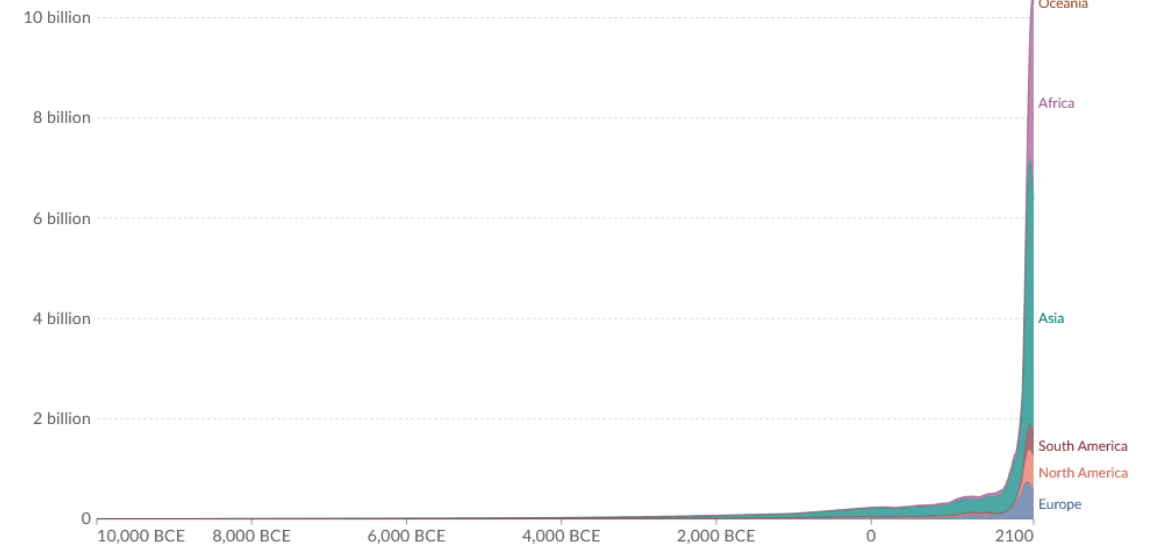
From Jane Morton @SafeClimate's excellent free booklet 'Don't Mention the Emergency?'

Population by world region

Historic estimates with future projections based on the UN medium-fertility scenario.

All together ▾

Relative



Source: HYDE (2017); Gapminder (2023); UN (2022)

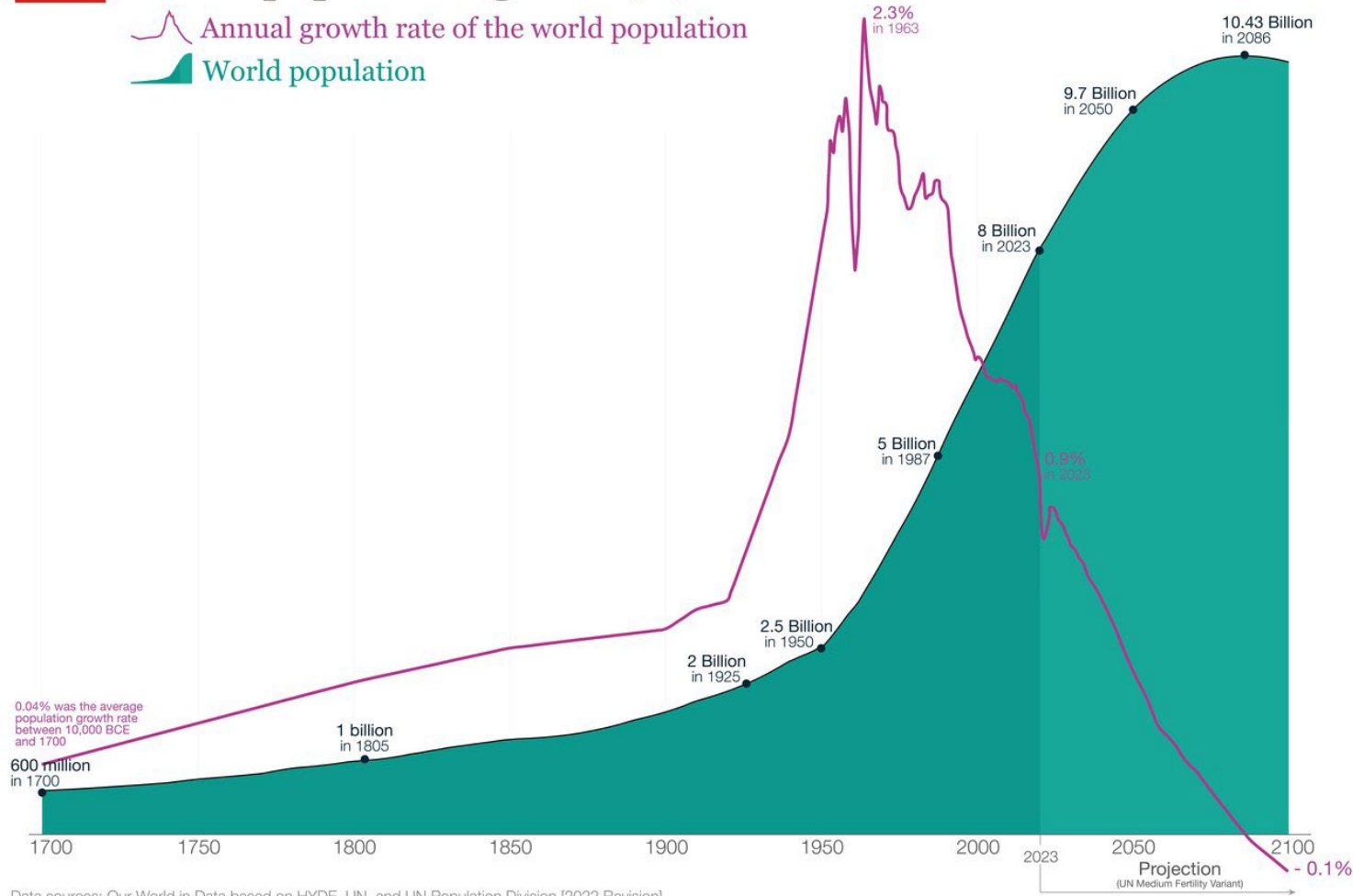
Note: Historical country data is shown based on today's geographical borders.

OurWorldInData.org/population-growth/ • CC BY



World population growth, 1700-2100

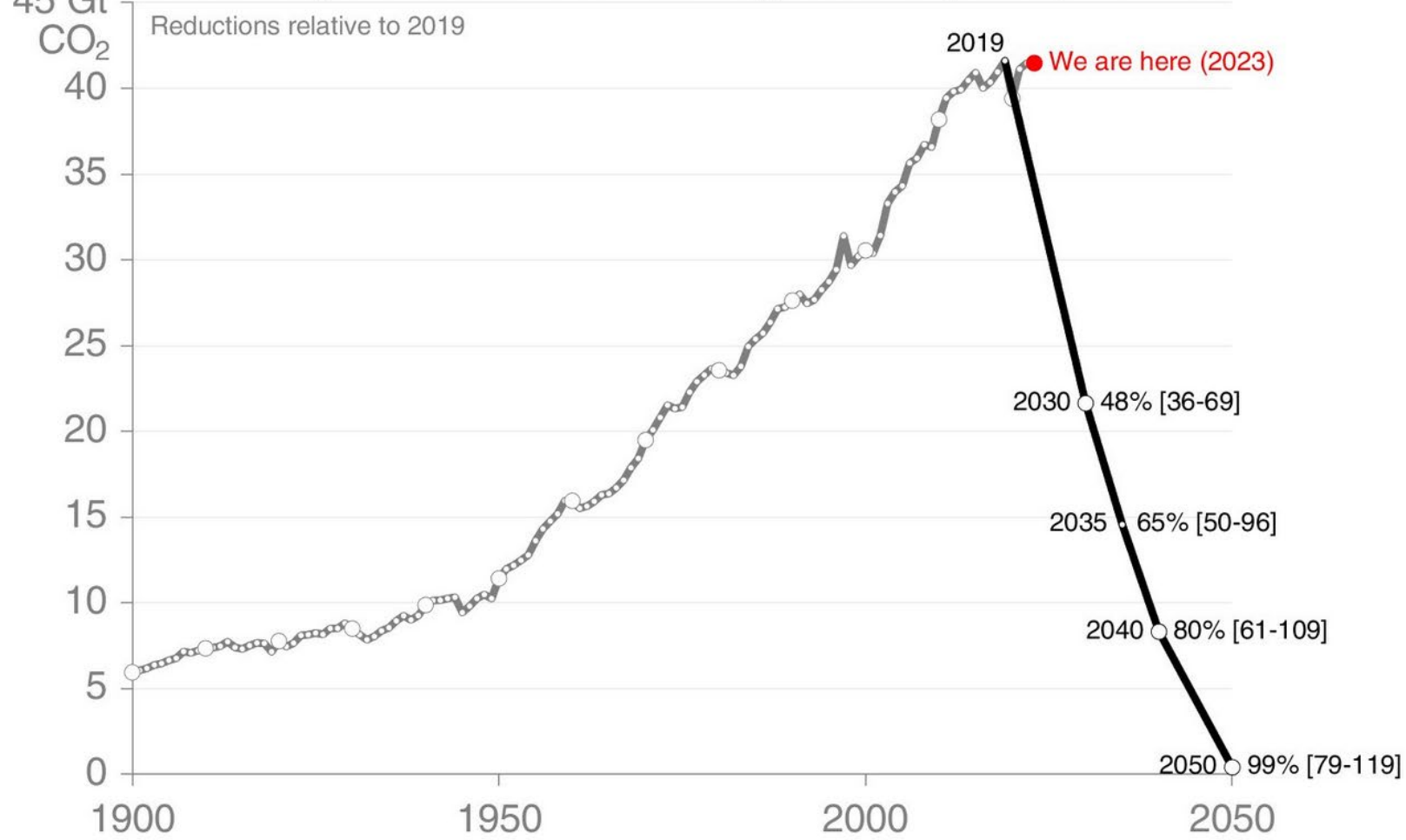
Annual growth rate of the world population
World population



Data sources: Our World in Data based on HYDE, UN, and UN Population Division [2022 Revision]
This is a visualization from [OurWorldinData.org](https://ourworldindata.org), where you find data and research on how the world is changing.

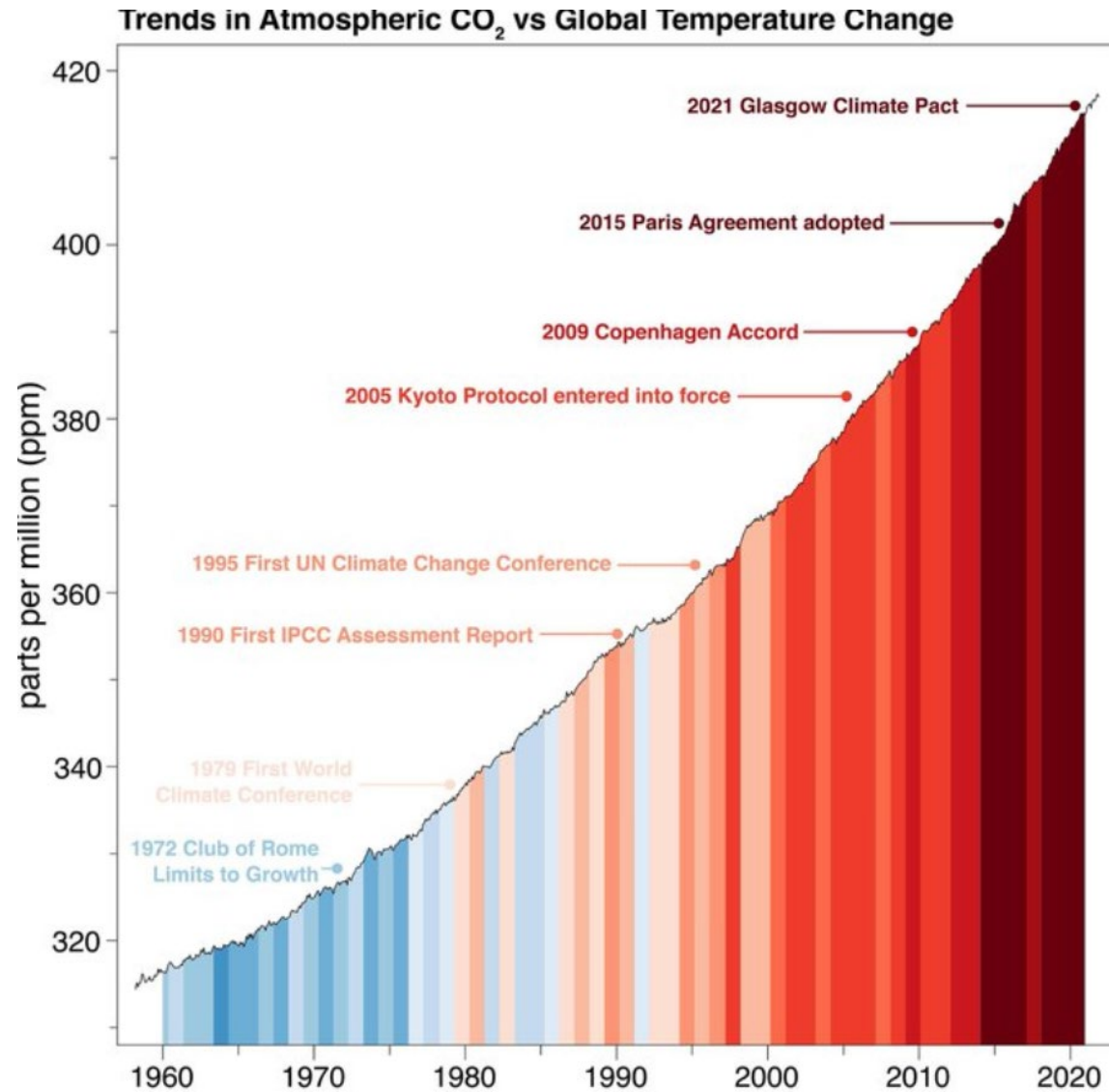
Licensed under CC-BY by the authors Max Roser and Hannah Ritchie.

Global CO₂ Emissions: Limit warming to 1.5°C (>50%) with no or limited overshoot

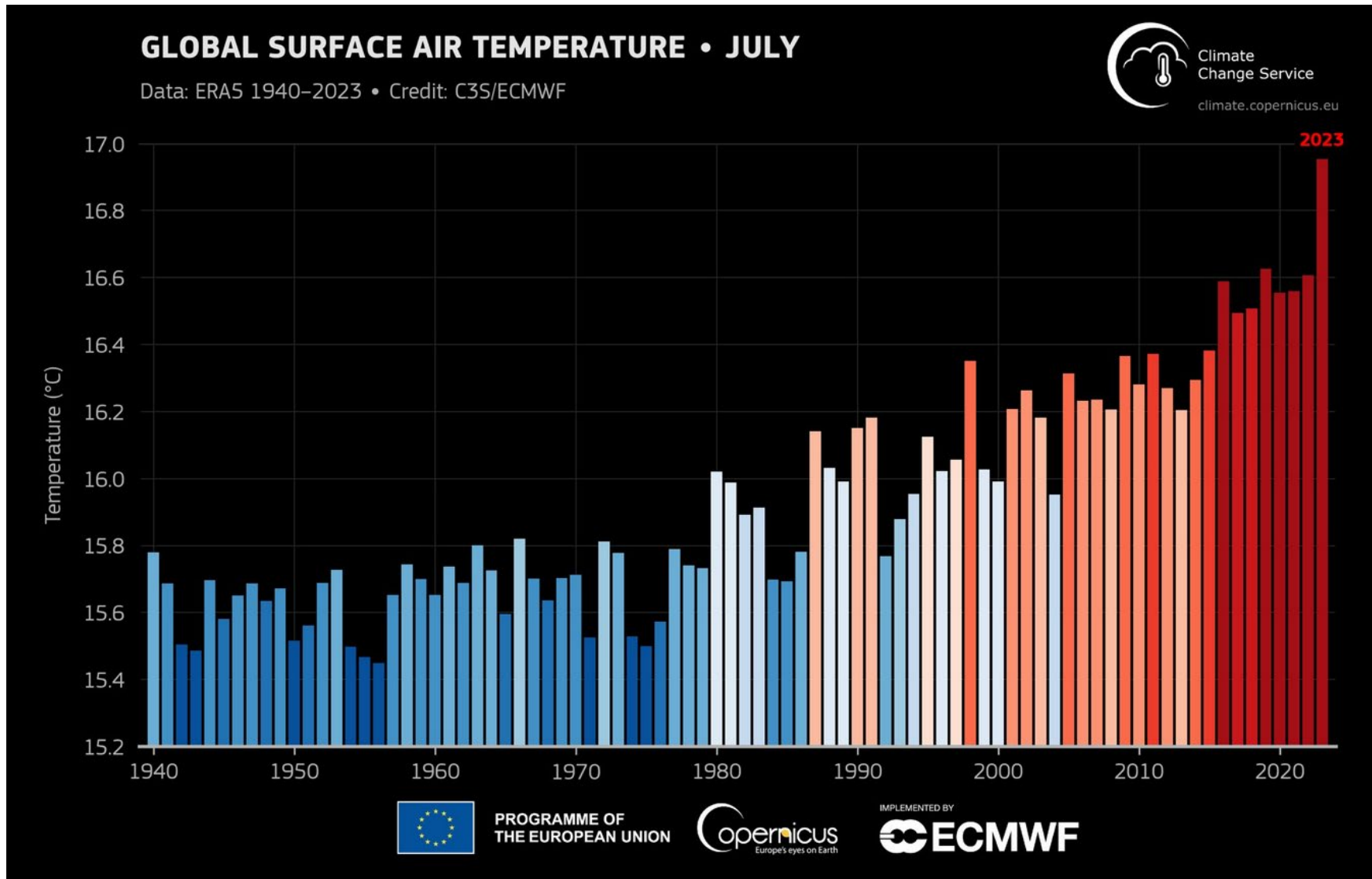


©@Peters_Glen • Data: Global Carbon Budget (2022); IPCC SYR Table SPM.1

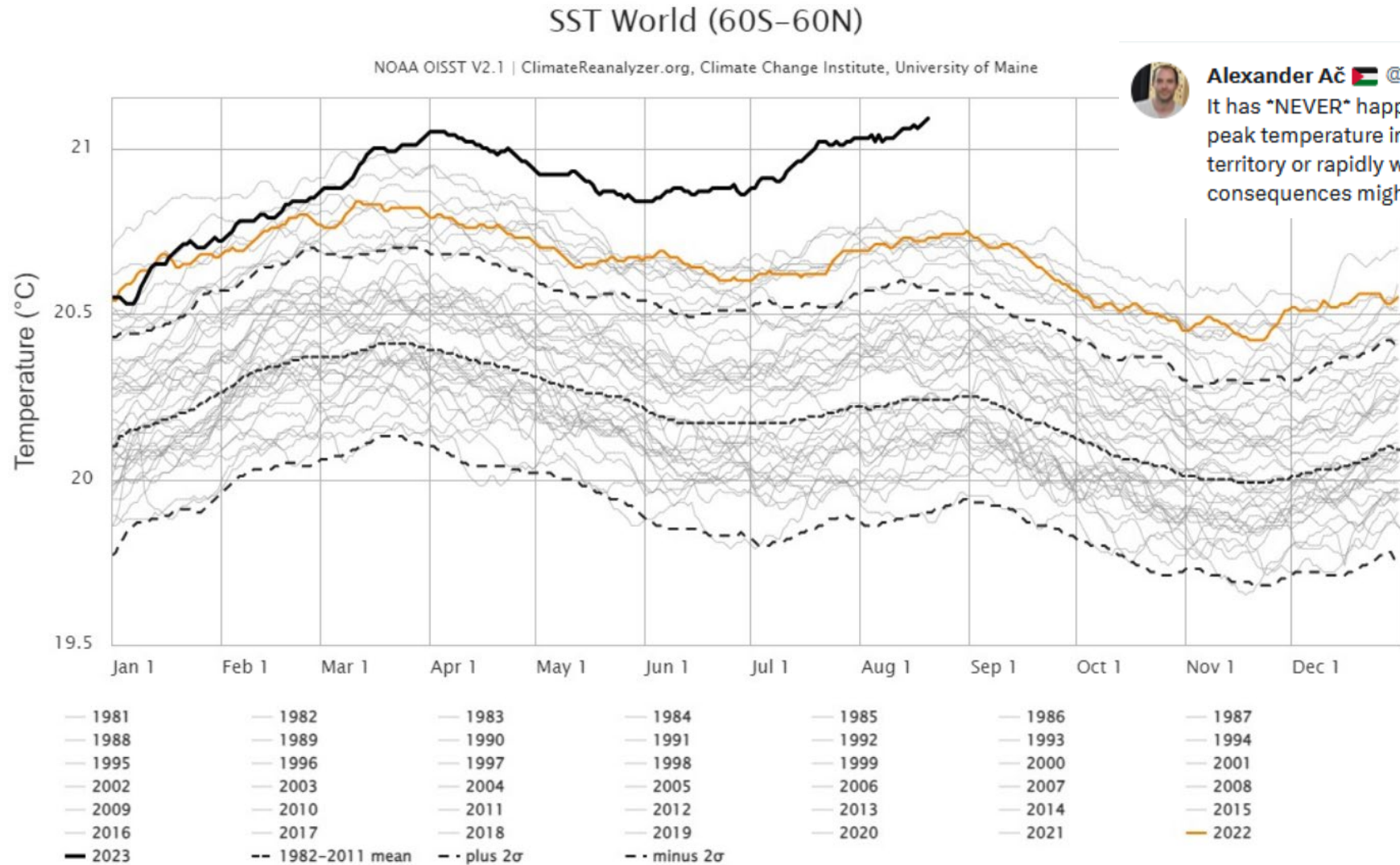
Entwicklung CO₂ Konzentration



Entwicklung Globale Temperaturen jeweils Juli eines Jahres (1940-2023)



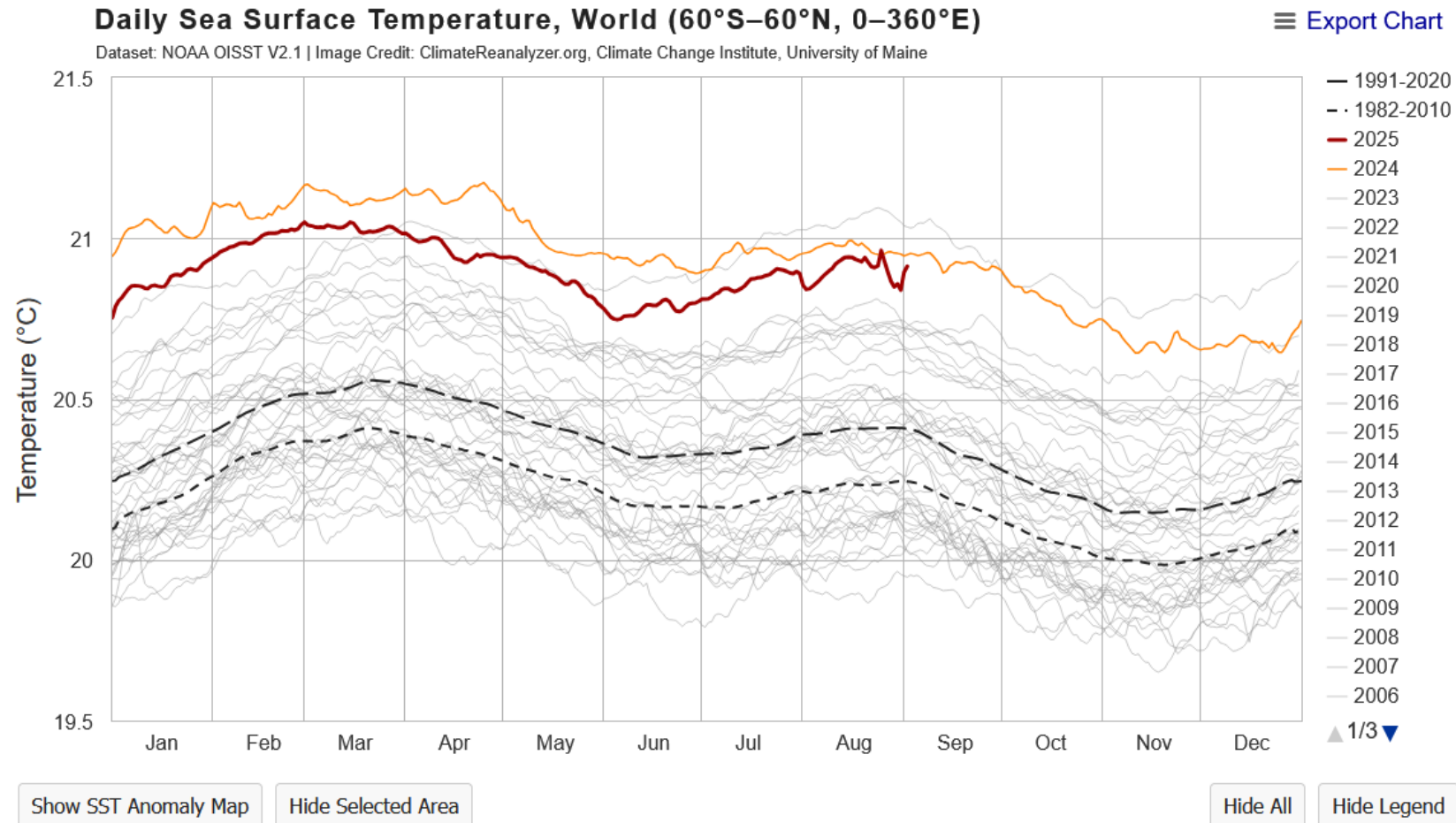
Entwicklung globale durchschn. Oberflächentemperatur der Meere (1981 – 2023)



Alexander Ač 🇪🇬 @Lacertko · 14. Aug. ...

It has *NEVER* happened in known history, that global ocean would reach peak temperature in august. But here we are, in completely uncharted territory or rapidly warming biosphere. Hard to even imagine what the consequences might be... [#ClimateCrisis](#)

Entwicklung globale durchschn. Oberflächentemperatur der Meere (1981 – heute)



NOAA OISST V2.1 Sea Surface Temperature (°C)
Tue, Sep 02, 2025 | preliminary

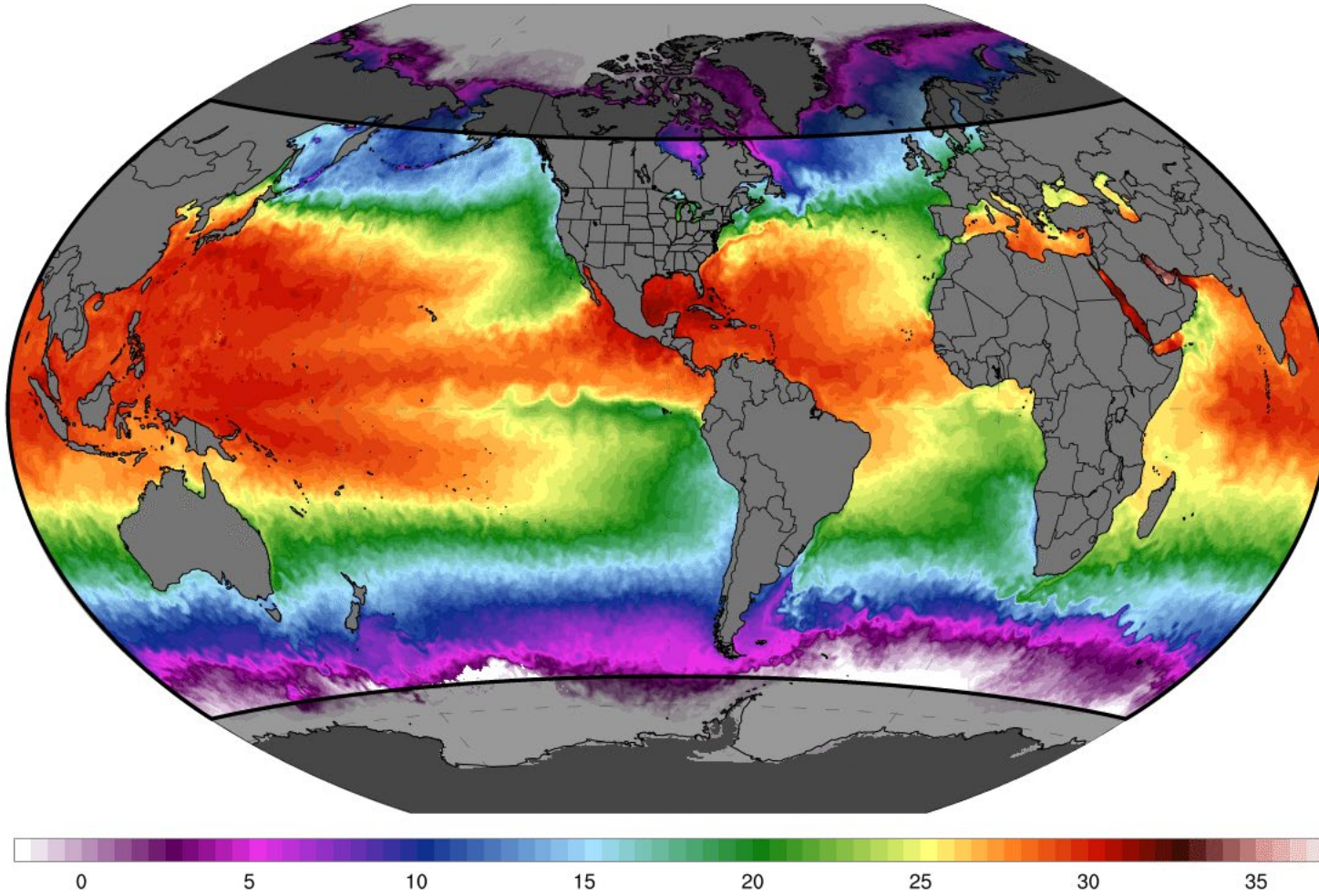
ClimateReanalyzer.org
Climate Change Institute | University of Maine

Oberflächentemperaturen der Meere aktuell global

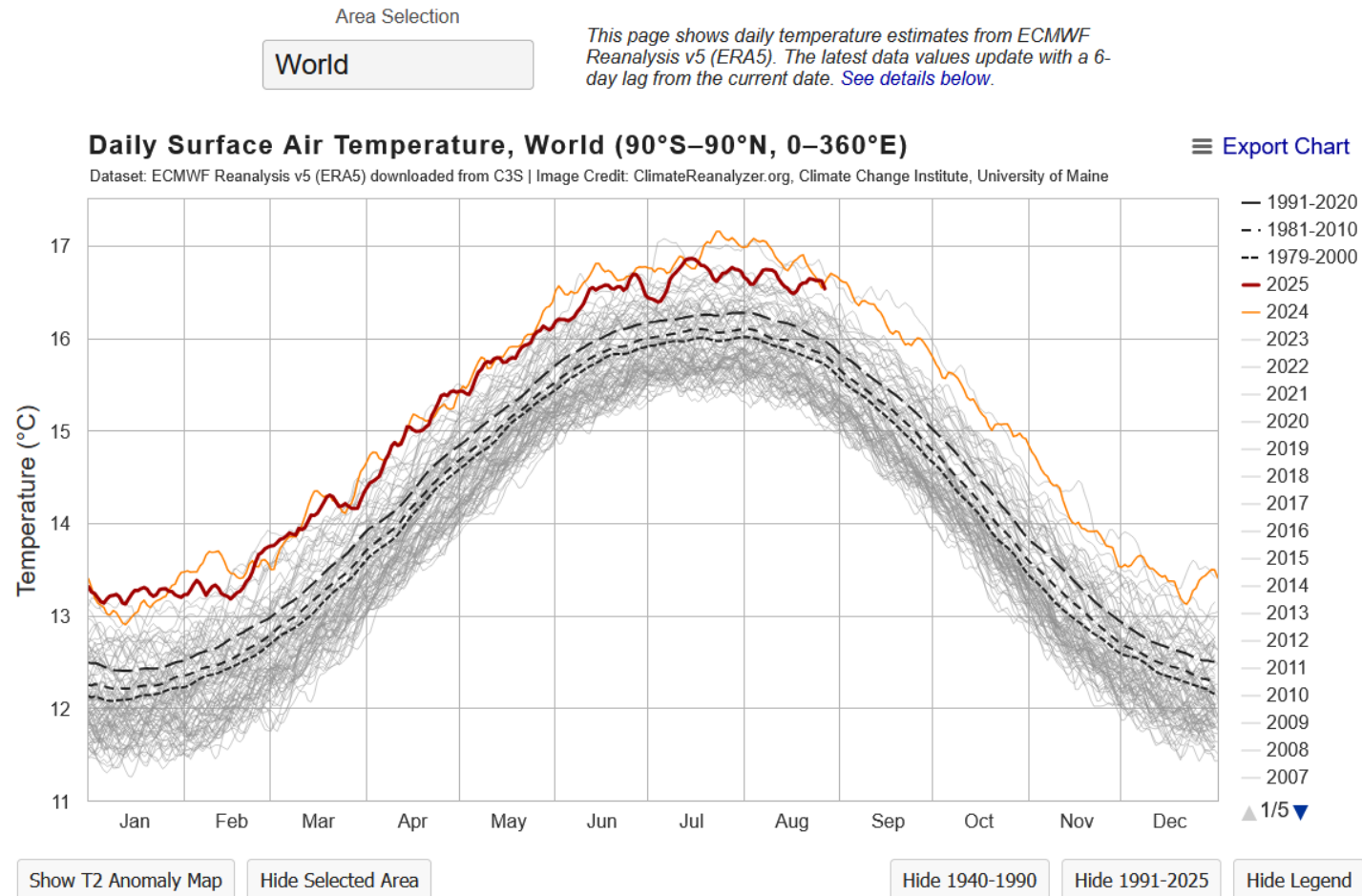
NOAA OISST V2.1 Sea Surface Temperature (°C)

Tue, Sep 02, 2025 | preliminary

ClimateReanalyzer.org
Climate Change Institute | University of Maine



Entwicklung Globale Monatsmitteltemperaturen seit 1940



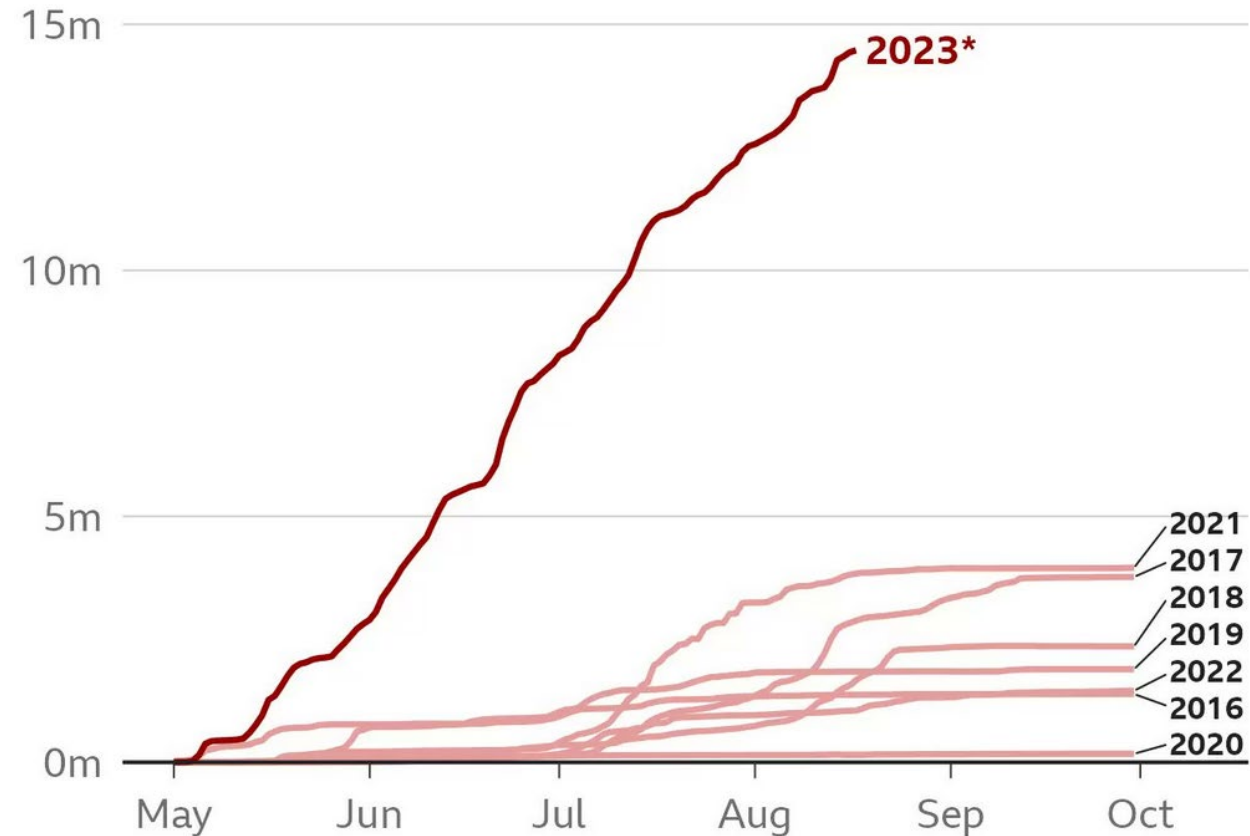
ERA5 2m Temperature (°C)
Wed, Aug 27, 2025 | 1-day Avg

ClimateReanalyzer.org
Climate Change Institute | University of Maine



Canada wildfires are worse than recent years

Estimated cumulative area burned during fire season (hectares)



*Data for 2023 is up to 18 August

Source: Canadian Wildland Fire Information System/CBC

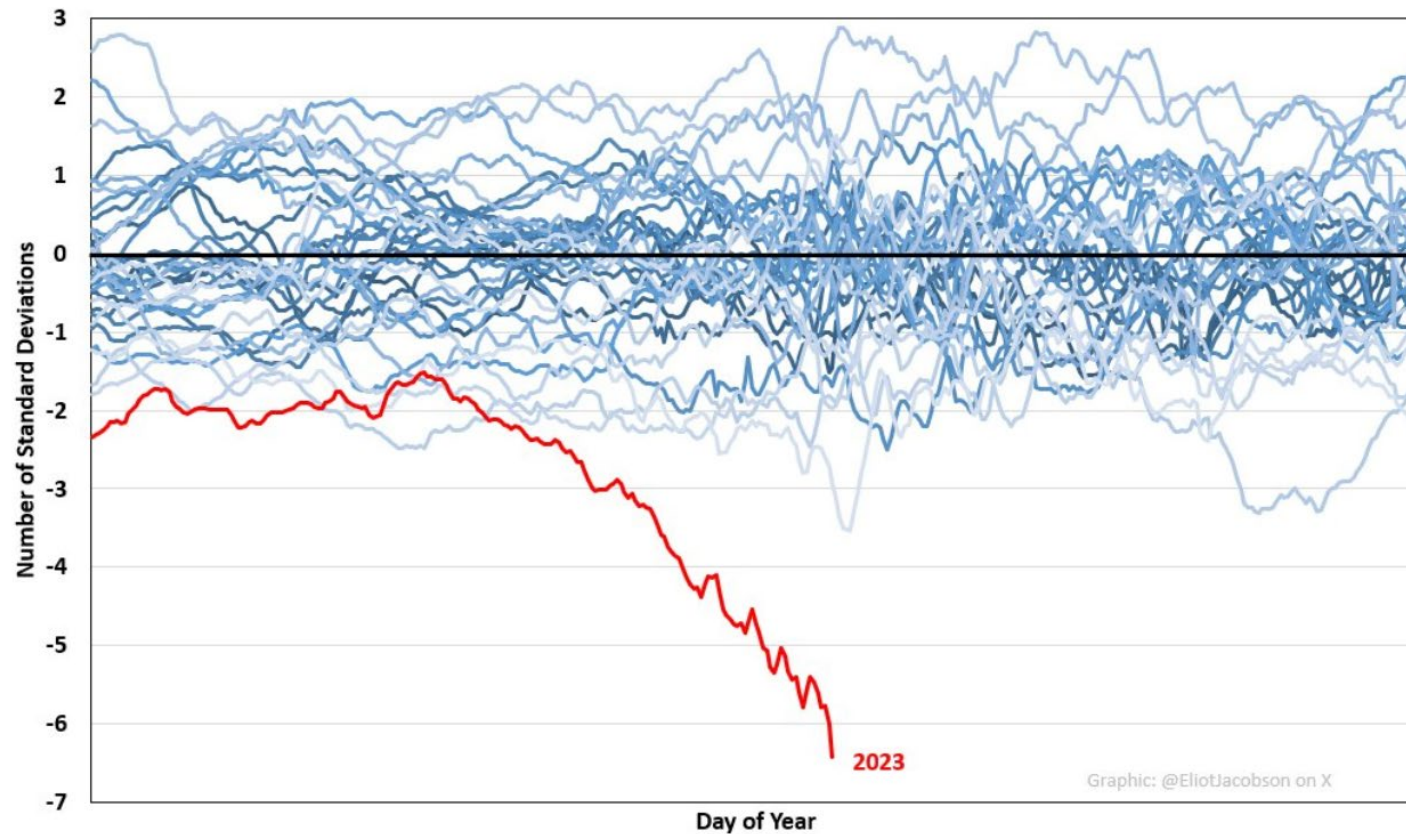
BBC

Klimafolgen in diesem Sommer II

Daily Standard Deviation for Antarctic Sea Ice Extent: 1989 - 2023

Based on 1991-2020 Daily Mean

(Data: <https://ads.nipr.ac.jp/vishop/#/extent>)

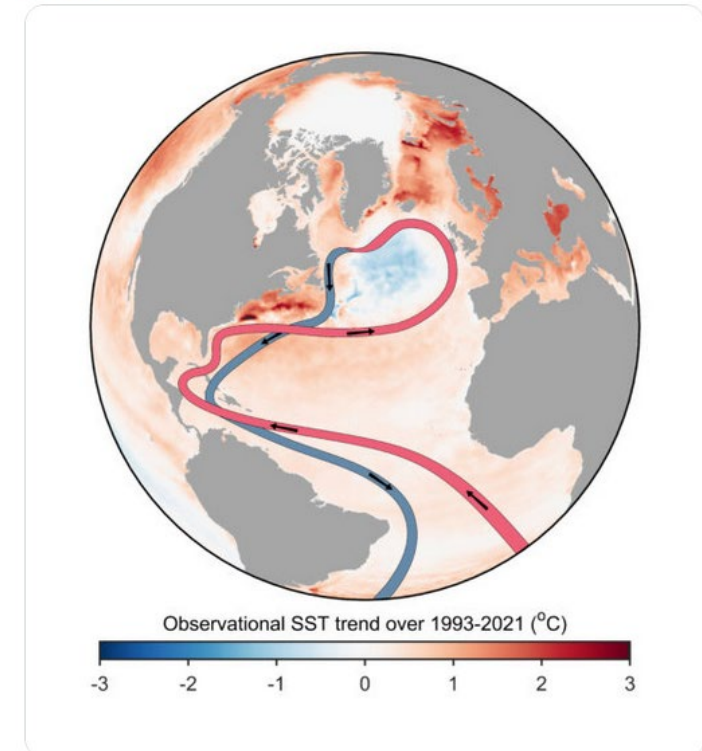


Prof. Stefan Rahmstorf   
@rahmstorf

New Danish study just out in Nature Communications, titled "Warning of a forthcoming collapse of the Atlantic meridional overturning circulation".

Is it serious? Here's my take on it: buff.ly/3O95c2M

[Post übersetzen](#)



5:34 nachm. · 25. Juli 2023 · 943.042 Mal angezeigt

105

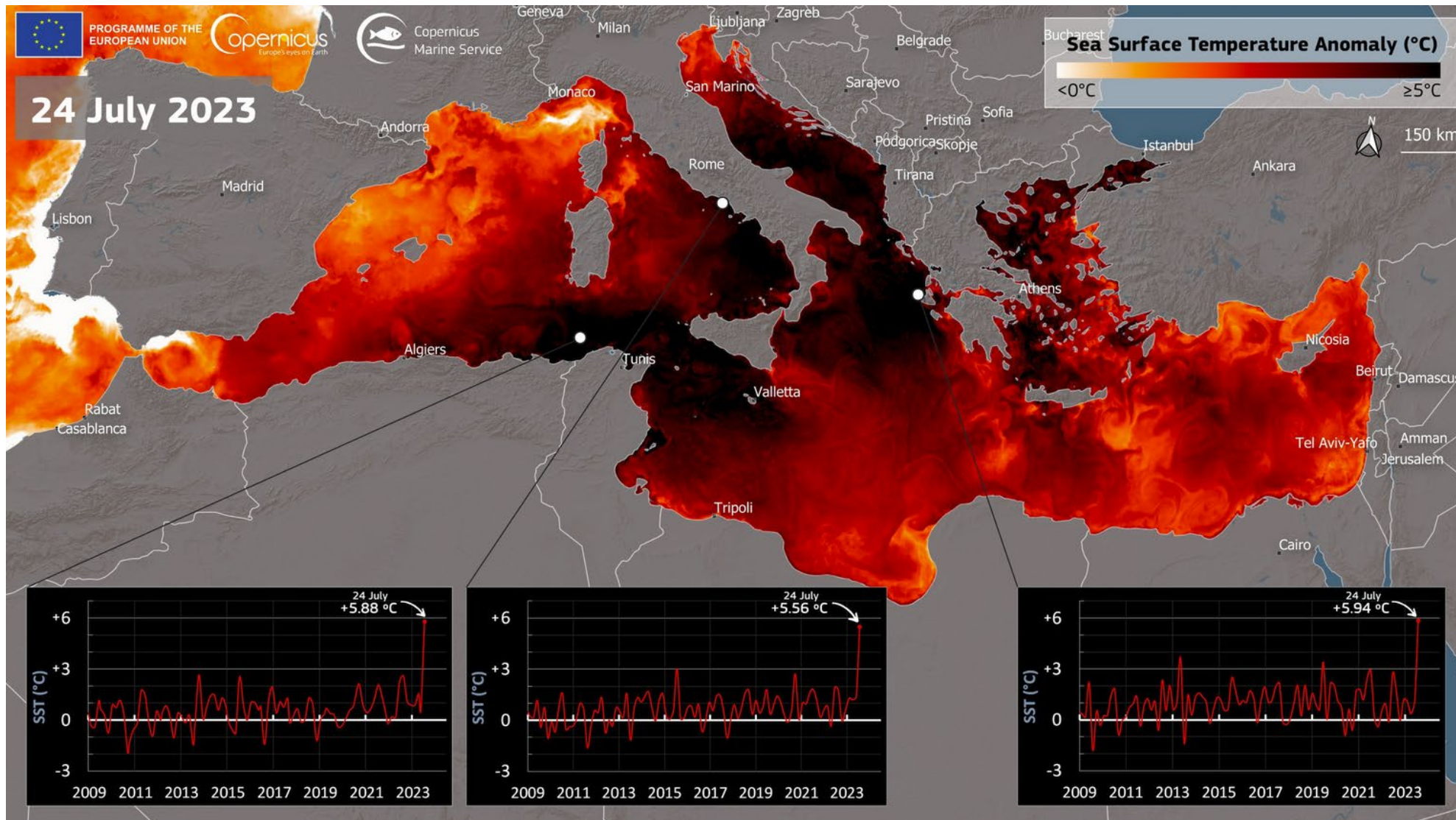
1.675

3.557

740



Wassertemperatur Anomalie Mittelmeer July 2023



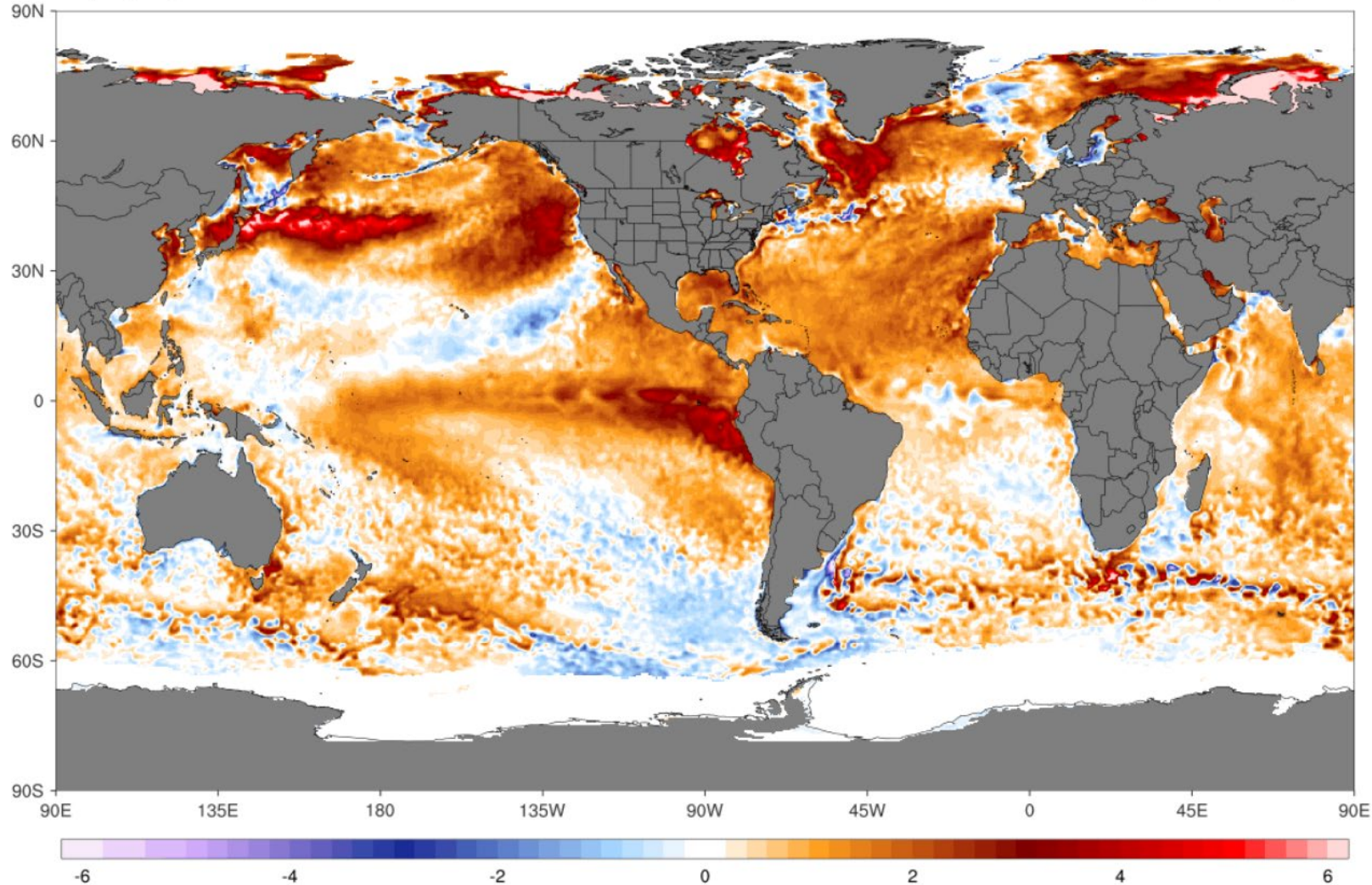
El Ninio Beginn 2023

OISST V2.1 SST Anomaly (°C) [1971-2000 base] [preliminary]

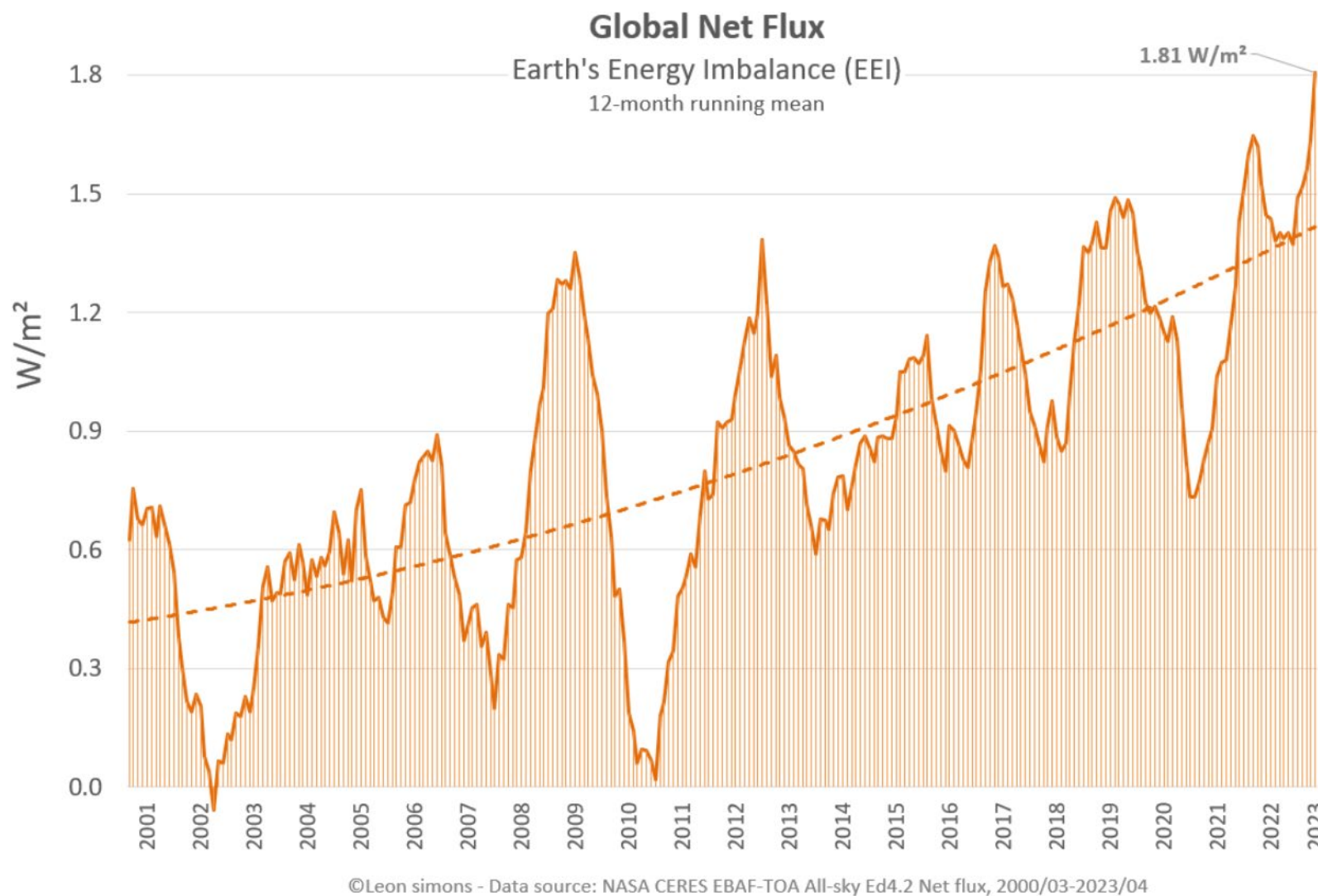
Sat, Aug 12, 2023

ClimateReanalyzer.org

Climate Change Institute | University of Maine



Entwicklung des EEI oder: Wie stark ist der Klimawandel?

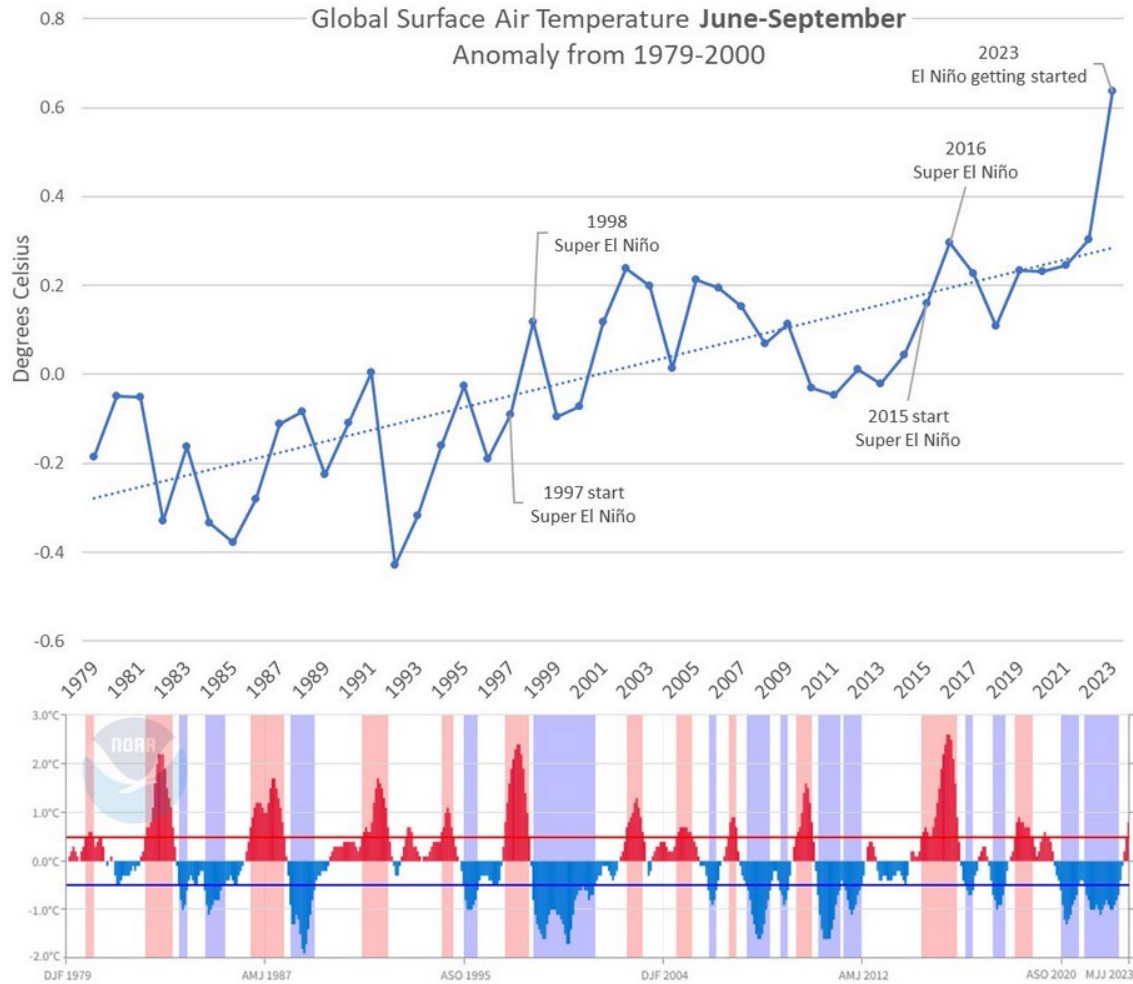


Klimawandel in Hiroshima Bomben

- $EEI \approx 1,4 \frac{W}{m^2}$
- 1 Hiroshima Bombe $\approx 13 \text{ kt TNT}$
- $1 \text{ kt TNT} = 4,184 * 10^{12} \text{ J (oder Ws)}$
- $13 \text{ kt TNT} = 54,392 * 10^{12} \text{ Ws}$
- $\text{Erdoberfläche} = 510 * 10^6 \text{ km}^2$
 $= 510 * 10^{12} \text{ m}^2$
- $EEI * \text{Erdoberfläche} = 714 * 10^{12} \text{ W}$
- $714 * 10^{12} \text{ W} / 54,392 * 10^{12} \text{ Ws} \approx \frac{13}{s}$

Die Kraft des Klimawandels
entspricht aktuell der Energie
von etwa
13 Hiroshima Bomben
pro Sekunde!

El Nino früher



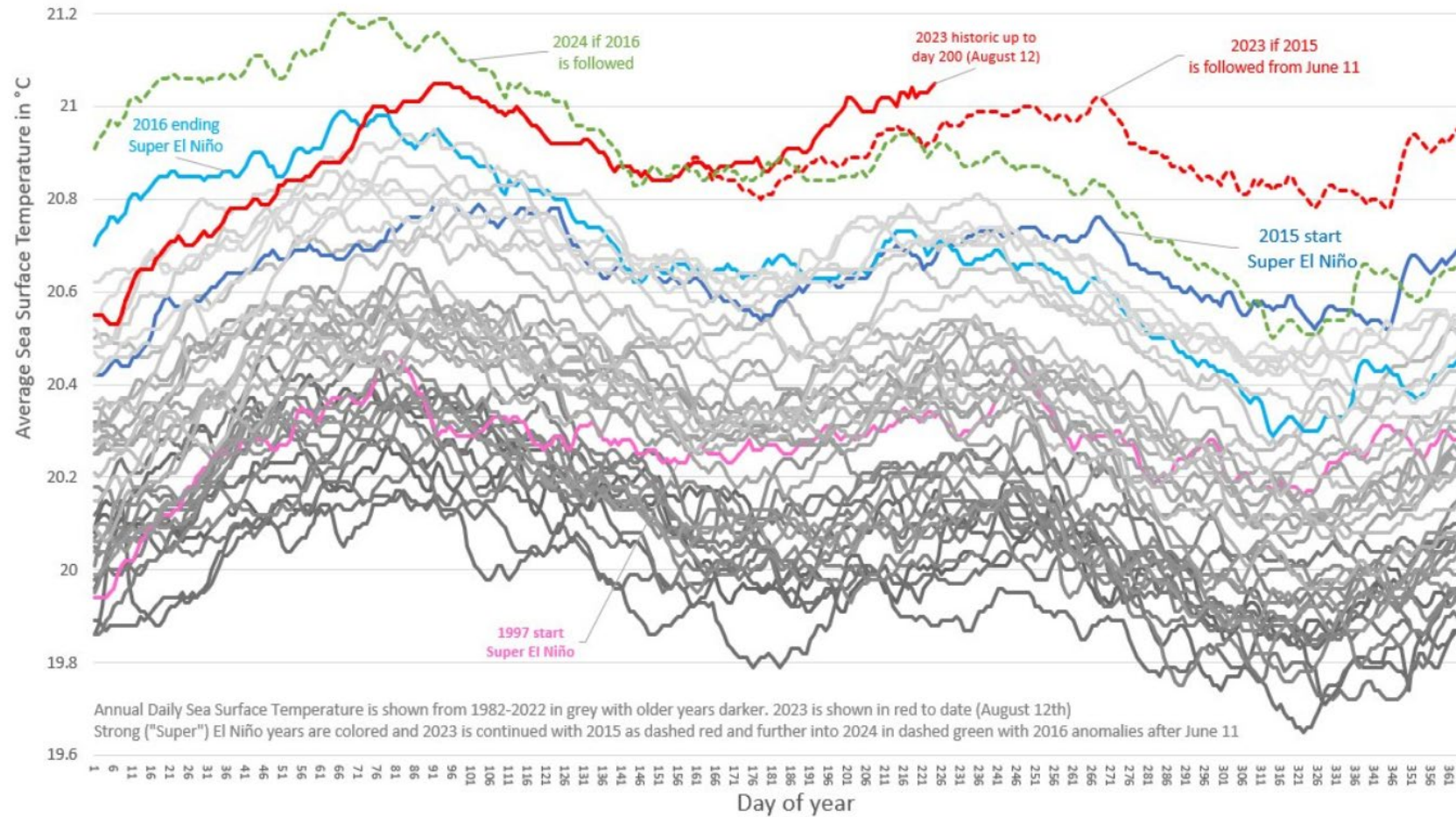
©Leon Simons- Data source: NCEP CFSV2/CFSR, up to September 30, 2023; NOAA, Trough Climate Change Institute University of Main; NCEI, NOAA

Oceanic Niño Index (ONI)

3-Month Running Mean of Niño 3.4 SST Anomalies

Was ist 2024 zu erwarten?

What could a Super El Niño mean for global (60°S-60°N) Sea Surface Temperatures?



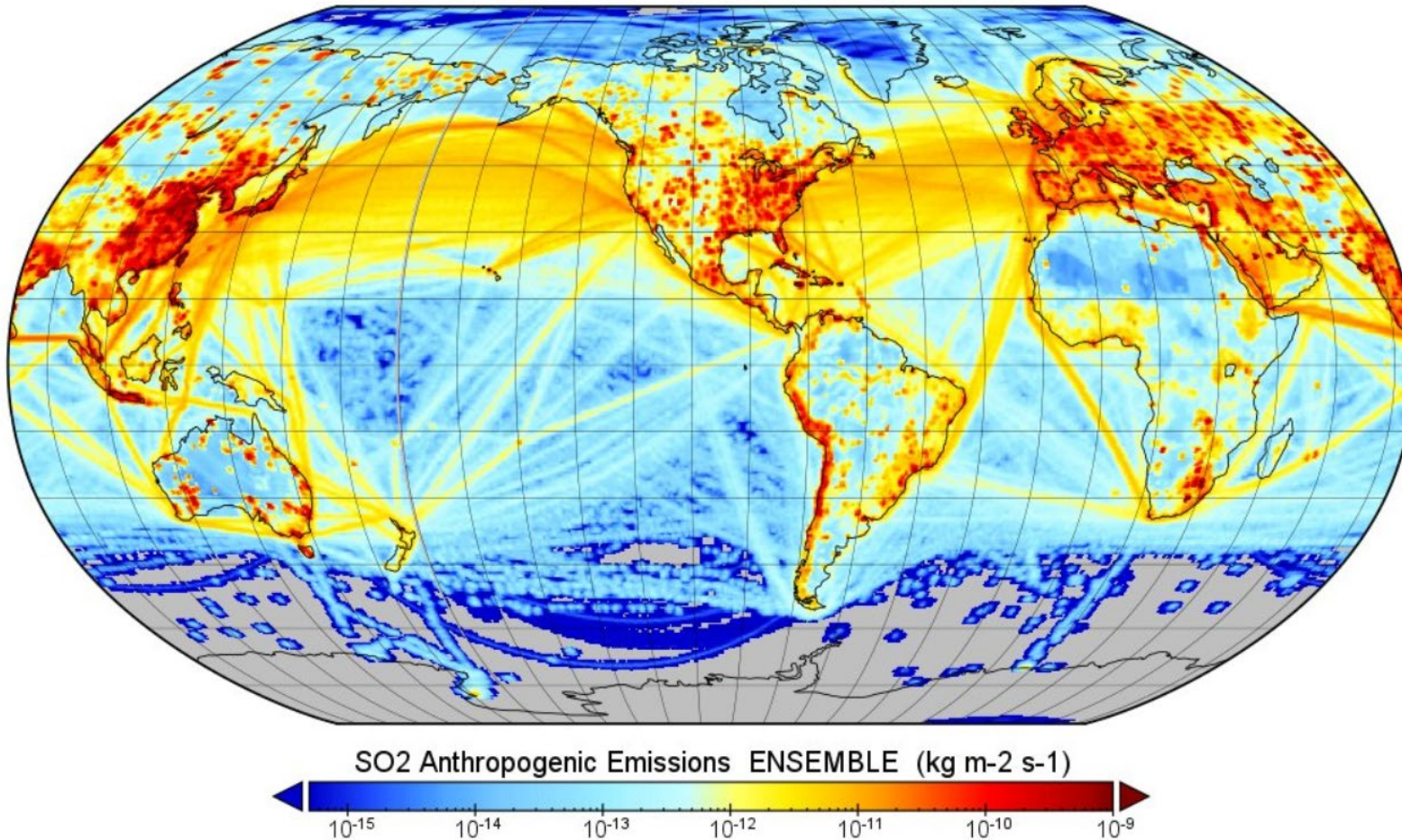
Annual Daily Sea Surface Temperature is shown from 1982-2022 in grey with older years darker. 2023 is shown in red to date (August 12th)
Strong ("Super") El Niño years are colored and 2023 is continued with 2015 as dashed red and further into 2024 in dashed green with 2016 anomalies after June 11

©Leon Simons, adjusted from Prof. Eliot Jacobson - Data source: NOAA Optimum Interpolation SST (OISST) dataset version 2.1
Through https://climaterenalyzer.org/clim/sst_daily/, Climate Change Institute, University of Main

Verstärkung der Entwicklung durch Reduktion der SO₂ Emissionen aus der Schifffahrt?

Global Anthropogenic SO₂ Emissions 2005-2010 Average

NASA MERRA2 ENSEMBLE



NASA GMAO, MERRA-2, GES DISC

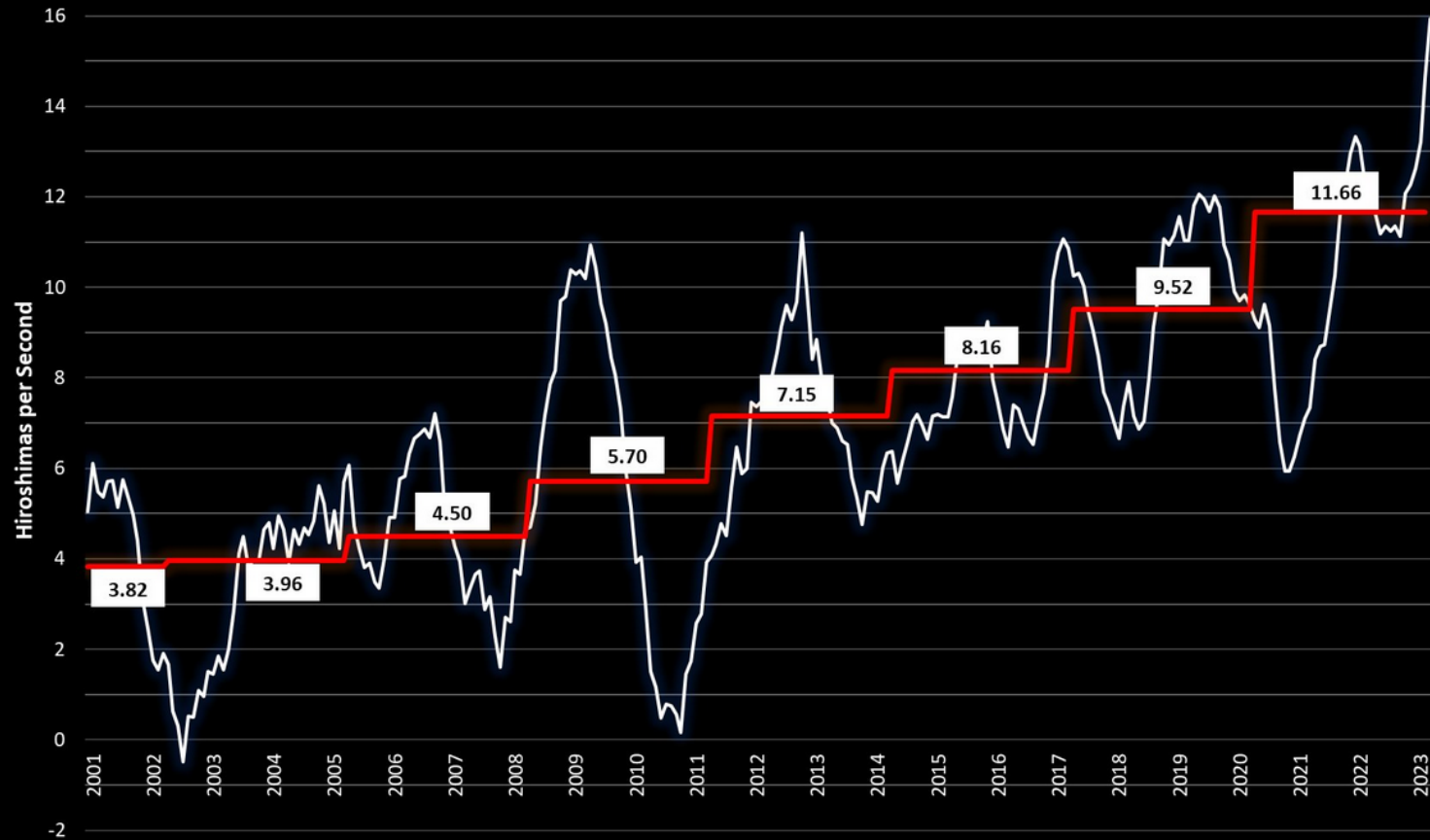
Data Min = 0, Max = 5×10^{-9} , Mean = 8×10^{-12}

By: Leon Simons



EEl as Hiroshima Bombs per Second

Heating of Earth Expressed in Hiroshimas per Second
12 month running mean vs. 36 month step average
Feb. 2001 - May 2023

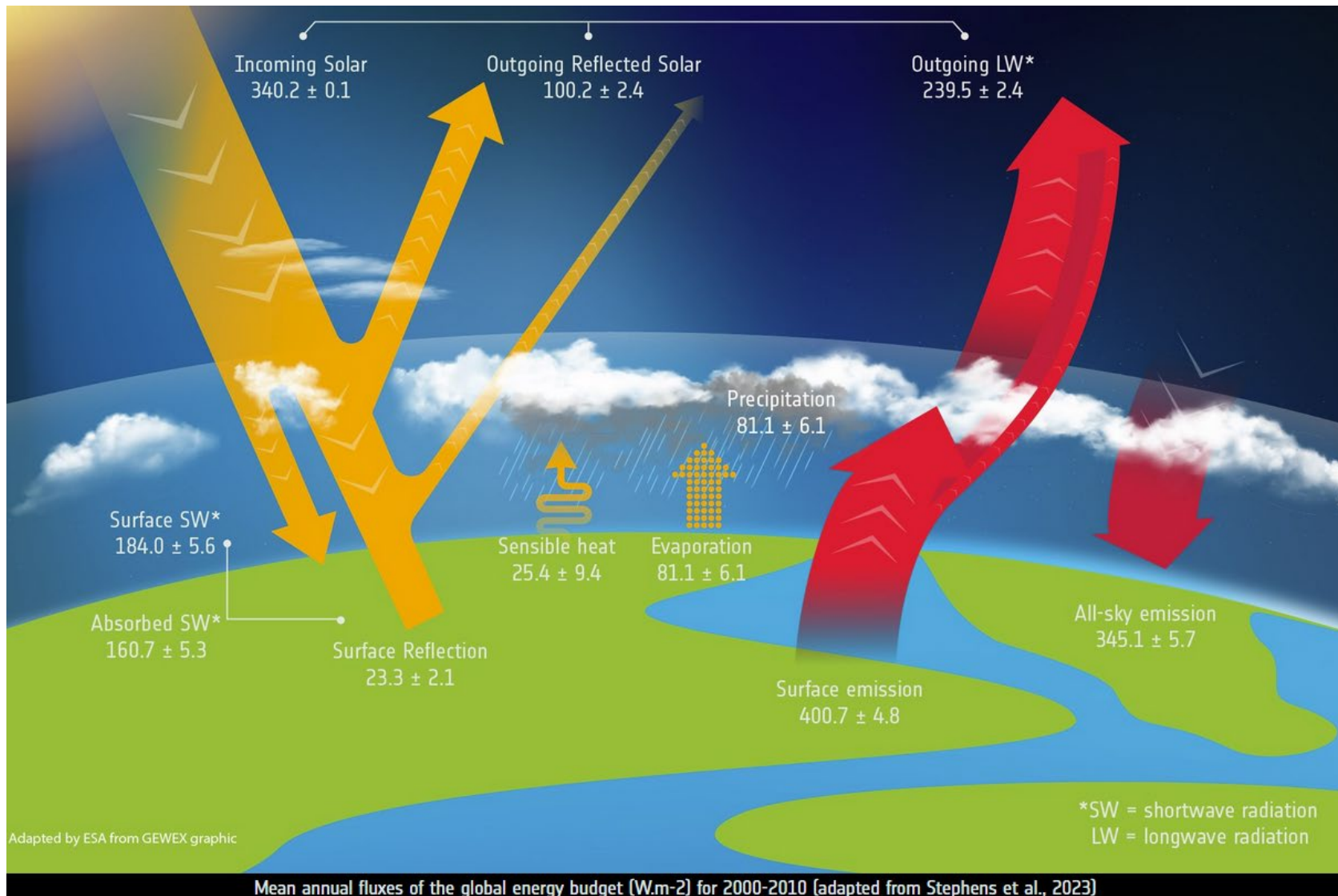


Prof. Eliot Jacobson @EliotJacobson · 29. Juli

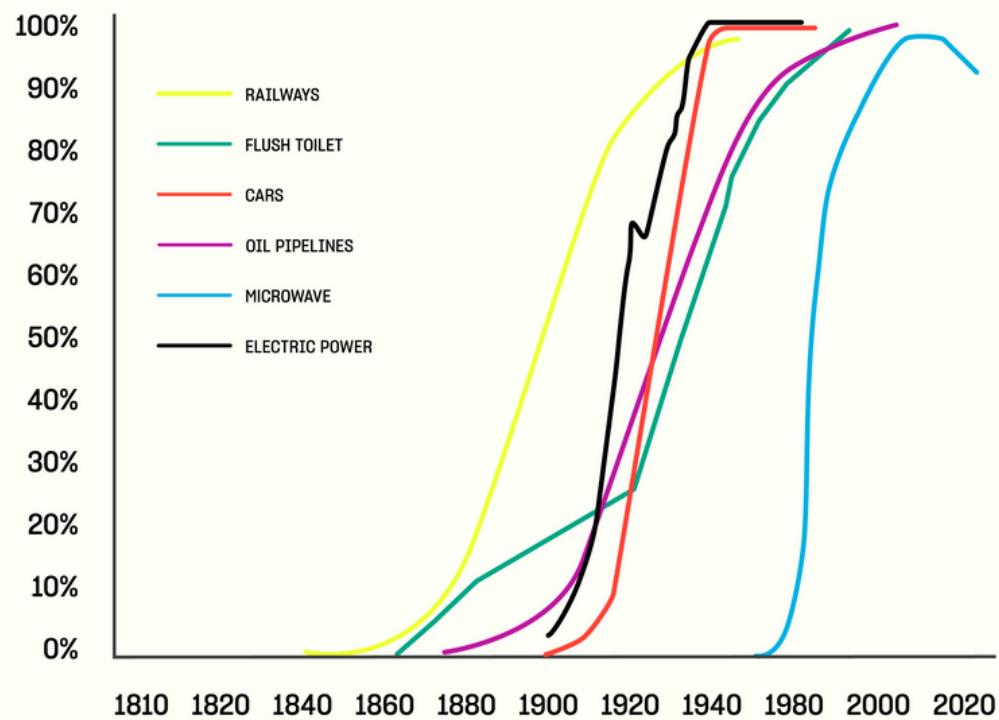
In rushing to put my live show together, I forgot to extend BOTH the x-axis and y-axis to include the latest EEI data. The 12-month plot did not include May's data.

The 12-month running mean for the EEI is now a record 1.97W/m^2 , equivalent to roughly 15.9 Hiroshimas per Second.

Treibhauseffekt

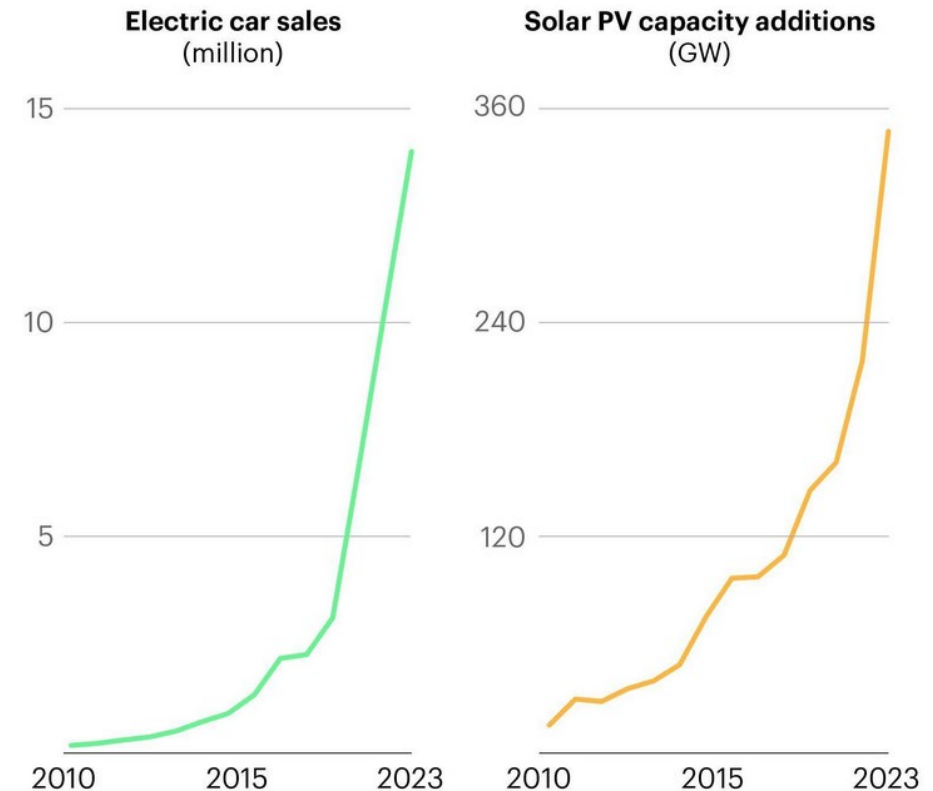


CHANGE HAPPENS SLOWLY AT FIRST.
AND THEN FASTER THAN WE EVER
THOUGHT POSSIBLE.



Source: IRENA, ETC

The path to 1.5 °C has narrowed, but **clean energy growth** is keeping it open



Note: 2023 values are estimated

International
Energy Agency