



PRESIDENTS' ***MEETING***

10 SEP - 12 SEP 2021 | **MUNICH** GERMANY



Source: NASA

1. Must we change?

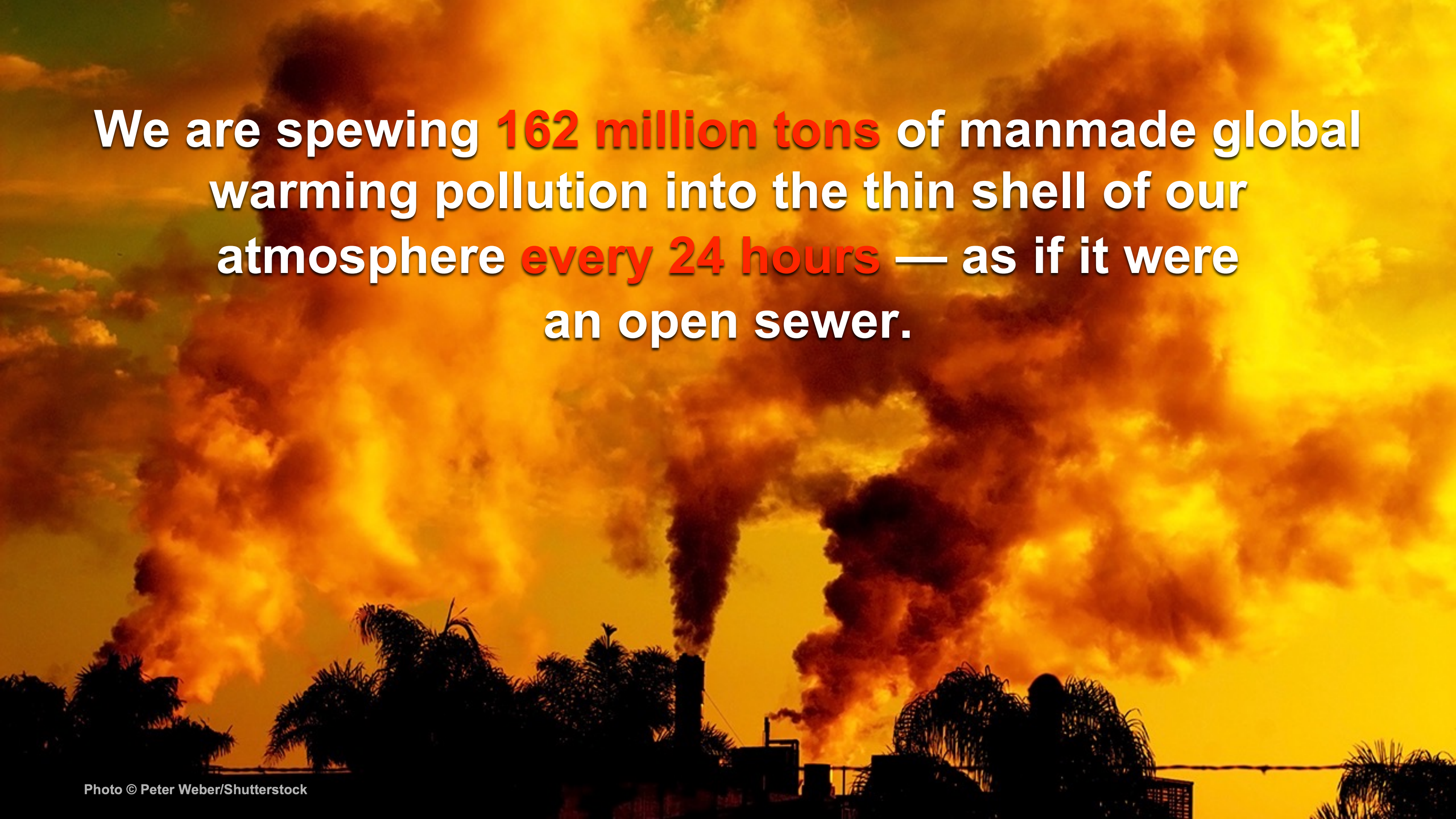
2. Can we change?

3. Will we change?

1. Must we change?



Source: NASA



We are spewing **162 million tons** of manmade global warming pollution into the thin shell of our atmosphere **every 24 hours** — as if it were an open sewer.

**The energy trapped by man-made
global warming pollution is now
“...equivalent to exploding**

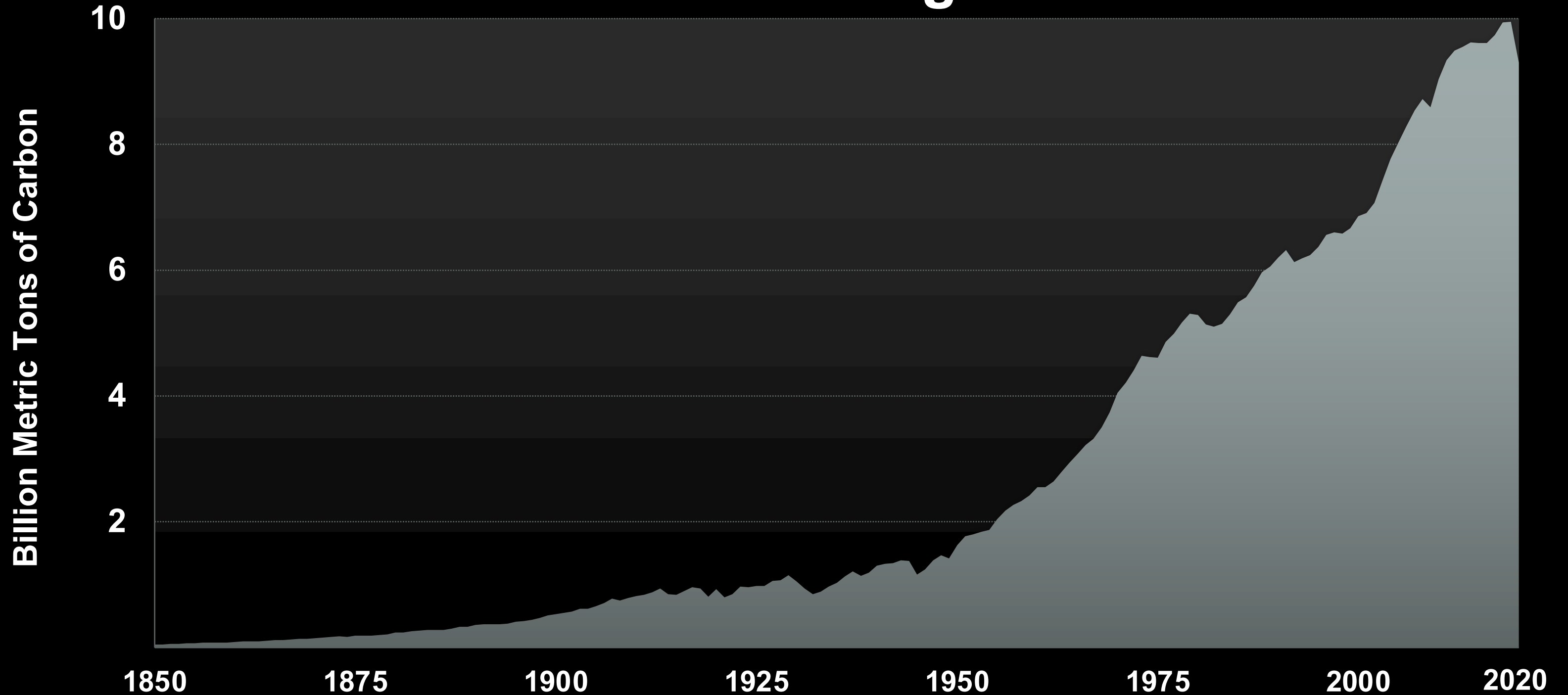
600,000

**First-generation atomic bombs
per day 365 days per year.”**

James Hansen

Former Director, NASA Goddard Institute for Space Studies

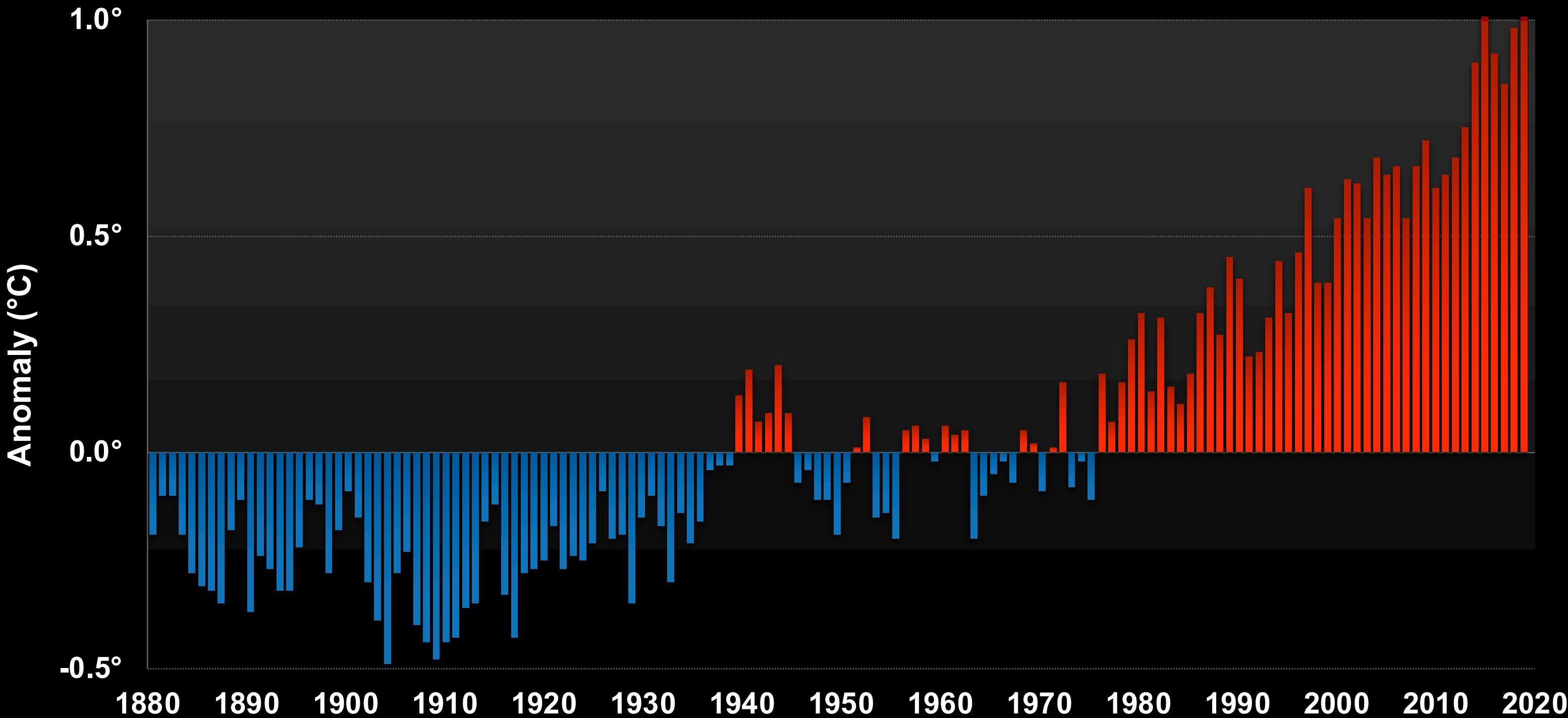
The Largest Source of Global Warming Pollution Is the Burning of Fossil Fuels



Data: U.S. Department of Energy/CDIAC/Global Carbon Project

Global Surface Temperature – Departure from Average

1880 – 2020



The 10 Hottest Years Since the Year 2002

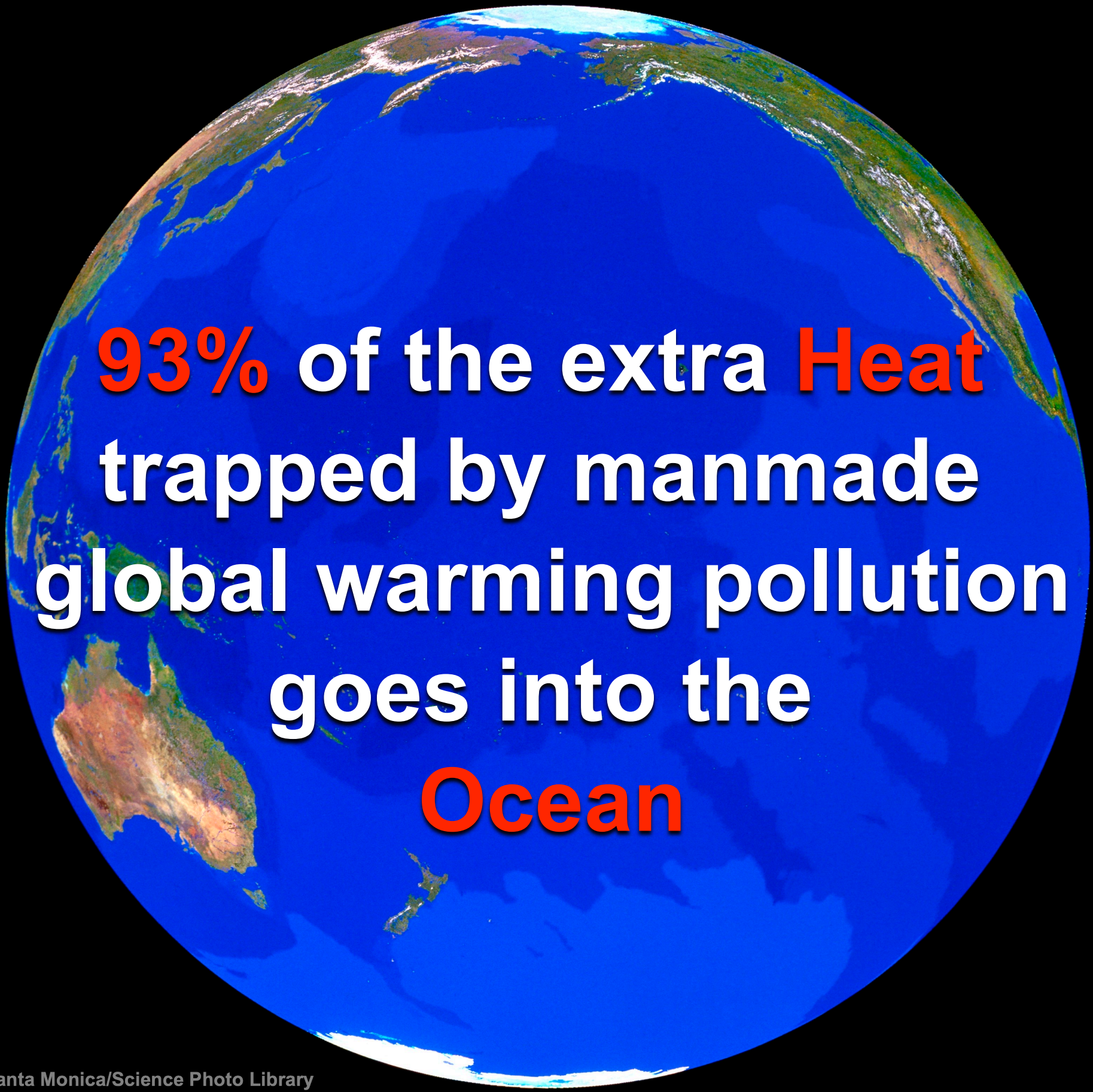
The 10 Hottest Years Since the Year 2002



Paris, France

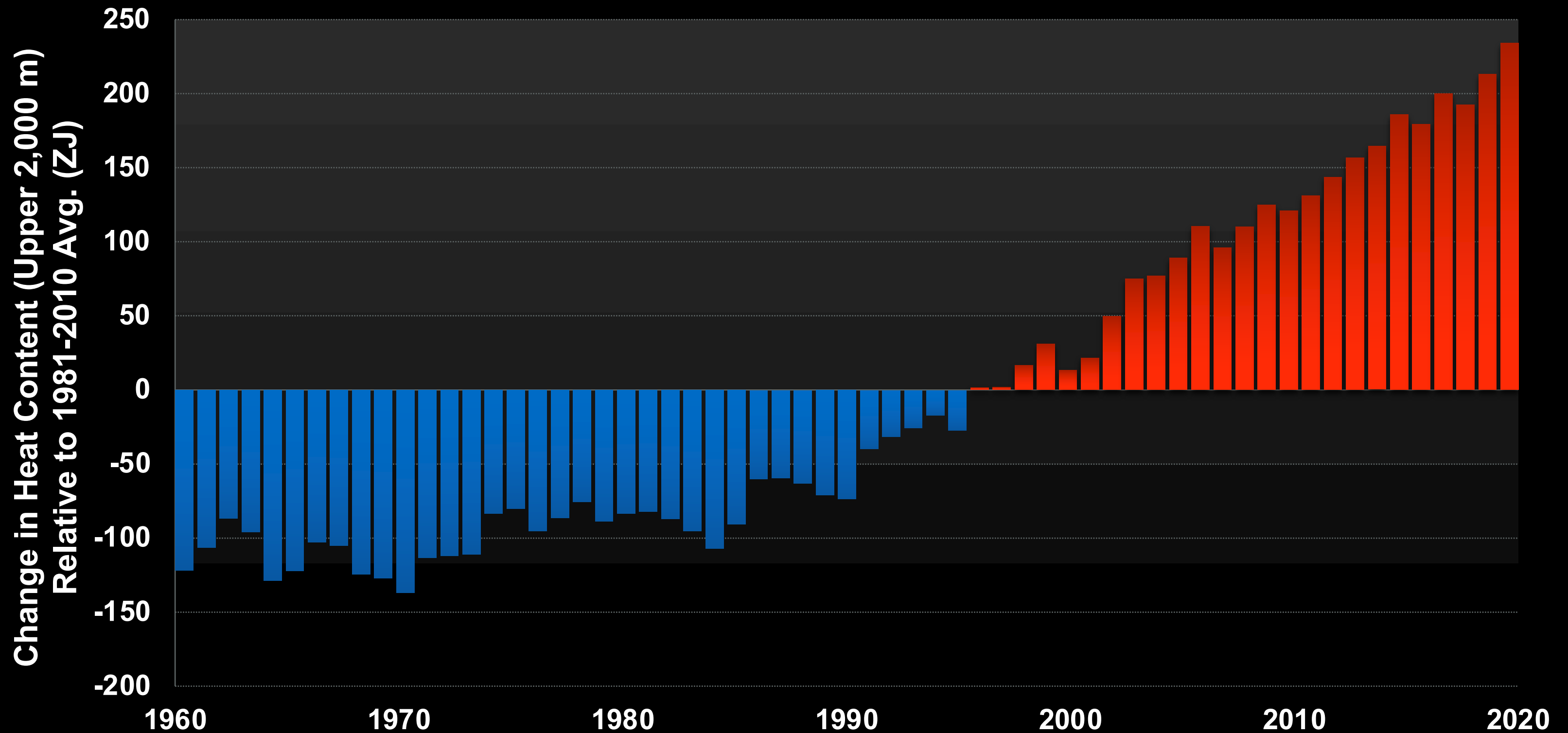
August 11, 2020

2020 was Europe's hottest year ever, breaking the record set in 2019.



93% of the extra **Heat**
trapped by manmade
global warming pollution
goes into the
Ocean

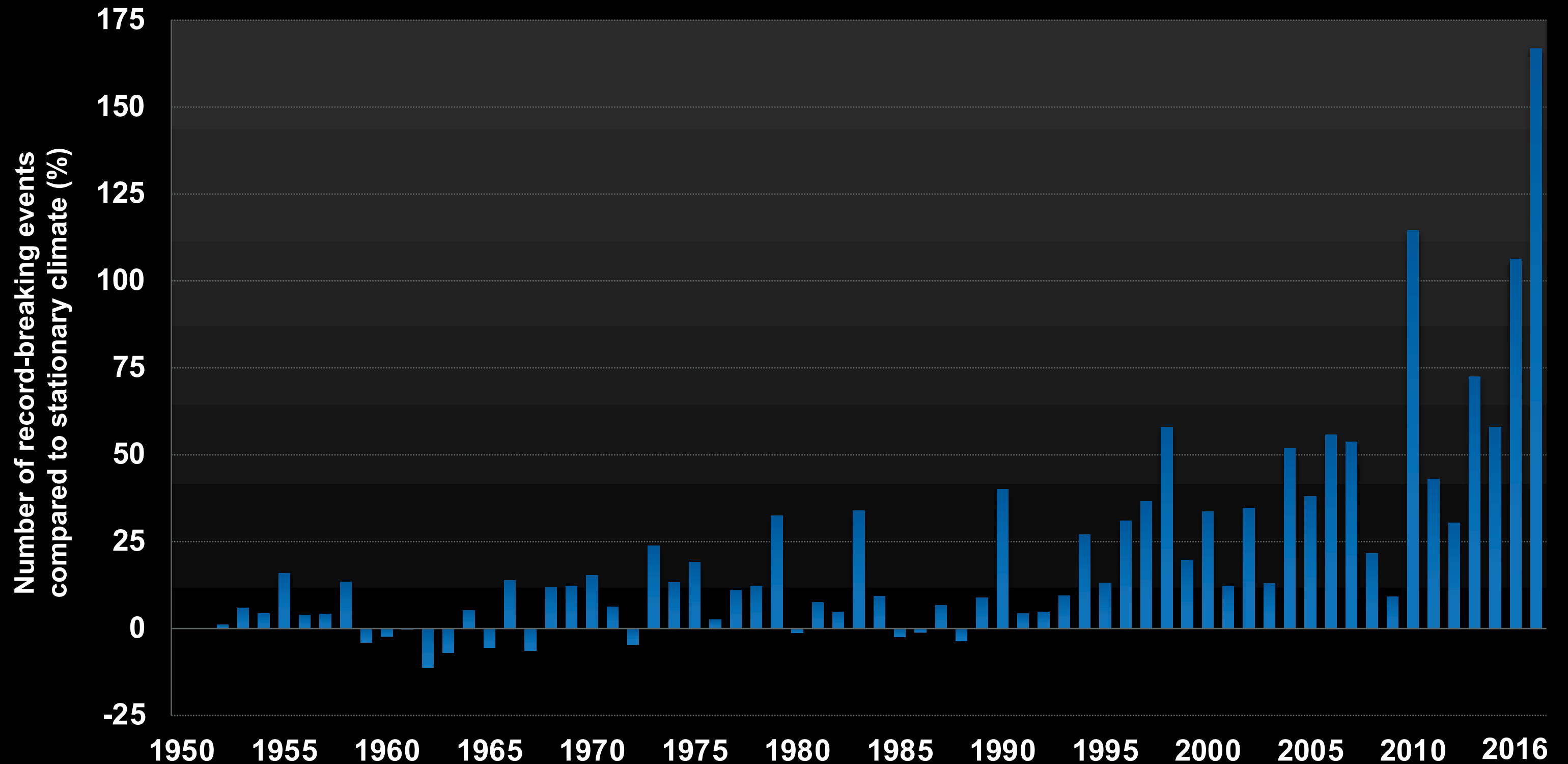
Ocean Temperatures Set a New Record in 2020



Data: Cheng, et al, *Advances in Atmospheric Sciences*, 2020 via Guardian

**As Temperatures Increase, the Oceans
Evaporate More Moisture into the Sky**

Global Record-Breaking Precipitation Anomalies



**Globally, floods and
extreme rainfall events
now occur
four times more often
than in 1980.**

Bihar, India

July 26, 2020

2020's monsoon rainfall in Bihar was 50% higher than normal. India's super-monsoon became 2020's **deadliest climate disaster, with more than 1,900 deaths.**

The same extra heat that evaporates more water from the ocean, causing bigger downpours and floods...

...pulls moisture even more quickly from the soil, causing longer and deeper droughts.

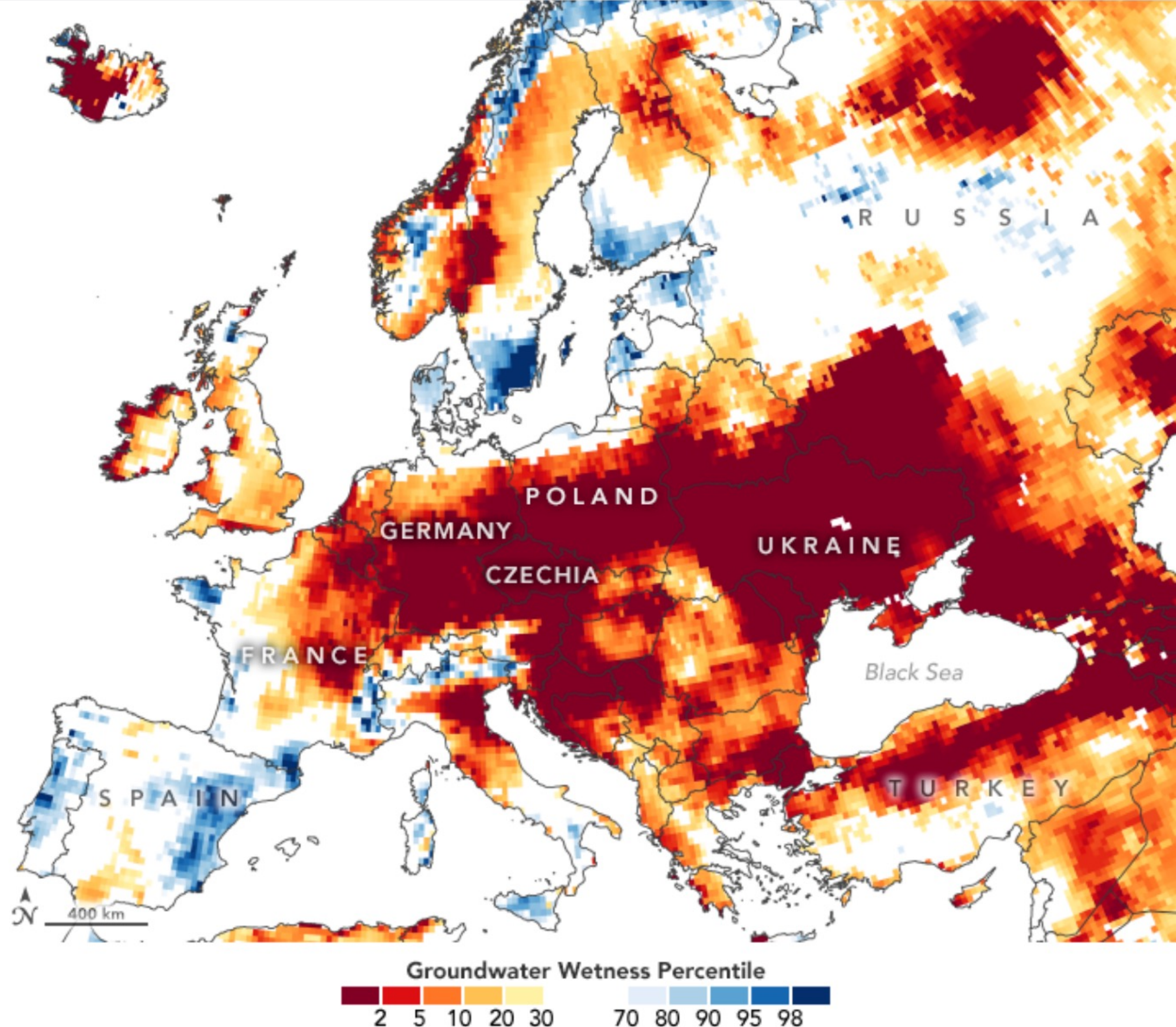
Pocone, Brazil

September 26, 2020

**Brazil's drought
caused \$3 billion in
damages in 2020.**

June 22, 2020

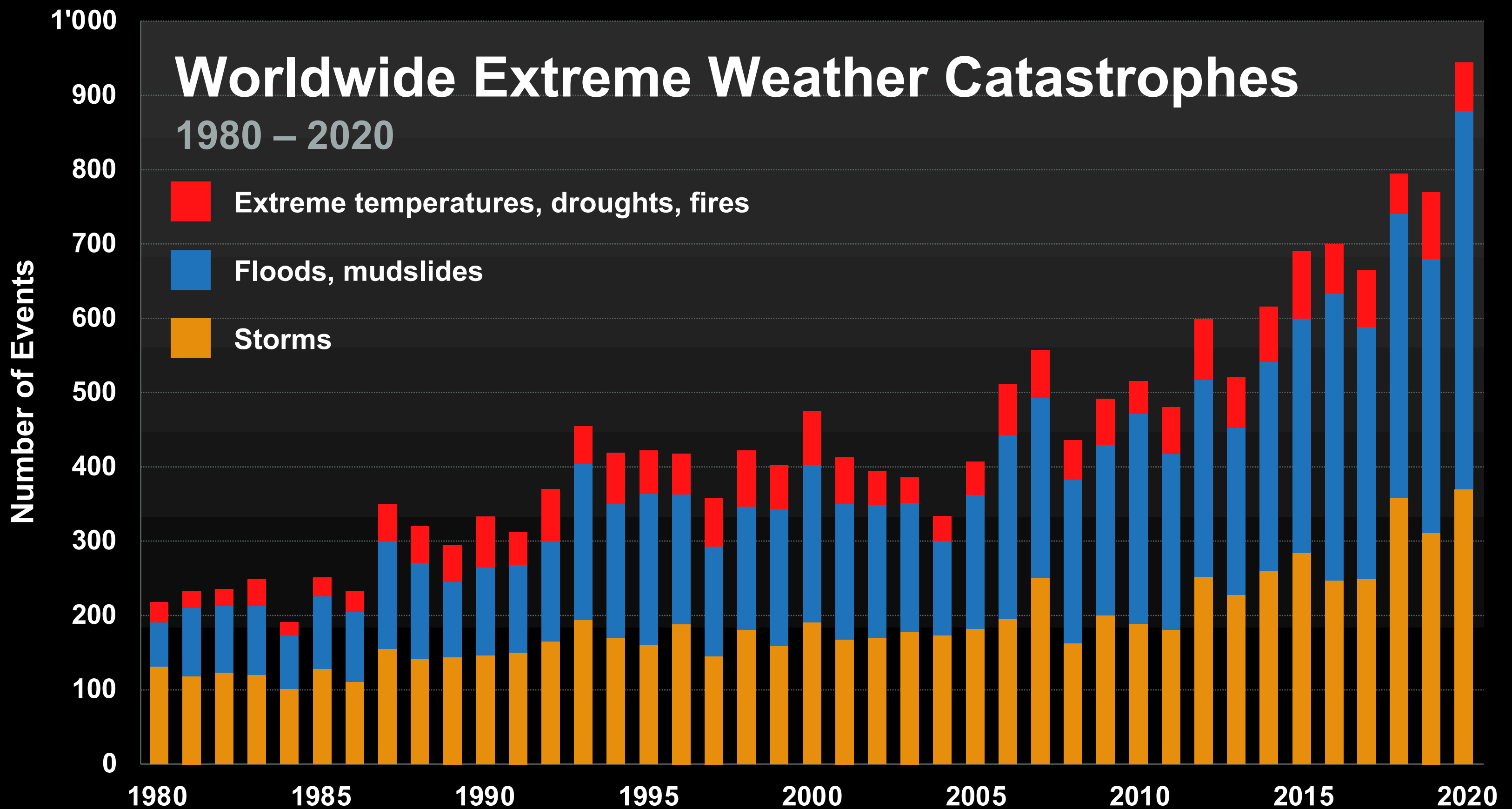
Groundwater
levels in Europe
reached alarmingly
low levels in 2020.



Oroville, California

September 9, 2020

Five of the six largest
fires in California's
history occurred in 2020.





Unnamed Glacier, Southwest Greenland

Summer 2013

Declining Ice Mass in Greenland

Change in Ice Mass (Gigatonnes)

500
0
-500
-1'000
-1'500
-2'000
-2'500
-3'000
-3'500
-4'000
-4'500
-5'000

2002

2004

2006

2008

2010

2012

2014

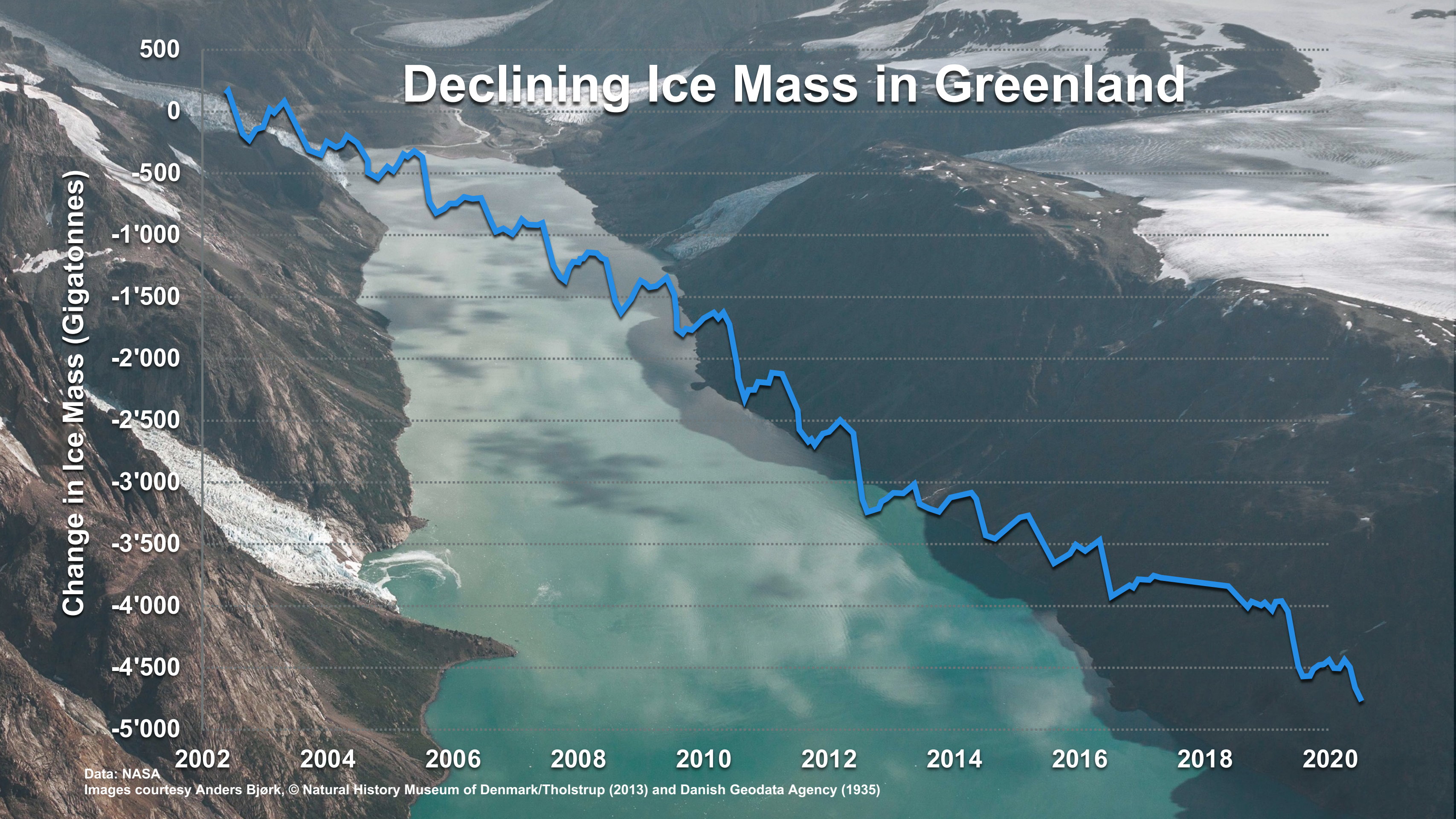
2016

2018

2020

Data: NASA

Images courtesy Anders Bjørk, © Natural History Museum of Denmark/Tholstrup (2013) and Danish Geodata Agency (1935)



Ice Sheet, Kangerlussuaq, Greenland

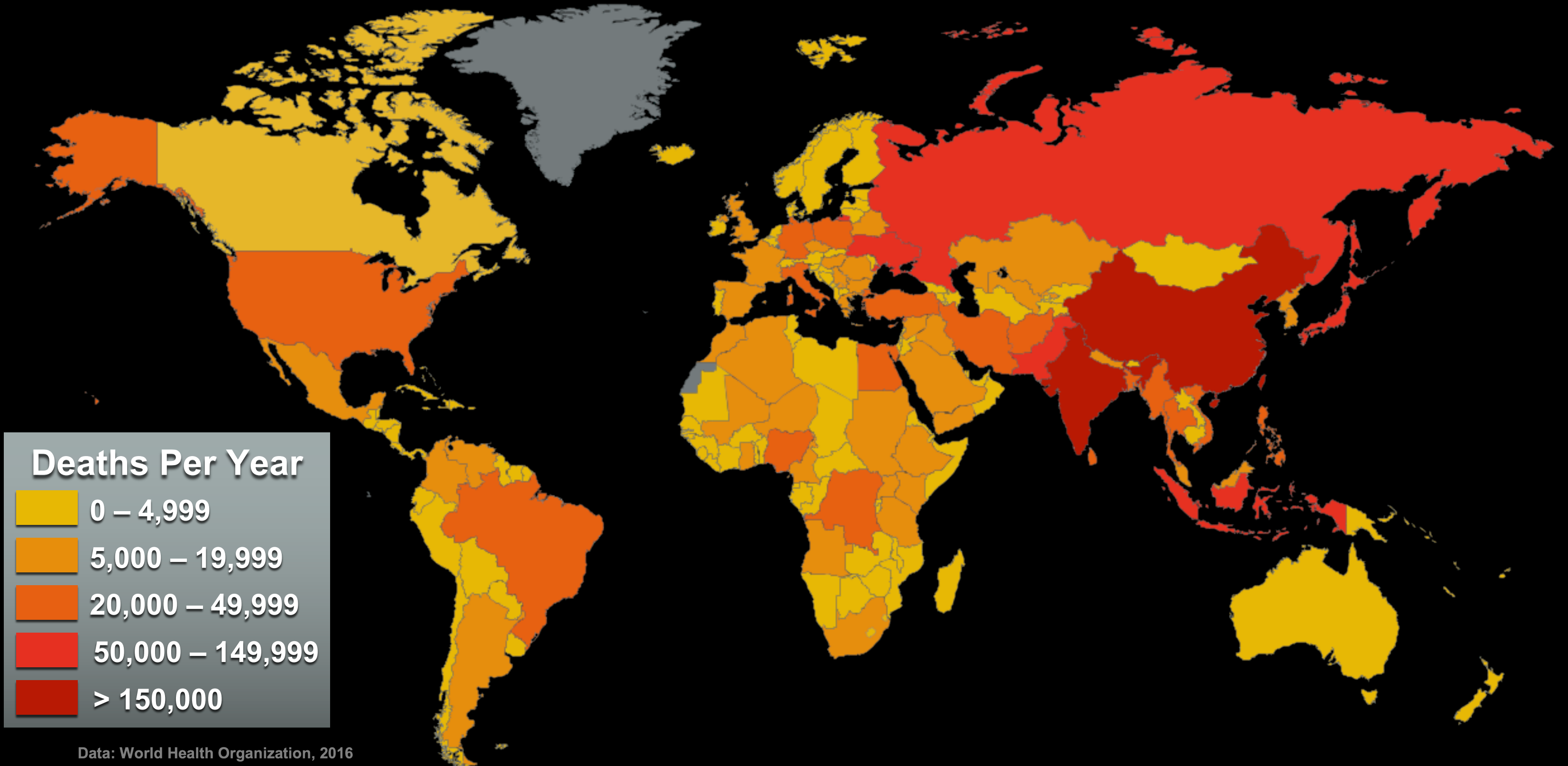
Greenland's ice is **melting four times faster** than originally thought, and more is melting from the permanent ice sheet than from glaciers.

Data: M. Bevis, et al., "Accelerating changes in ice mass within Greenland, and the ice sheet's sensitivity to atmospheric forcing," *PNAS*, January 2019.
Photo © 2017 Martin Zwick/REDA&CO/ UIG via Getty Images

**“Climate change is the
biggest global health threat
of the 21st century.”**

**The 2018 Report of the Lancet Countdown
on Health and Climate Change**

Deaths Attributable to Ambient Air Pollution



**We now risk
losing up to
50% of all
land-based
species
in this century**

Source: Nicholas Stern, *The Economics of Climate Change*
Photo: © Dirk Ercken/Shutterstock



The Cost of Carbon

- \$ *Political Instability*
- \$ *Floods & Mudslides*
- \$ *Wildfires*
- \$ *Drought*
- \$ *Storm Damage*
- \$ *Ocean Acidification*
- \$ *Infrastructure Loss*
- \$ *Climate Refugees*



- \$ *Species Extinction*
- \$ *Melting Glaciers*
- \$ *Famine*
- \$ *Water Scarcity*
- \$ *Ecosystem Loss*
- \$ *Our Way of Life*
- \$ *Infectious Diseases*
- \$ *Sea Level Rise*

... And much, much more
“The #1 Threat to the
Global Economy”

So...!
Yes!
Must we change?

2. Can we change?

**We have
the solutions
at hand...**

Green Energy Progress

How Do Projections Compare With Reality?

2000 Projection

Worldwide
wind capacity
will reach 30
GW by 2010

Reality

By 2020 that goal
was exceeded by
a factor of

24 x

Solar Energy Progress

How Do Projections Compare With Reality?

2002 Projection

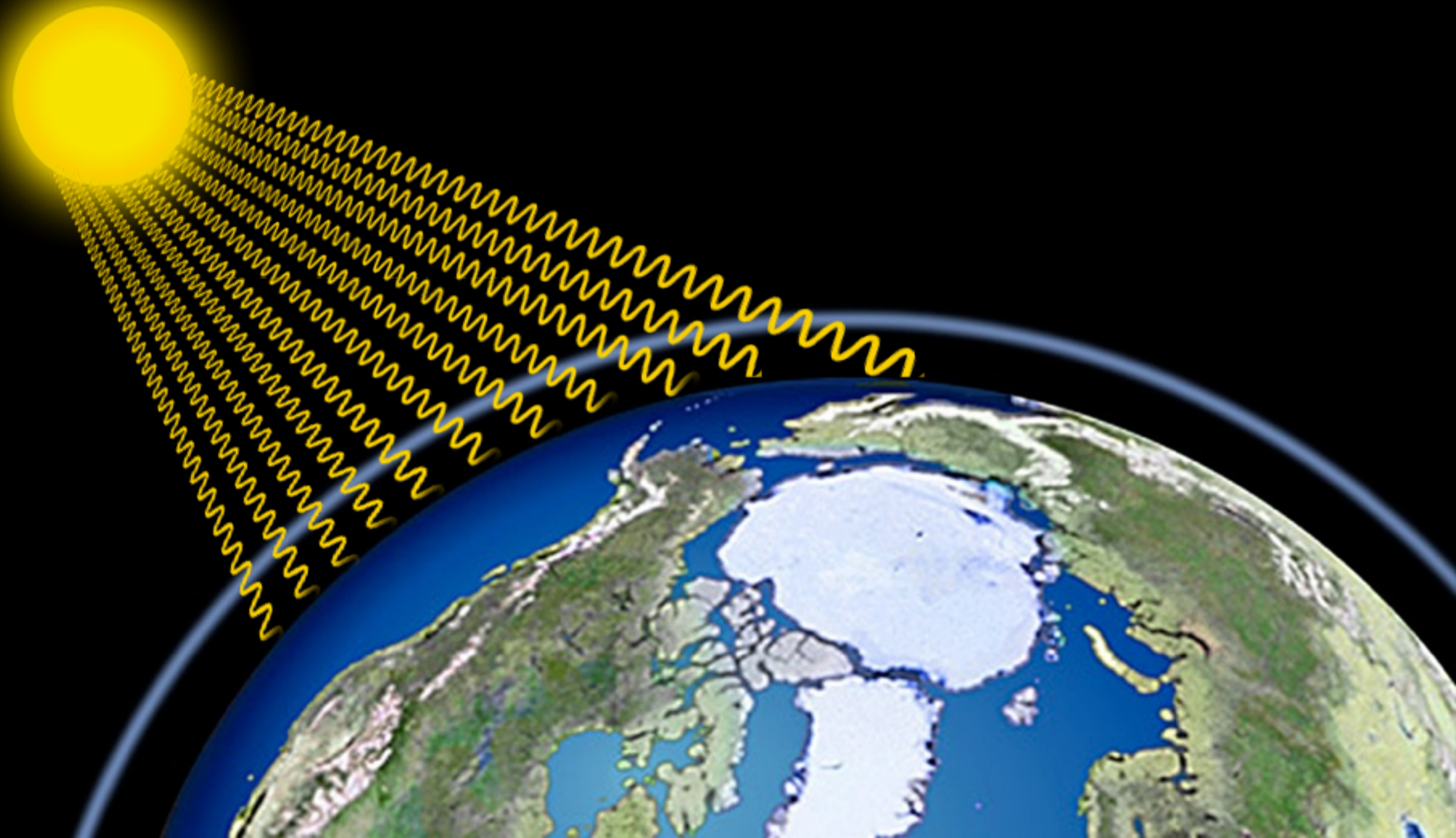
The solar energy market will grow one gigawatt per year by 2010

Reality

The reality is that in 2020 it was exceeded by

13.2x

Enough solar energy reaches Earth **every hour**
to fill all the world's energy needs **for a full year**



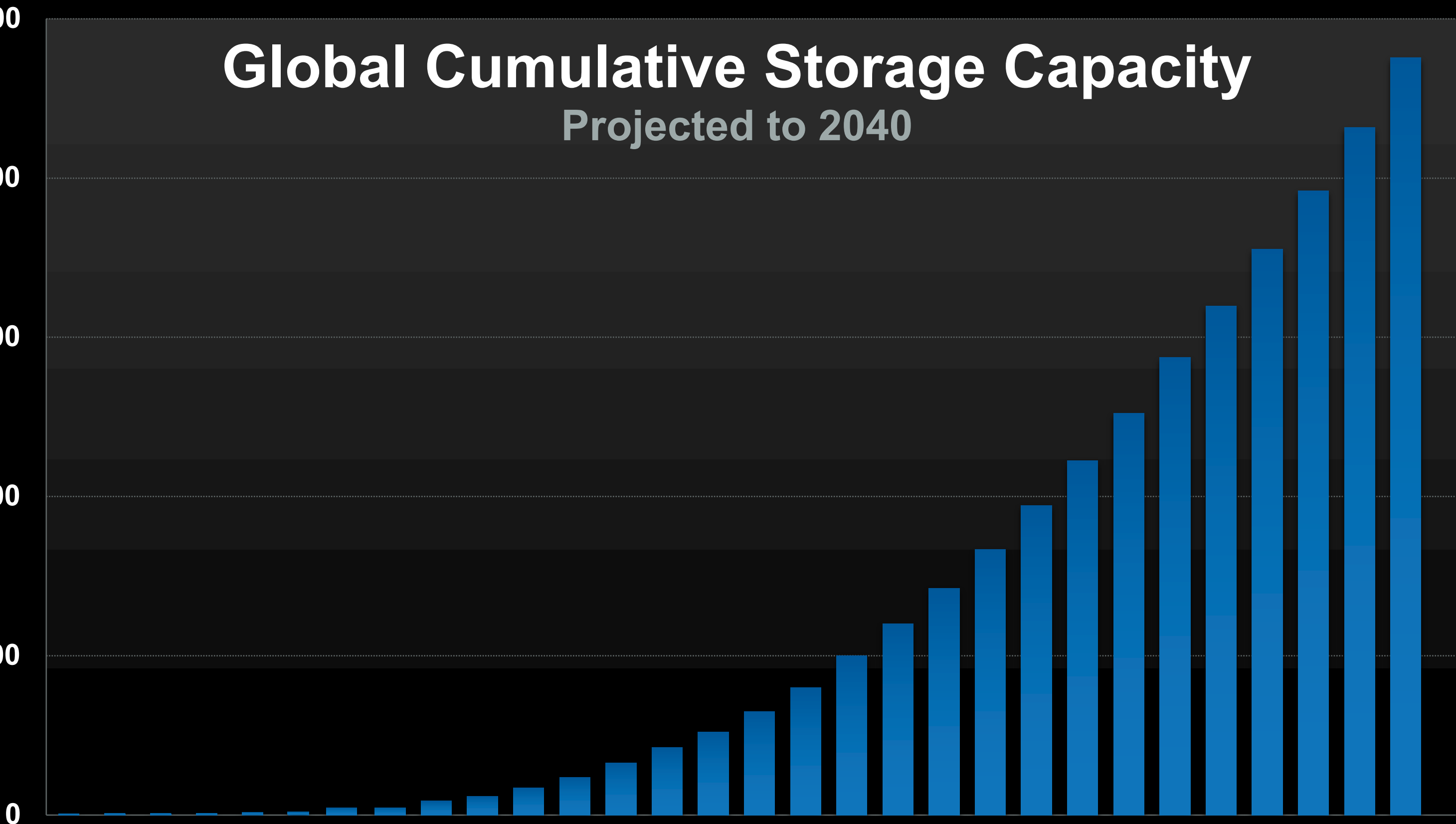
Global Cumulative Storage Capacity

Projected to 2040

Gigawatts

Data:
Bloomberg
New Energy
Finance

2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040



Auto Manufacturers Are Moving to Electric Vehicles

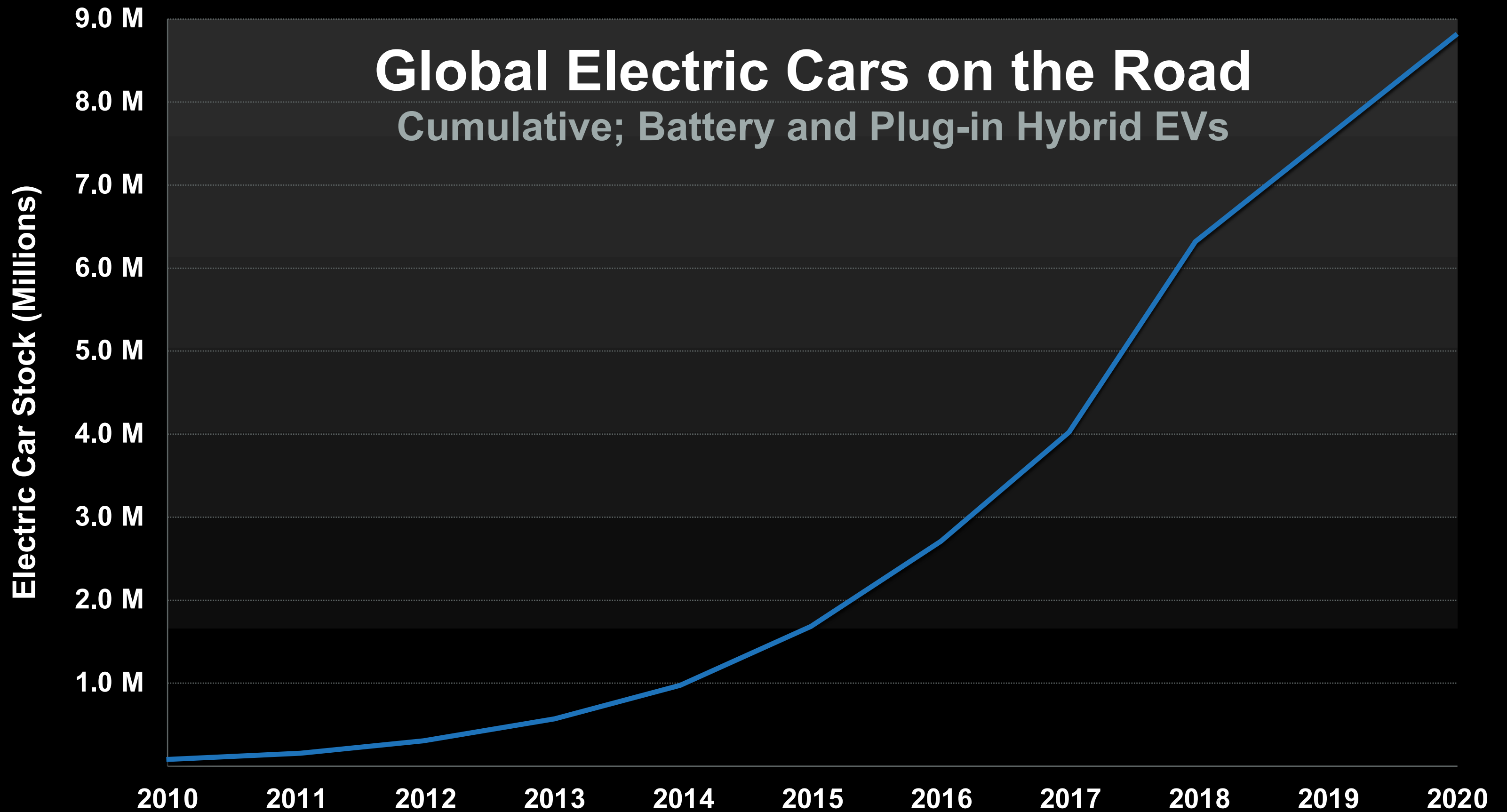
Companies with Electric Models in Production

Axiam	Chongqing Sokon	Geely	Mahindra	SAIC
Aston Martin	Citroën	General Motors	Mazda	Smart
Audi	Citydom	Goupil	Mercedes-Benz	Subaru
BAIC	CODA	Great Wall	Mitsubishi	Suzuki
BMW	Daimler	Honda	Mullen	Tata
Bolloré	Dongfeng	Hyundai	NIO	Tesla
Brilliance	Exagon	JAC	Nissan	Toyota
Buddy	FAW Group	Jiangling	Opel	Trumpchi
BYD	Fiat Chrysler	Kandi	Peugeot	Venturi
Chevrolet	Fisker	Kantanka	Qiantu	Volkswagen
Chongqing Chang'an	Ford GAC	Kia Kyburz	Rayttle Renault	Zotye



OUR
ELECTRIC
FUTURE IS NOW

**General Motors has
announced it will phase out
gasoline- and diesel-powered
passenger vehicles by 2035.**



So...!
Yes!
Can we change?

3. Will we change?

A nighttime photograph of the Eiffel Tower in Paris, France, illuminated with golden lights. The tower stands prominently on the left side of the frame. In the foreground, the Seine River flows, with a bridge and several boats visible. The city lights and the Paris skyline are visible in the background under a dark blue sky.

In the 2015 Paris Agreement,
every nation in the world agreed
to work together to achieve net zero
greenhouse gas emissions by mid-century.

The U.S. legally re-joined the Paris
Agreement 30 days after Joe Biden was
inaugurated as President.

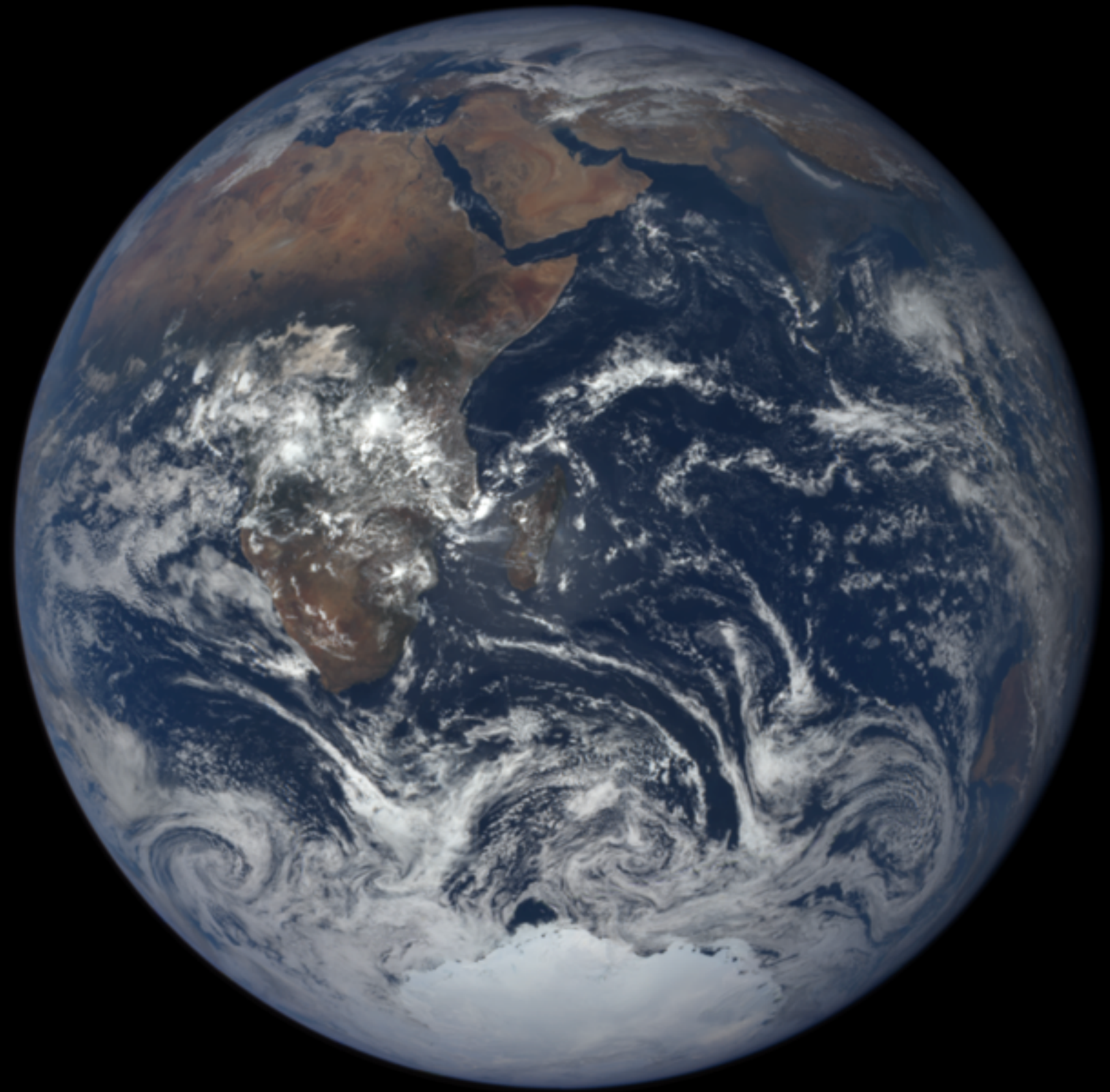


Over 290 global companies have made
a commitment to go 100% renewable

Madrid, Spain

December 11, 2020





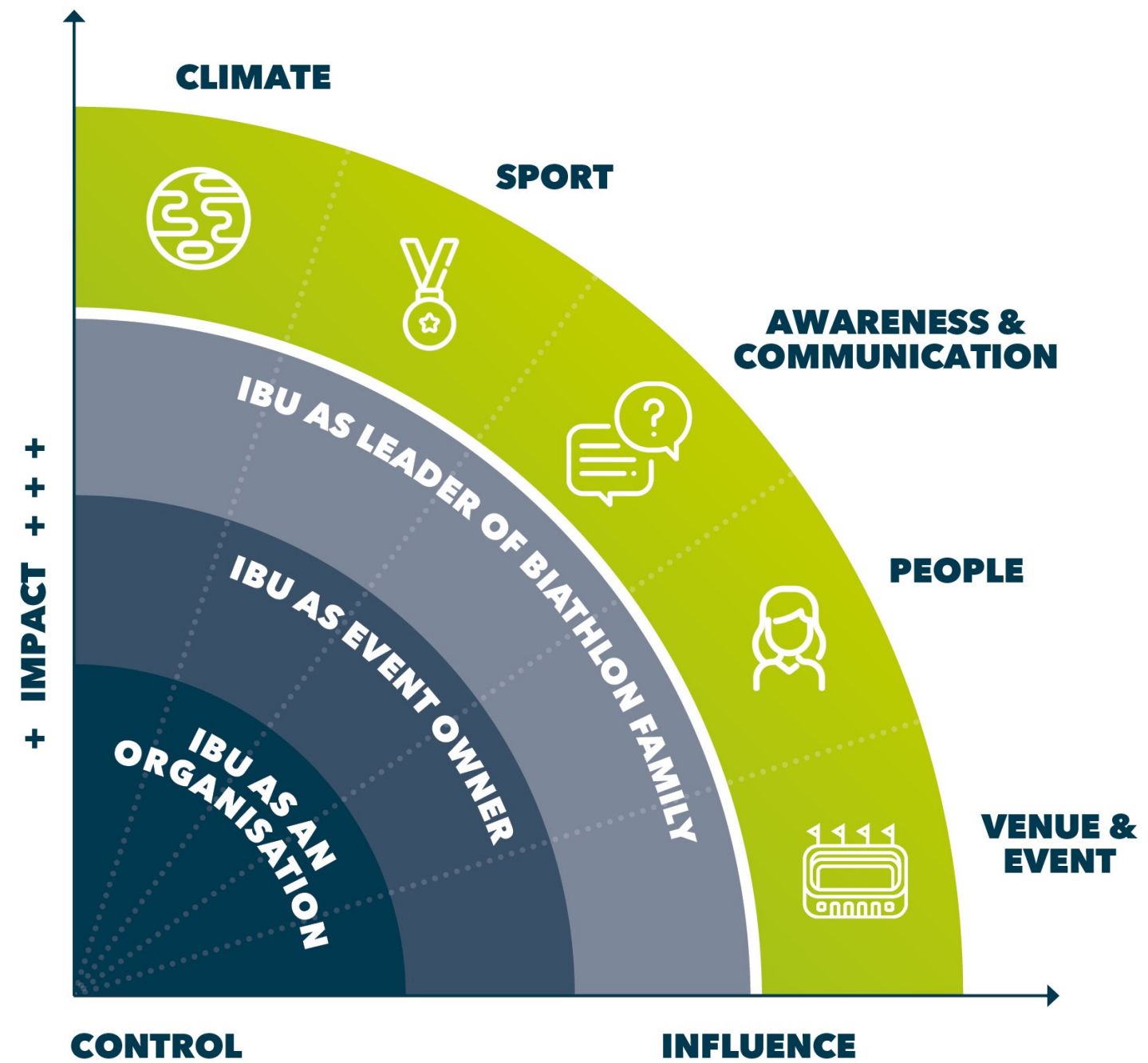
Your world depends on it.

Source: NASA



OUR WORLD DEPENDS ON IT





IBU IS HAPPY TO HELP YOU GET STARTED

- ***EMAIL: RIIKKA.RAKIC@IBU.AT***
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NETWORK***