

# Climate Change in Public Policy



# Climate Change and Public Policy

CO<sub>2</sub> Doesn't Drive Climate and There is no Crisis

- **A geological context for climate change**
- **The anthropogenic global warming narrative**
- **Is there a case for alarmism?**
- **Renewable energy intermittency**
- **The war on coal and fossil fuels**

***Coal power is essential and is not a climate villain!***

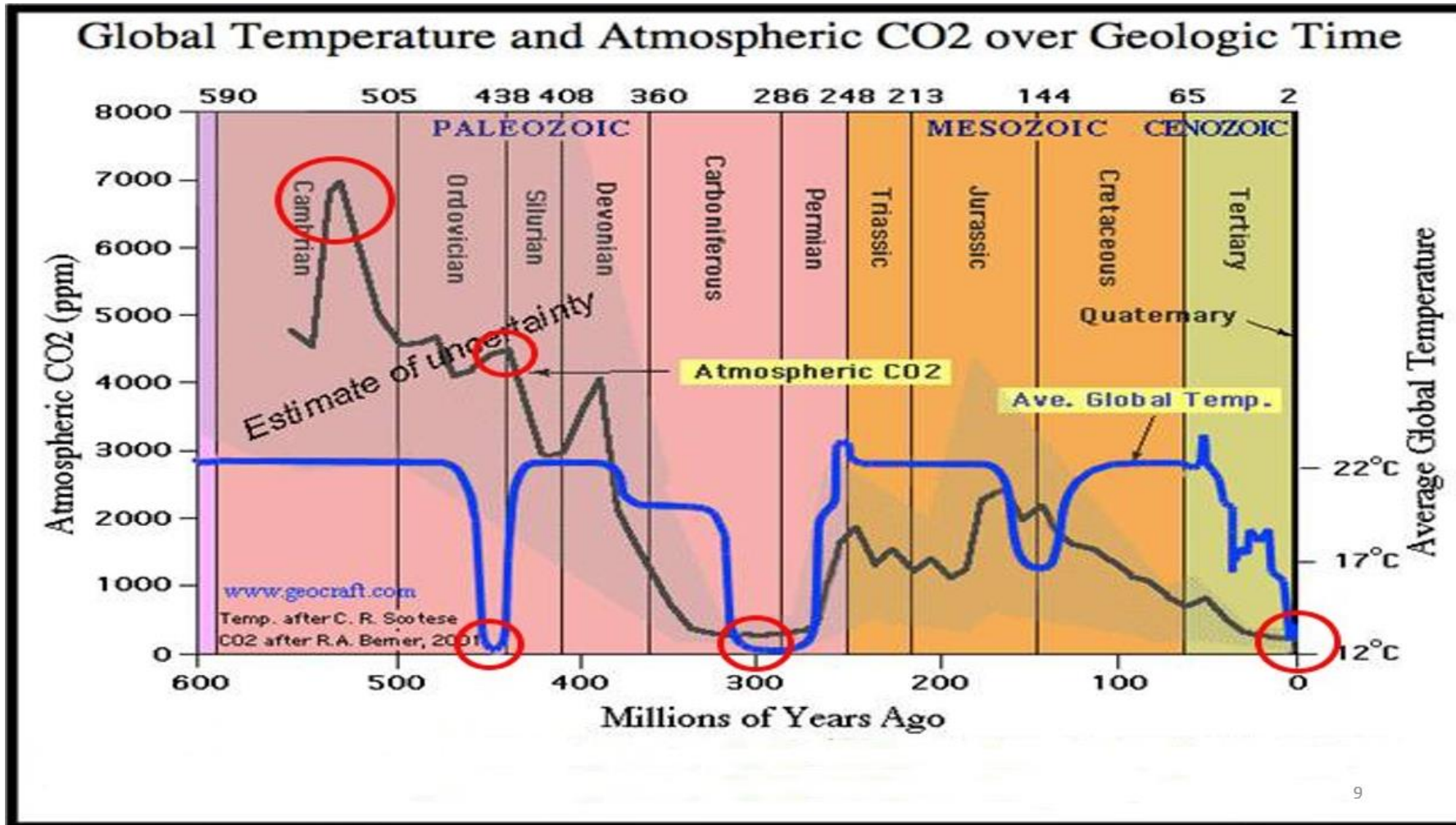
# CO2 Coalition – Climate Positions

- Carbon dioxide is an essential trace gas (0.04% or 410ppm)
- The amount of atmospheric warming associated with CO2 is low, approximately 1C per doubling of CO2
- Plants benefit from higher CO2, crop yields improve
- There is no case for demonization of CO2 or for climate alarmism
- Avoid public policy decisions based questionable climate models
- The war on coal and other fossil fuels is bad for humanity
- CO2 is at an historically low point – near dangerous levels!

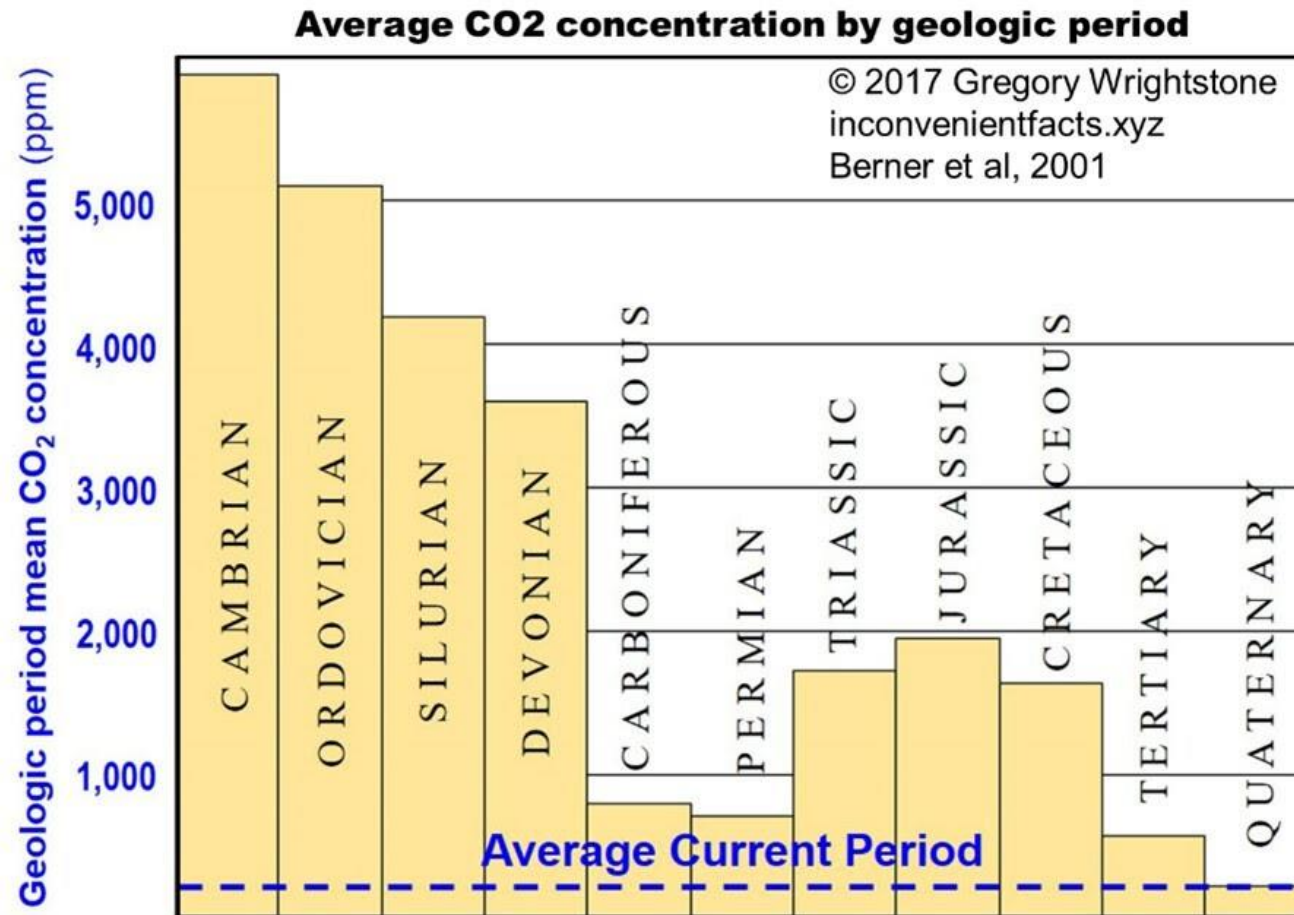
***More CO2 is beneficial for mankind***

Gregg Goodnight, CO2 Coalition and TRCS Member

# Climate Over the Last 4.6B Years



# Hot House Earth



**Below 150ppm  
CO<sub>2</sub>, plants die  
and animals  
become extinct**

Berner RA, Kothavala Z (2001) GEOCARB III: A revised model of atmospheric CO<sub>2</sub> over Phanerozoic time, IGBP PAGES and World Data Center for Paleoclimatology, Data Contribution Series # 2002-051. NOAA/NGDC Paleoclimatology Program, Boulder CO, USA.

# Our Temporary Warm Period is Ending!

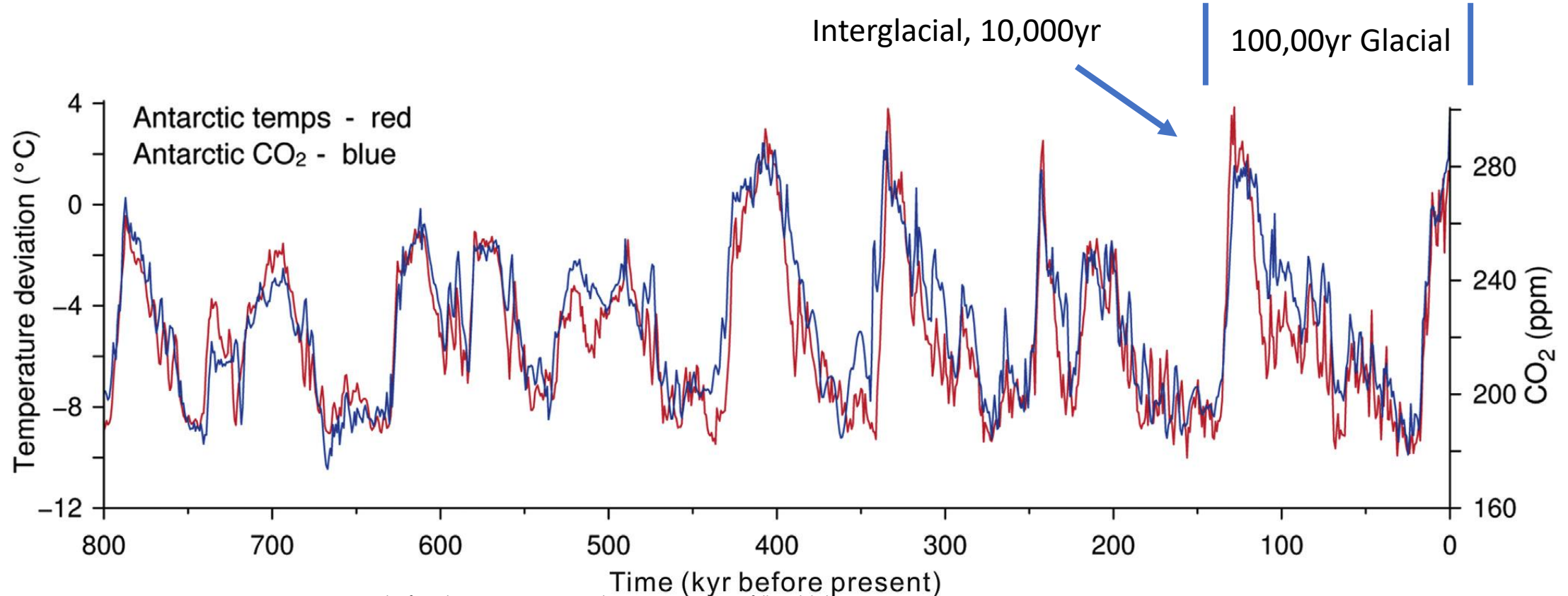
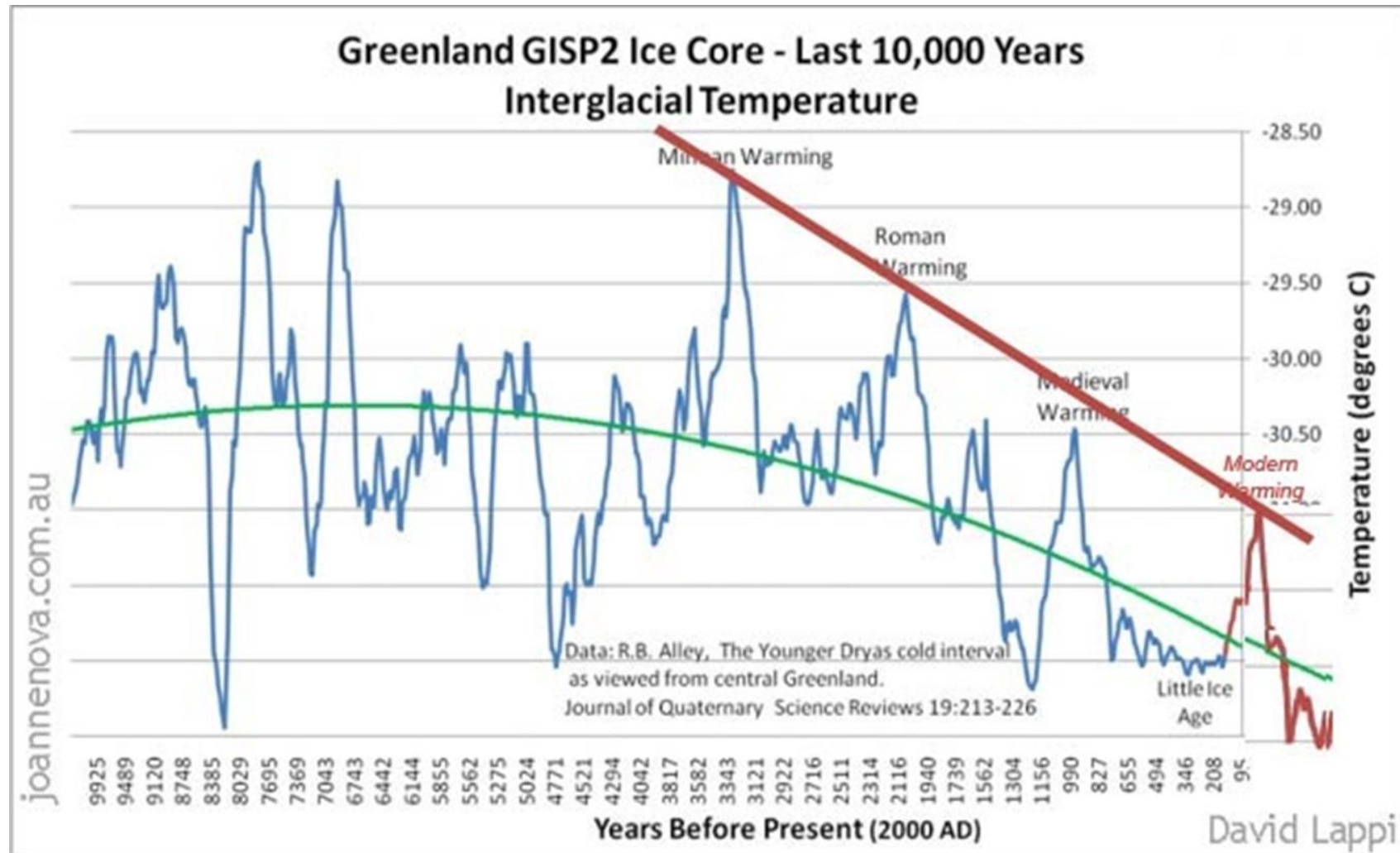


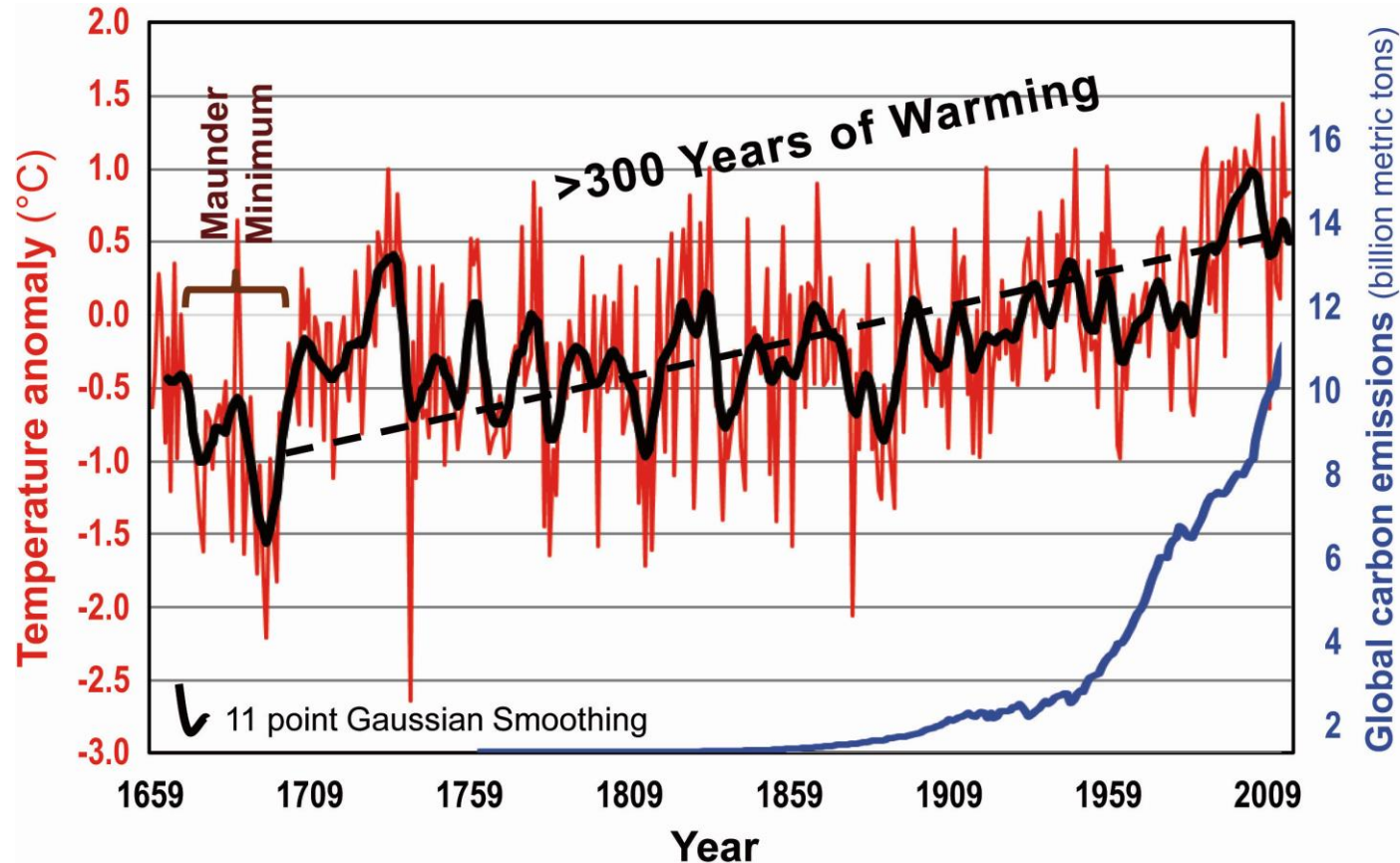
Figure 1. Antarctic temperature vs. CO<sub>2</sub> over 800 kyr from the Epica3 ice core. Note that CO<sub>2</sub> concentrations follow global temperatures very closely, giving the illusion of CO<sub>2</sub> being the primary causal feedback factor. Source: Epica3, 2007.

Source: Modulation of ice ages via precession and dust-albedo feedback, Ralph Ellis and Michael Palmer, *Geosciences Frontiers* 7 (2016) 891-909

# Warm Periods During Holocene



# AGW – CO2 Must Precede Warming!



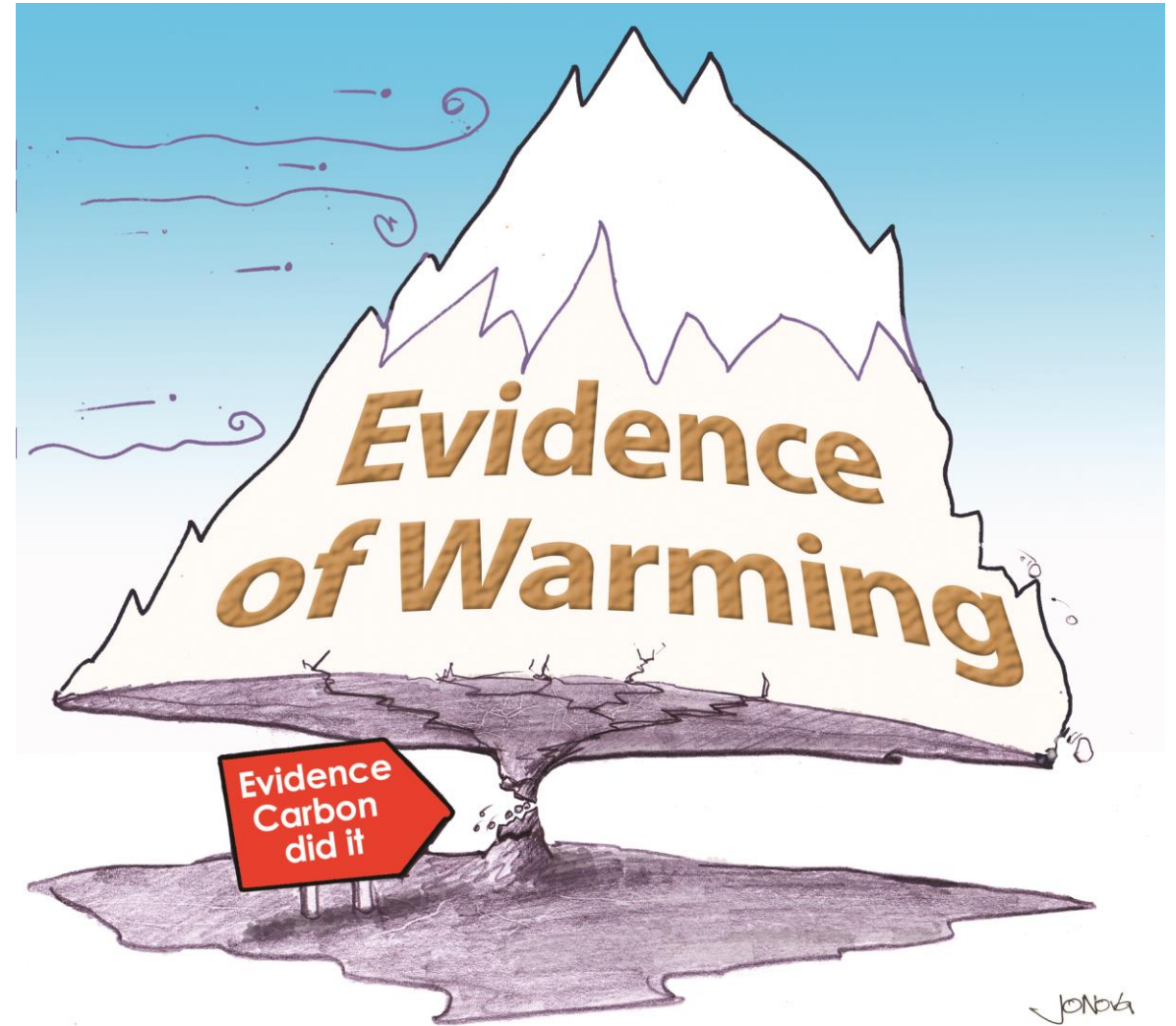
**Global temperatures have been increasing since the end of the Little Ice Age**

**An effect (global warming) cannot precede a cause (rising CO<sub>2</sub> levels)**



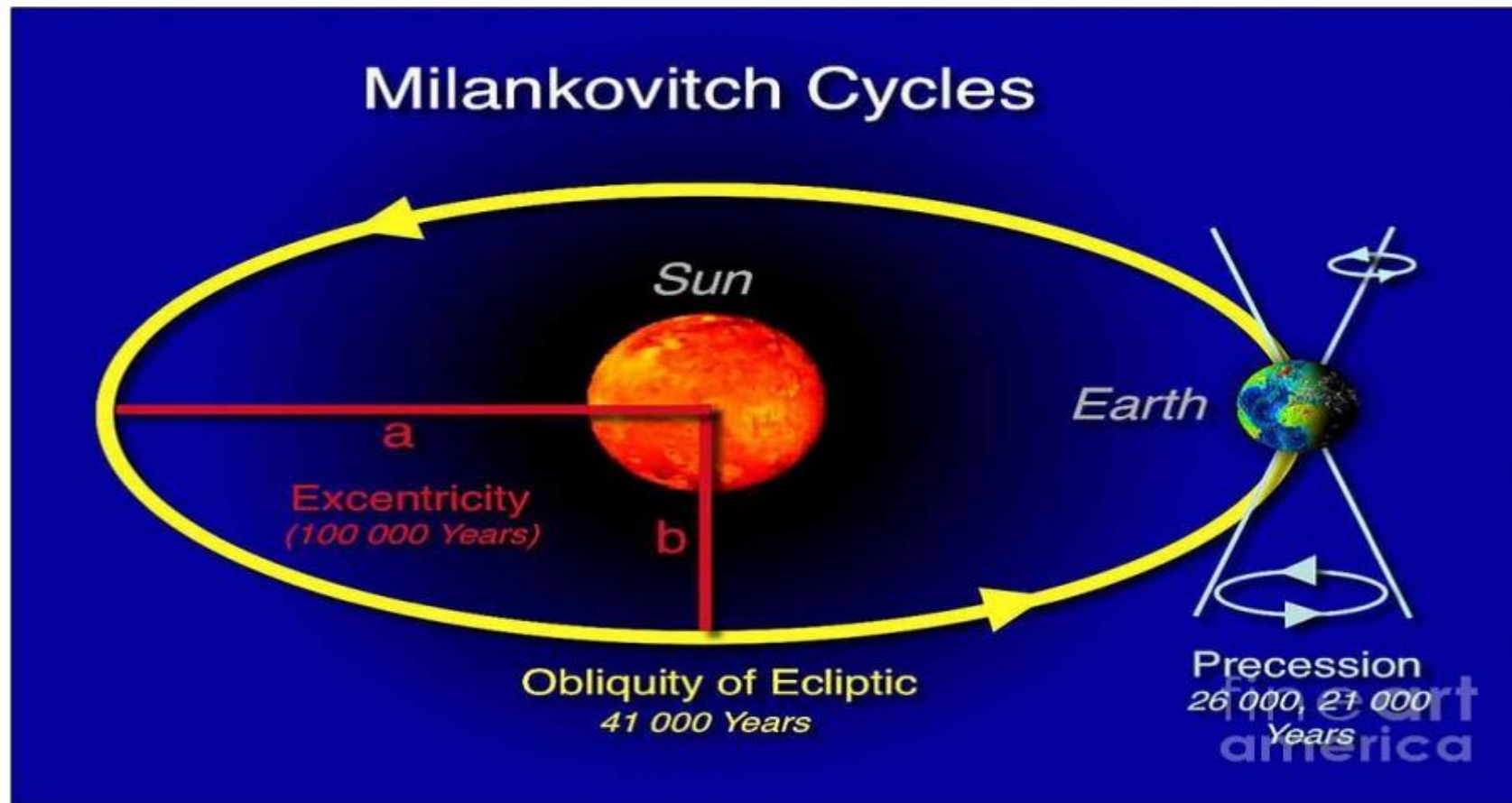
# Is Warming Anthropogenic?

- There is very little historic correlation between CO<sub>2</sub> and global temperatures; temperature increases have preceded CO<sub>2</sub>
- The earth has warmed in the last 150 years primarily due to recovery from the Little Ice Age
- Natural cycles, together with some anthropogenic CO<sub>2</sub> have warmed the earth
- It is unclear how much warming may be attributed to CO<sub>2</sub> and other GHG's, but in total, warming has been 1C



Source: Joanne Nova

# Natural Climate Change Influences



# Natural Climate Influences

- Milankovitch cycles drive climate and geologic cycles on the 100,000yr, 41,000yr, and 27,000yr timetables
- The sun's cycles of magnetic strength occur regularly on average every 11 years. These are evident by the number of sunspots.
- Low sunspot activity correlates with more intense cloud formation and cooling (The Dalton Minimum, 1790-1830)
- There are over 10 other sub-millennial oceanic, terrestrial, and cosmological cycles that impact climate

# The Climate Change Narrative

*Climate Change* - The primary driver of the globe's climate is the emission of greenhouse gasses, primarily CO<sub>2</sub> generated through the burning of fossil fuels, and if trends are left unchecked, will result in runaway global warming. The solution to this problem is the elimination of fossil fuels.

*Extreme Weather Hypothesis* – man's use of fossil fuels has caused global warming which in turn increases the frequency and severity of extreme weather events

# The Climate Change Narrative

*Assumption 1- Climate Stasis* – Without man's intervention into the climate, the earth's climate is and will continue to be relatively stable. Logical extension → all extreme weather events are evidence of man-made climate change (weather amnesia)

*Assumption 2 – The Ideal Climate Assumption* – In recent history, we have been living in a time of ideal climate that will remain except for man's intervention

# Does “Consensus Science” Exist?

- The frequently “97% of scientists support the climate change theory” is propaganda, it is based on a totally discredited study by Australian John Cook. A major problem was that in the survey, there was no distinction between some contribution of CO2 to warming and a significant contribution
- In the Scientific Method, **consensus** is irrelevant, only observations and data matter – you don’t vote on good science!
- “Consensus” is a political term, not a scientific term

***“In questions of science, the authority of a thousand is not worth the humble reasoning of a single individual”***

Galileo Galilei

# My Conclusions after 6 Years Study!

## “Climate Change” is politics, not science

- The term “Climate Change” is a **narrative**, not a **scientific hypothesis**;
- The “global warming” term evolved to “climate change” because the former term could be falsified!
- Fact: Over the 4.6B years of earth’s history, the earth has undergone many cycles of extreme climatic variation; “Climate Change” is nonsense. I’ve never met anybody that denies that climate changes!

# Is There a Case for Alarmism?

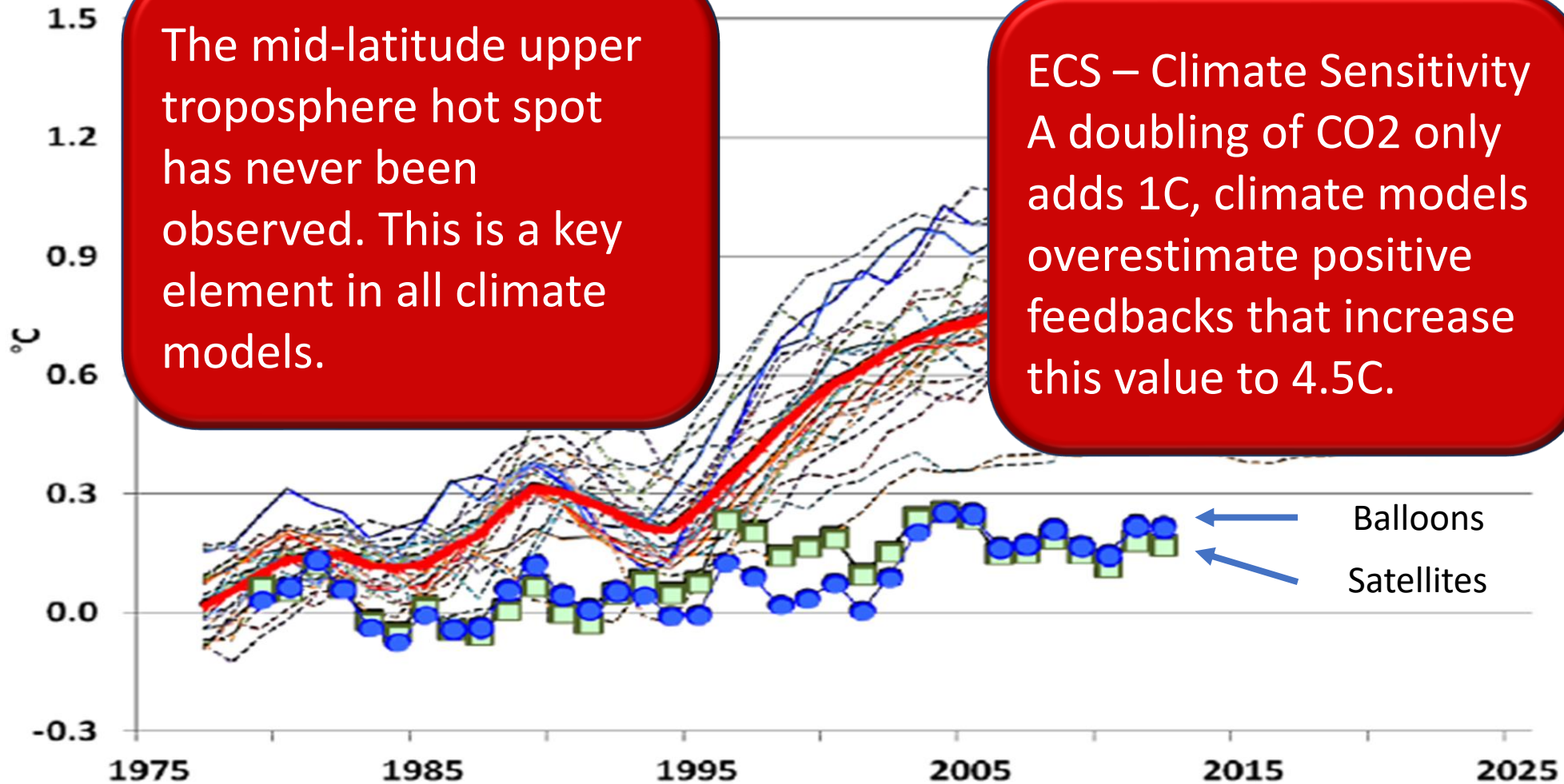
- The UN's IPCC warns that an increase of 2.0C by 2100 from pre-industrial times could have severe negative outcomes from for the planet and suggests that a maximum target of 1.5C be achieved by taking radical steps to transition the global economy to renewable energy sources
- These goals are completely arbitrary!
- Since the global has already warmed 1C since the start of the Industrial Revolution, we are expected to believe that another 0.5C will be catastrophic?
- Warming observed in the last 100 years includes natural climatic cycles, specifically recovery from the low point of **The Little Ice Age**
- **The only case for Climate Alarmism is from Climate Models**



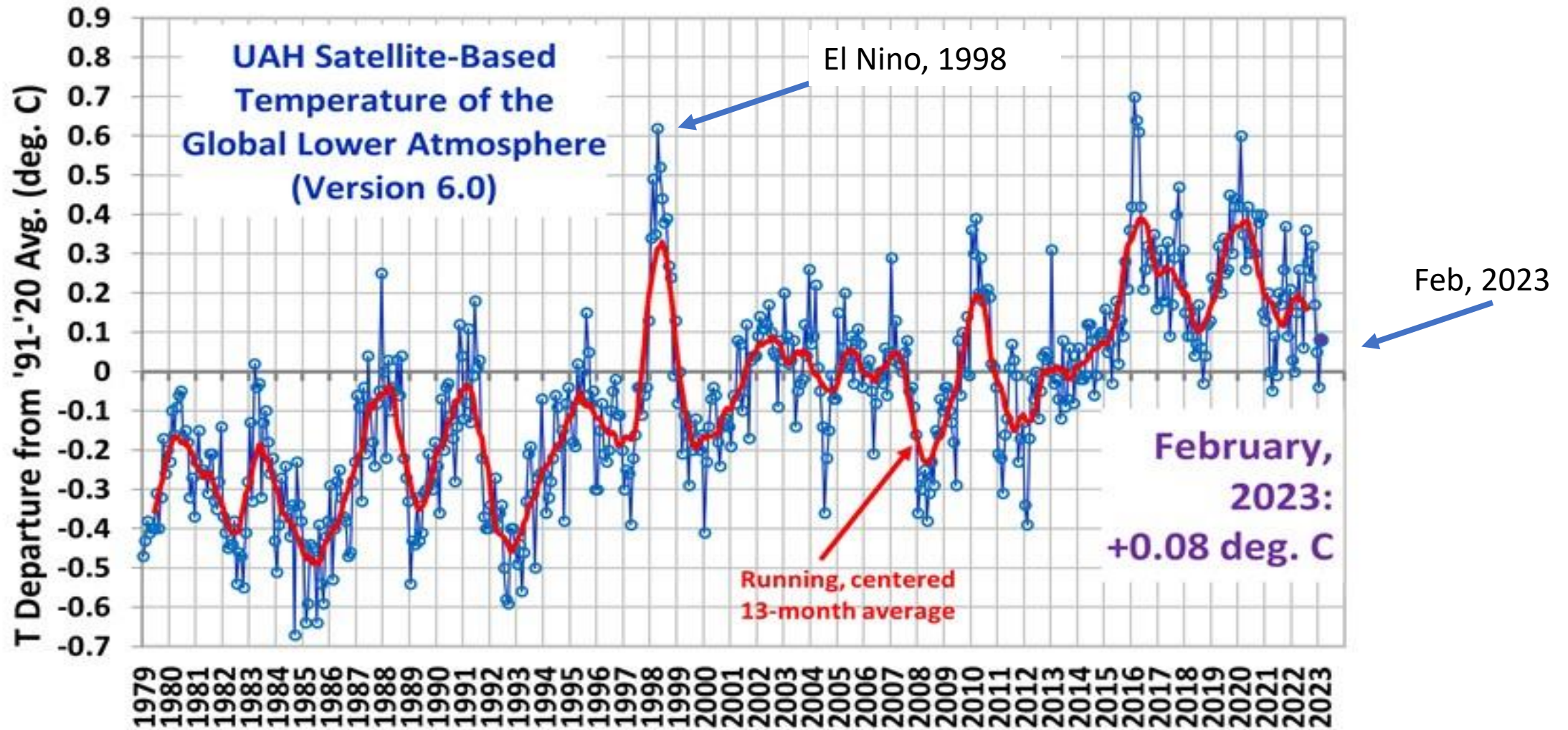
# Climate Models vs Reality

The mid-latitude upper troposphere hot spot has never been observed. This is a key element in all climate models.

ECS – Climate Sensitivity  
A doubling of CO<sub>2</sub> only adds 1C, climate models overestimate positive feedbacks that increase this value to 4.5C.



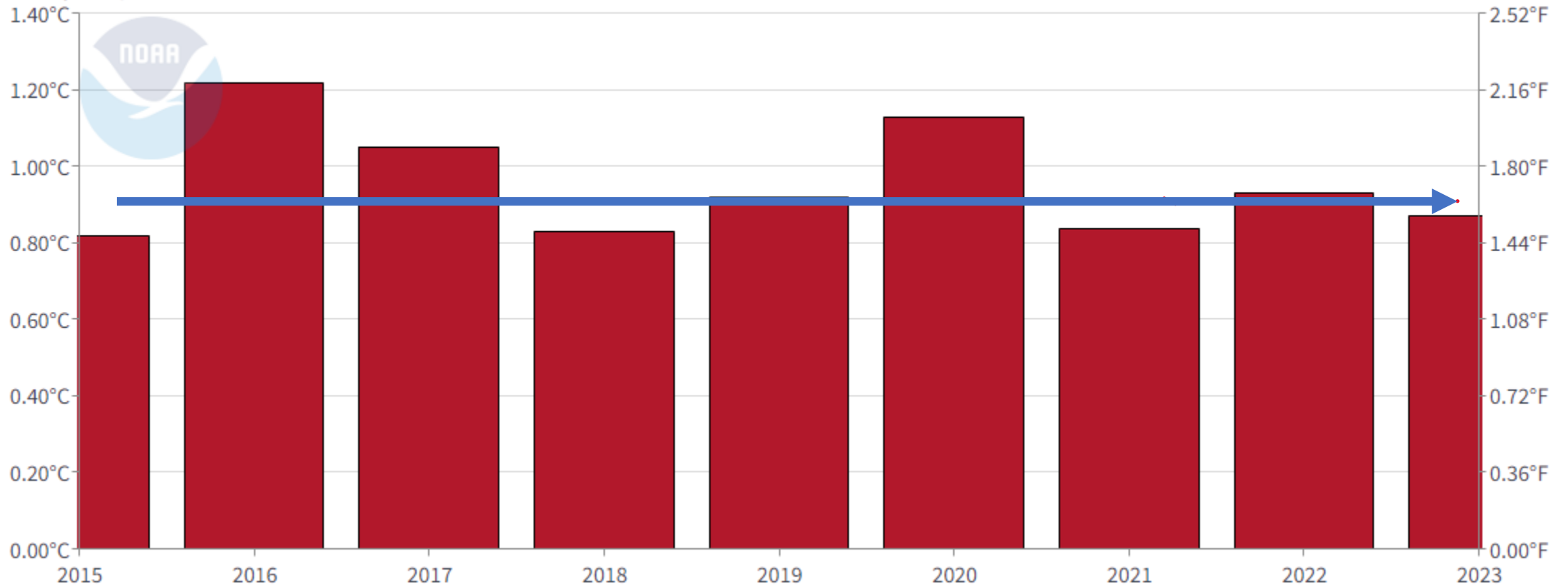
# We Are Currently at the 30-Yr Avg.



# Eight Years of No Warming

## Global Land and Ocean

January Temperature Anomalies



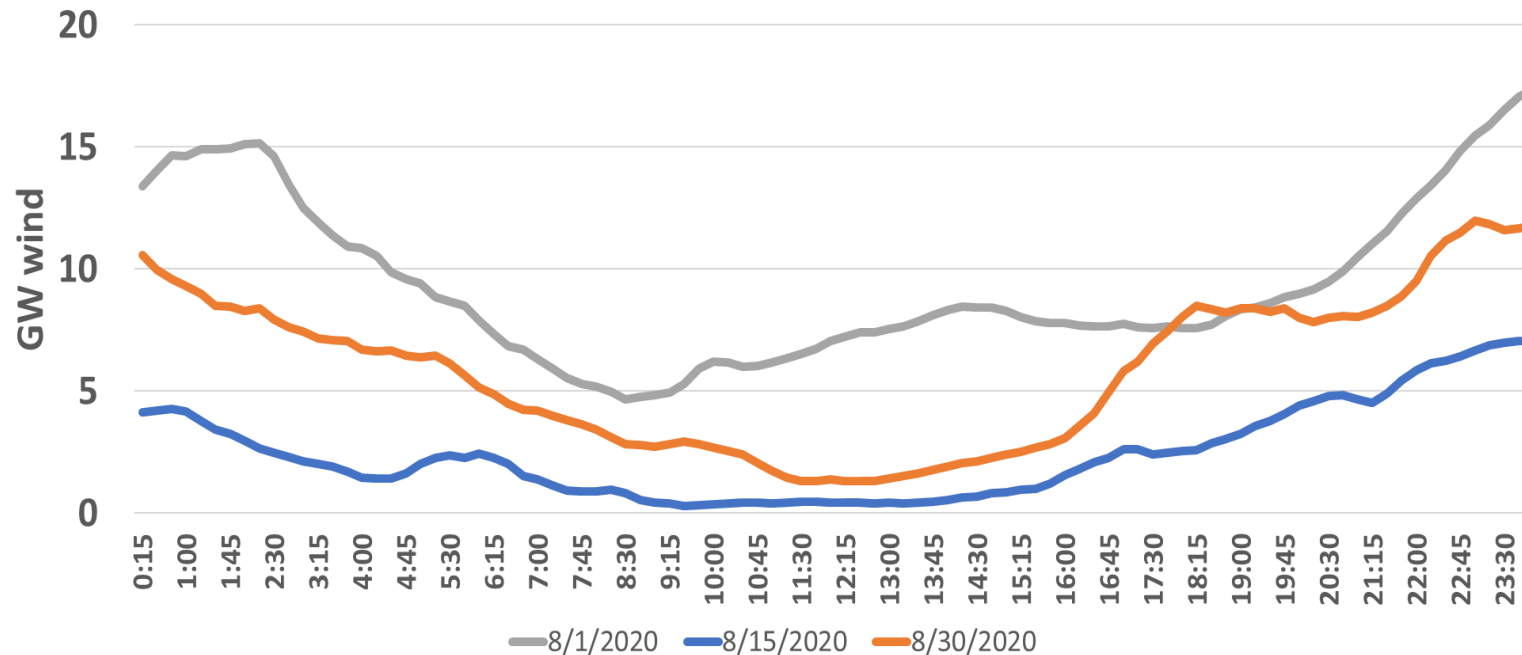
# Wind and Solar Drawbacks

The installation of wind and solar power is not a direct replacement of **dispatchable** natural gas/coal/nuclear based power.

In Europe, power prices have skyrocketed, idled coal and nuclear facilities have been returned to service or shutdowns delayed

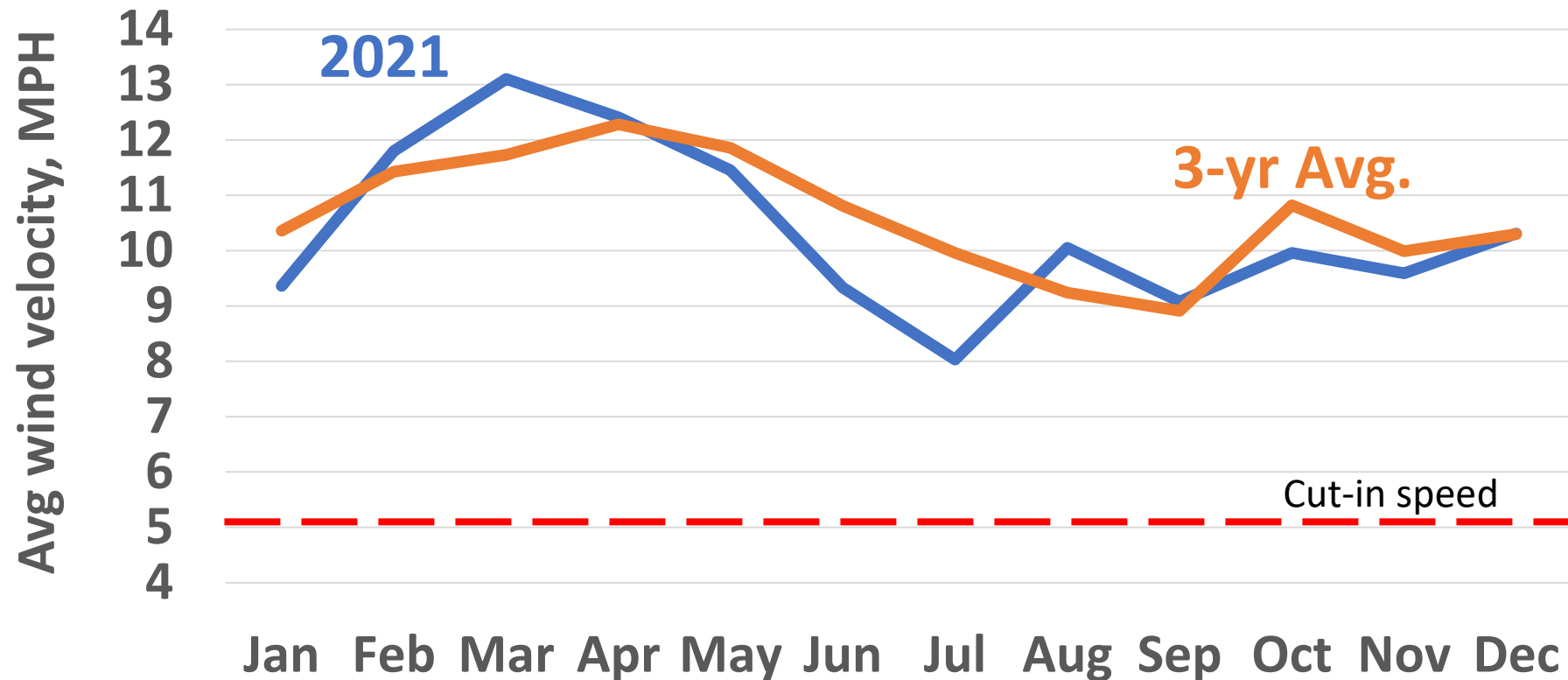
# Wind Power Variability

Reported Wind Power for ERCOT, August 2020



- The power that can be generated by wind turbines is proportional to the cube (that is  $V^3$ ) of wind velocity, this amplifies wind power's generation variability
- You cannot assure adequate wind power by adding more turbines; wind outages are regional in nature

# Seasonal Wind Speed Abilene, Tx

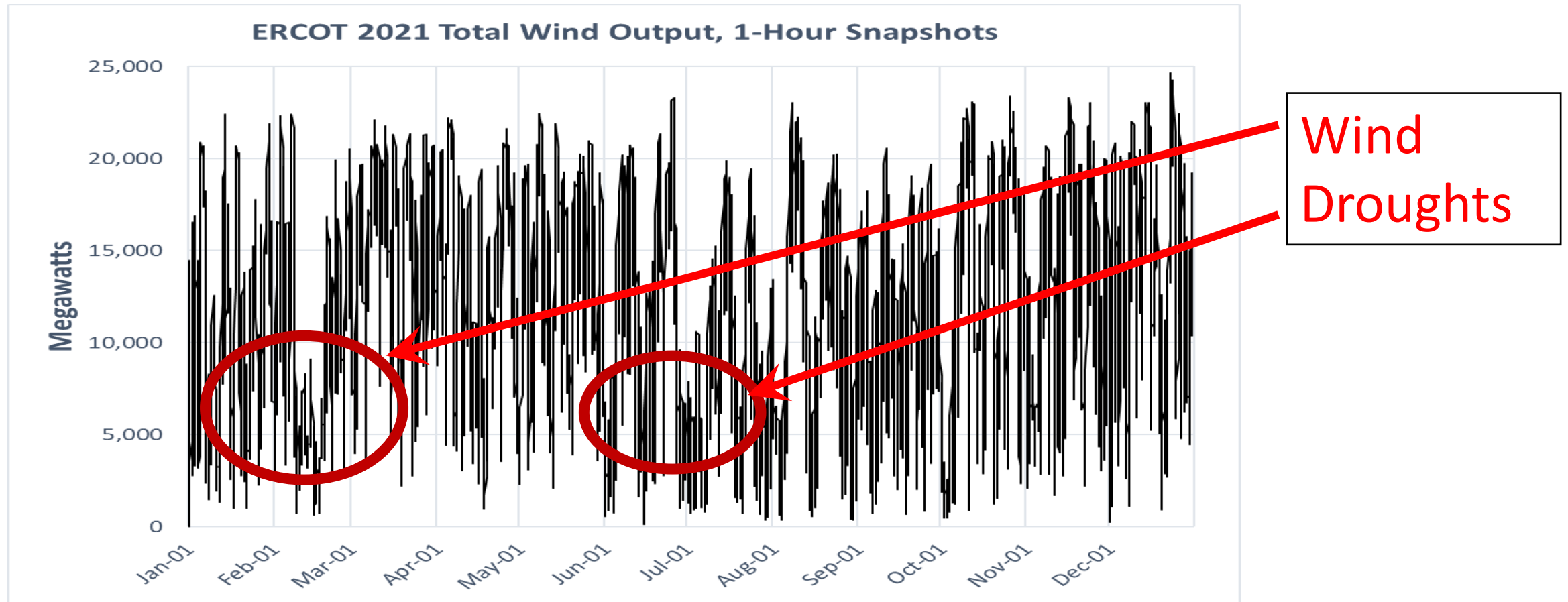


Source: wunderground.com  
monthly averages 2021

# Global Wind Droughts

- **Seen in all geographic regions**
- **Associated with stable high-pressure systems both summer and winter → little wind**
- **Uri saw a prolonged 5-day period**
- **Germany saw a wind drought in the spring of 2022**
- **The UK saw a wind drought in the fall of 2021**

# Daily Wind Power Output



Source: ERCOT 2021 Hourly Wind and Solar Output



# Reported Power During Elliott

megawatthours

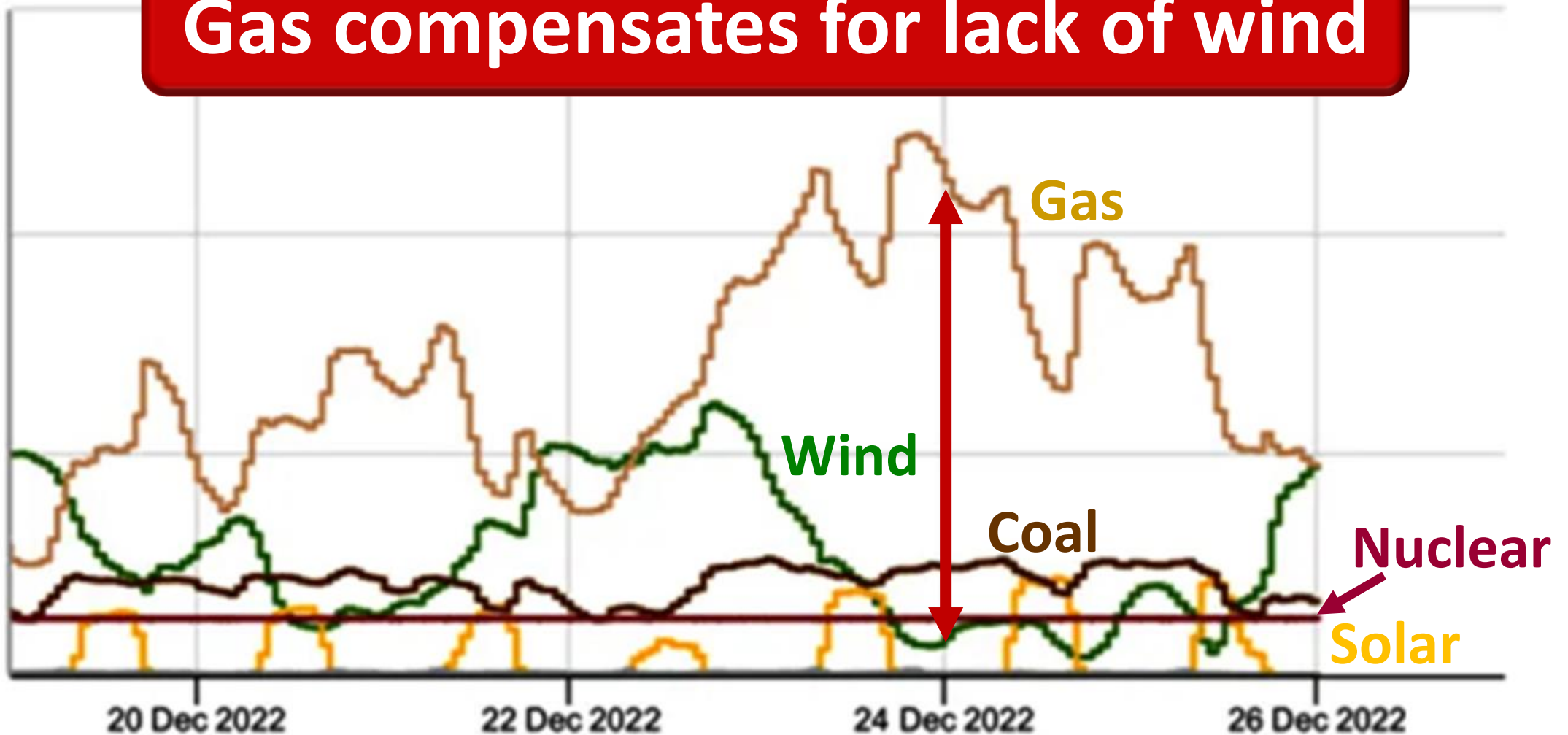
60,000

**Gas compensates for lack of wind**

40,000

20,000

0



# German Wind Drought 2022

Wind 3 GW = 5% of 60GW Capacity vs Avg of 24GW

Power Generation & Demand

100 GW  
75 GW  
50 GW  
25 GW  
0 GW

Net Demand

Solar

Avg Wind

Onshore

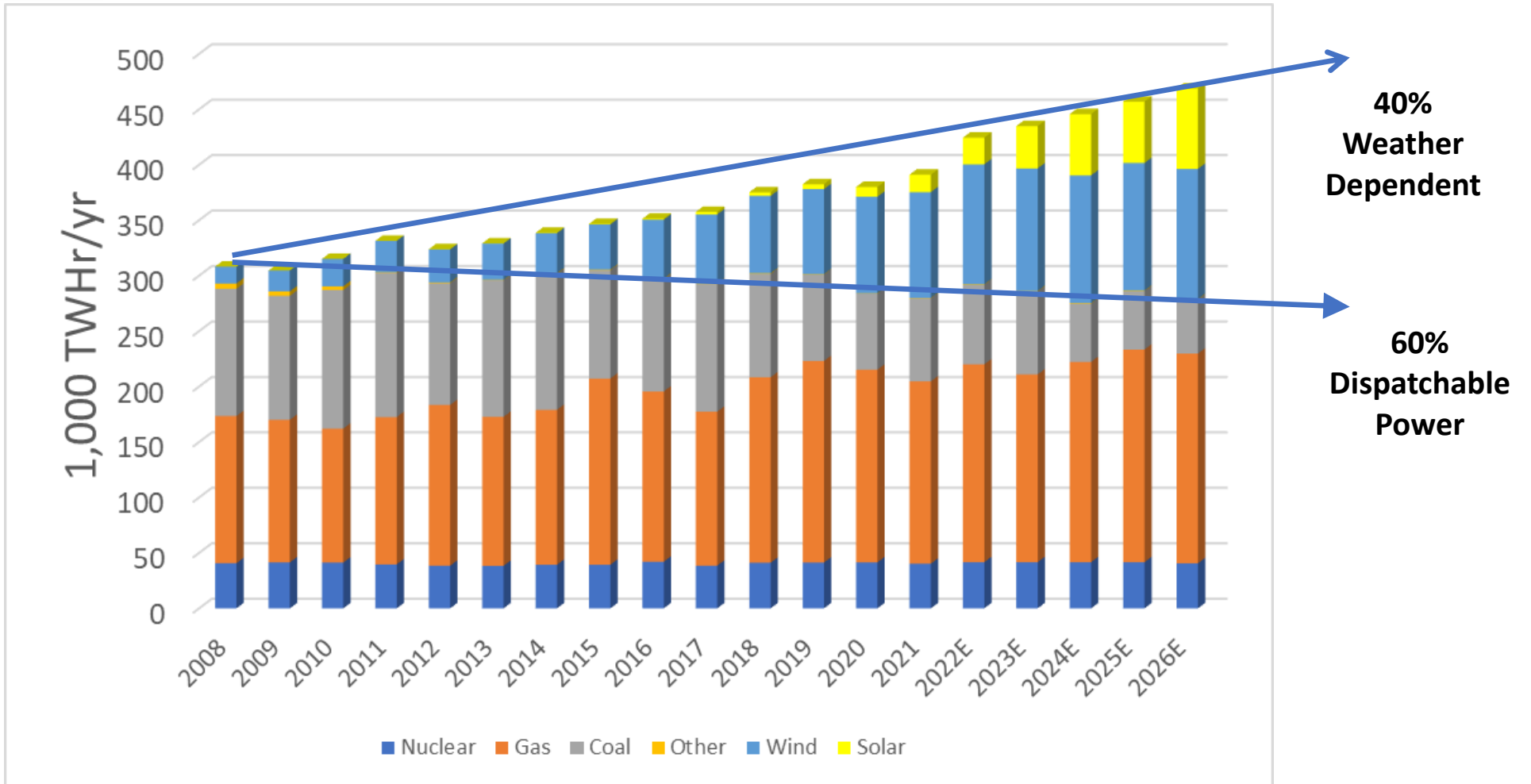
Offshore

24April22

10May22



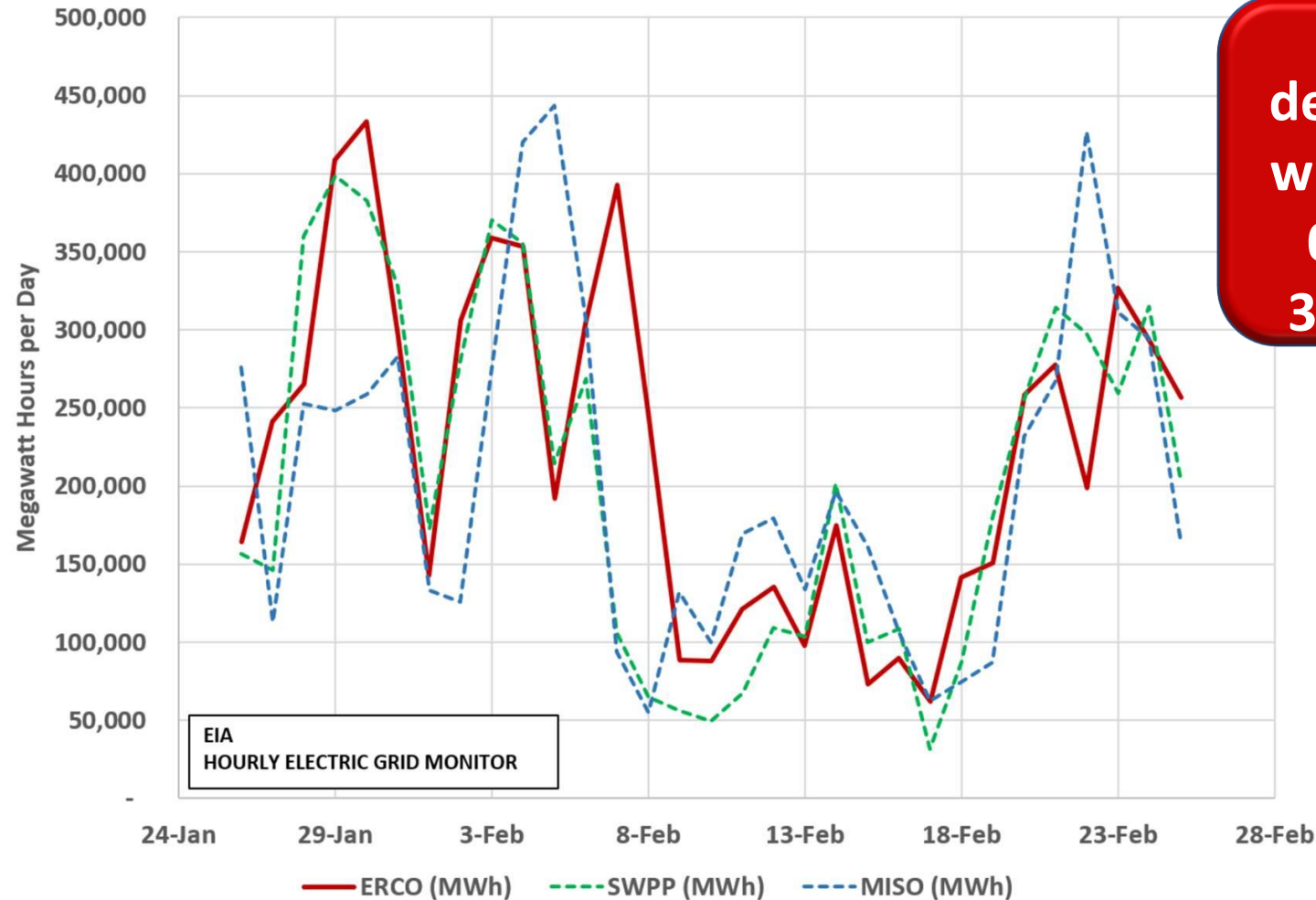
# Power Generation



Source: ERCOT, EIA, E3, TRCS projections

# US Power Wind During Uri

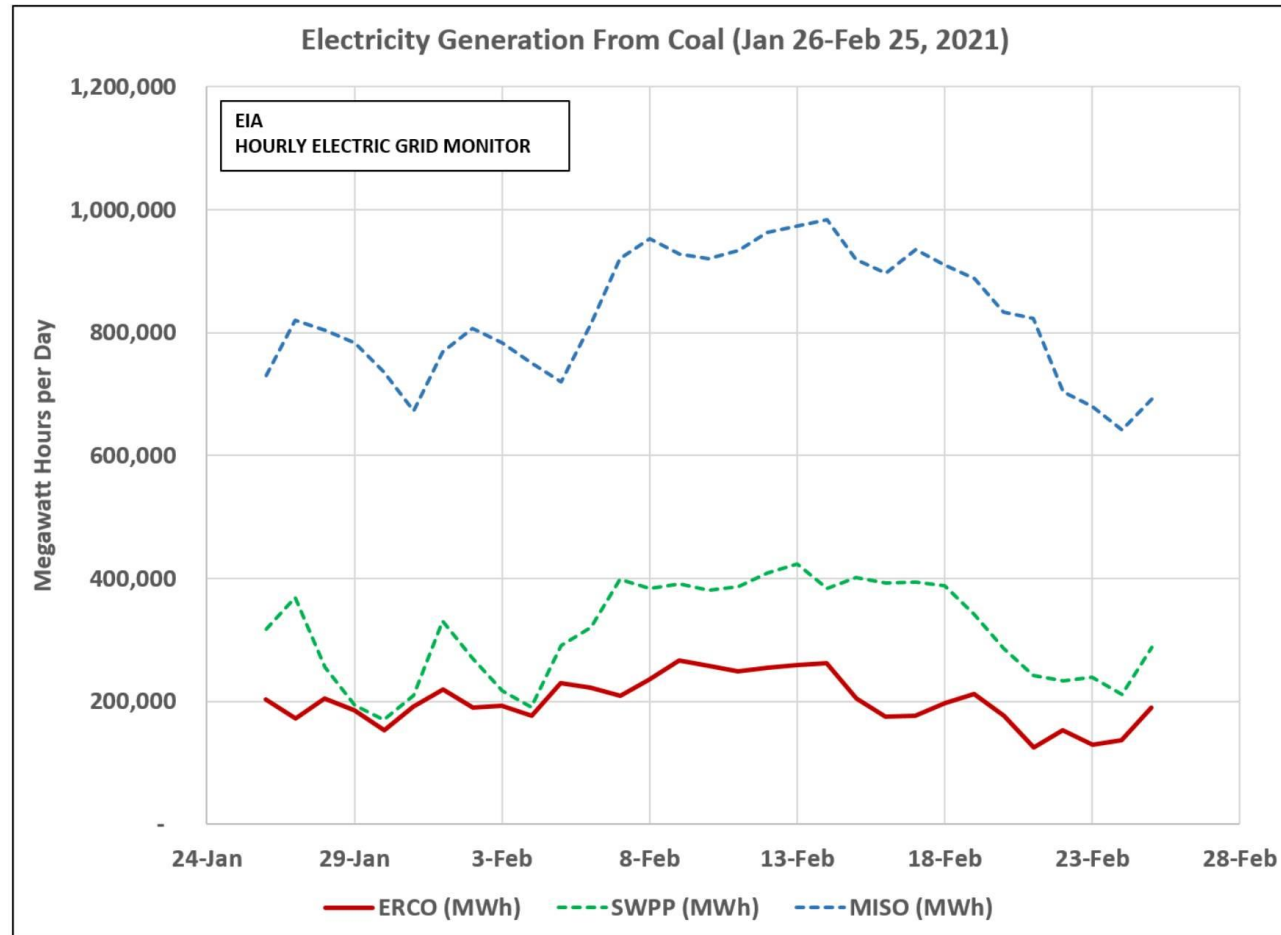
Electricity Generation From Wind Power (Jan 26-Feb 25, 2021)



**On 2/15/21,  
delivered ERCOT  
wind power was  
0.8GW out of  
35GW capacity**

# Coal Saved the Day in MISO and SWPP

MISO and SWPP didn't experience as severe power failures because they have far more coal-fired generation than ERCOT.

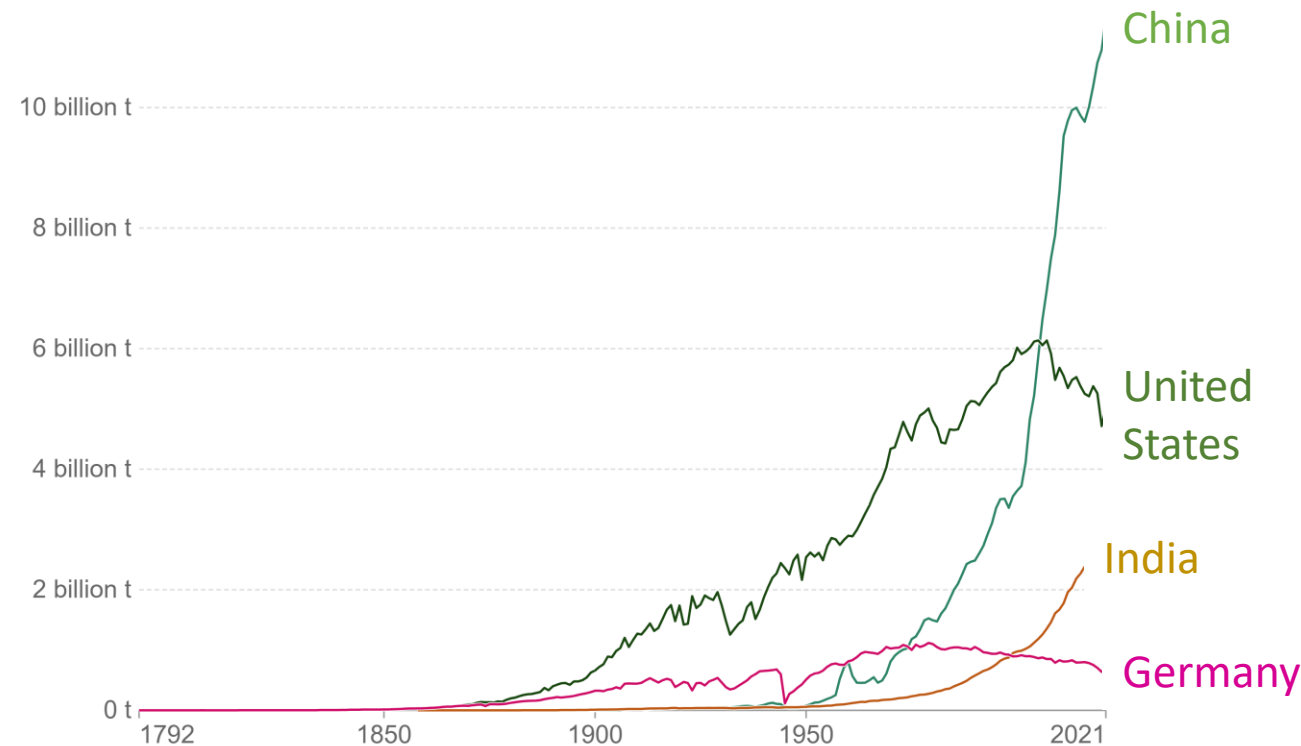


# CO2 Emissions per Country (GT/yr)

## Annual CO2 emissions

Carbon dioxide (CO<sub>2</sub>) emissions from fossil fuels and industry<sup>1</sup>. Land use change is not included.

Our World  
in Data



Source: Our World in Data based on the Global Carbon Project (2022)

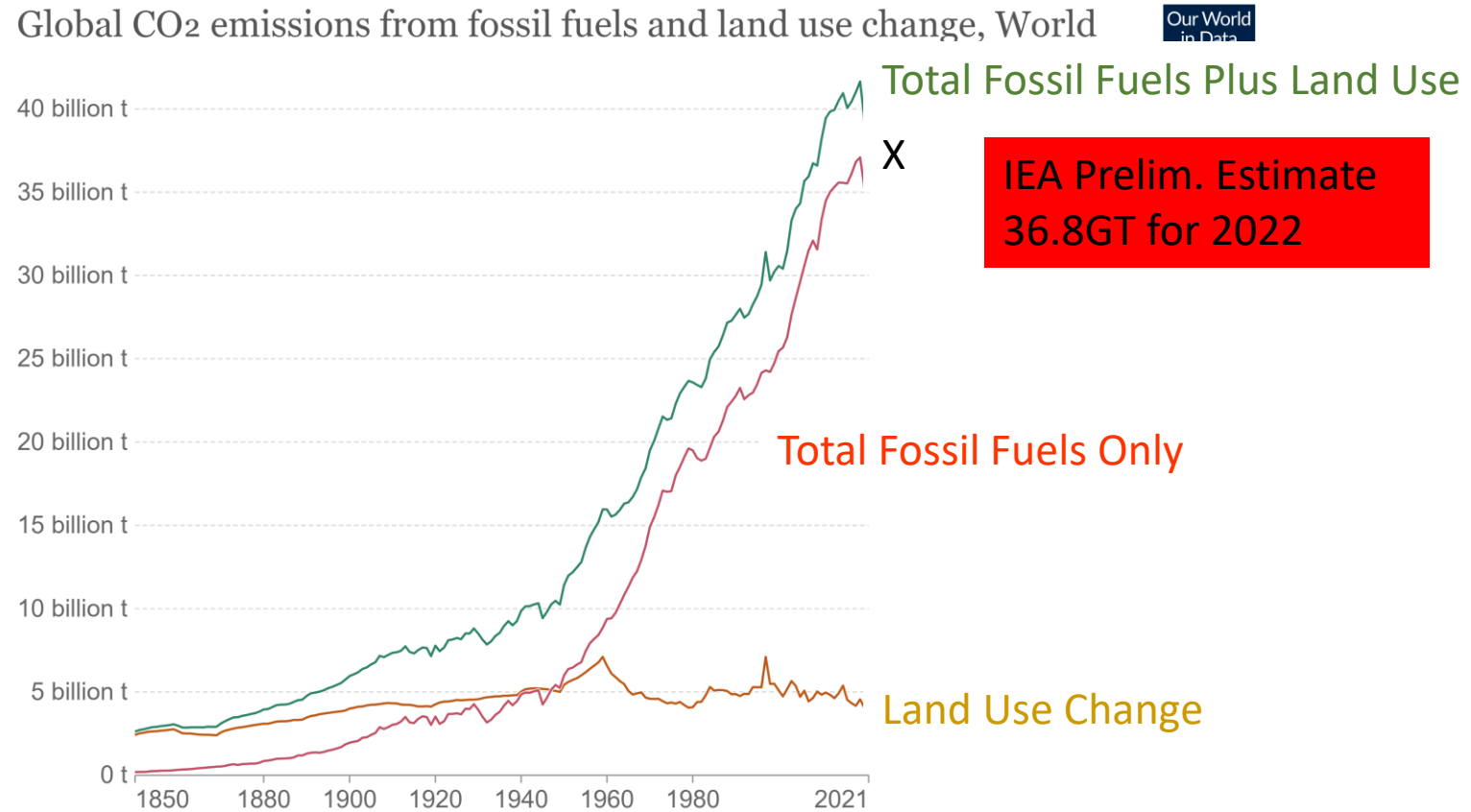
OurWorldInData.org/co2-and-greenhouse-gas-emissions • CC BY

**1. Fossil emissions:** Fossil emissions measure the quantity of carbon dioxide (CO<sub>2</sub>) emitted from the burning of fossil fuels, and directly from industrial processes such as cement and steel production. Fossil CO<sub>2</sub> includes emissions from coal, oil, gas, flaring, cement, steel, and other industrial processes. Fossil emissions do not include land use change, deforestation, soils, or vegetation.

Country	GT/yr (2021)	Percent
China	11.5	31.2%
US	5.1	13.6%
India	2.71	7.4%
Others	17.5	47.8
World	36.8	100.0%

Source: Our World Data

# Did COVID Make a Difference?



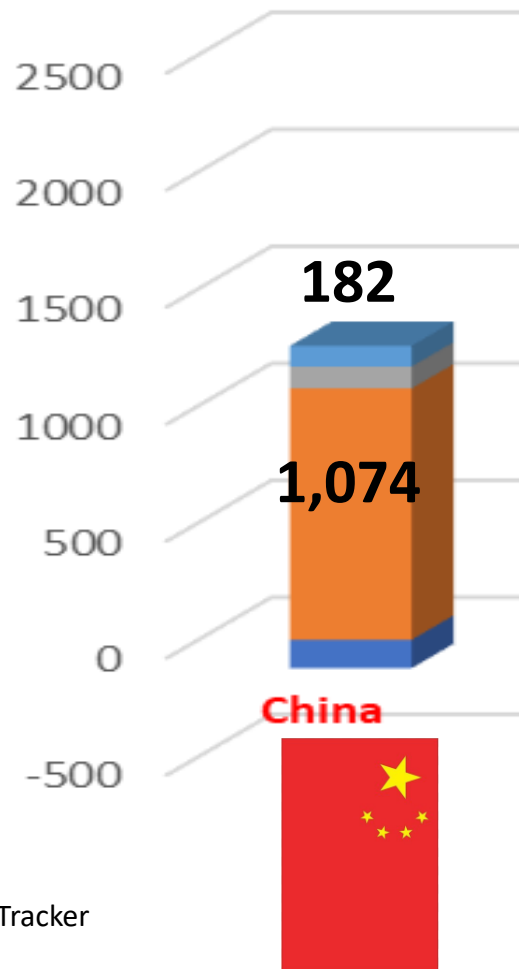
Source: Our World in Data based on the Global Carbon Project (2022)

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

<https://ourworldindata.org/co2-emissions>

## Coal Power Trends

Operating Construction Announced Retired



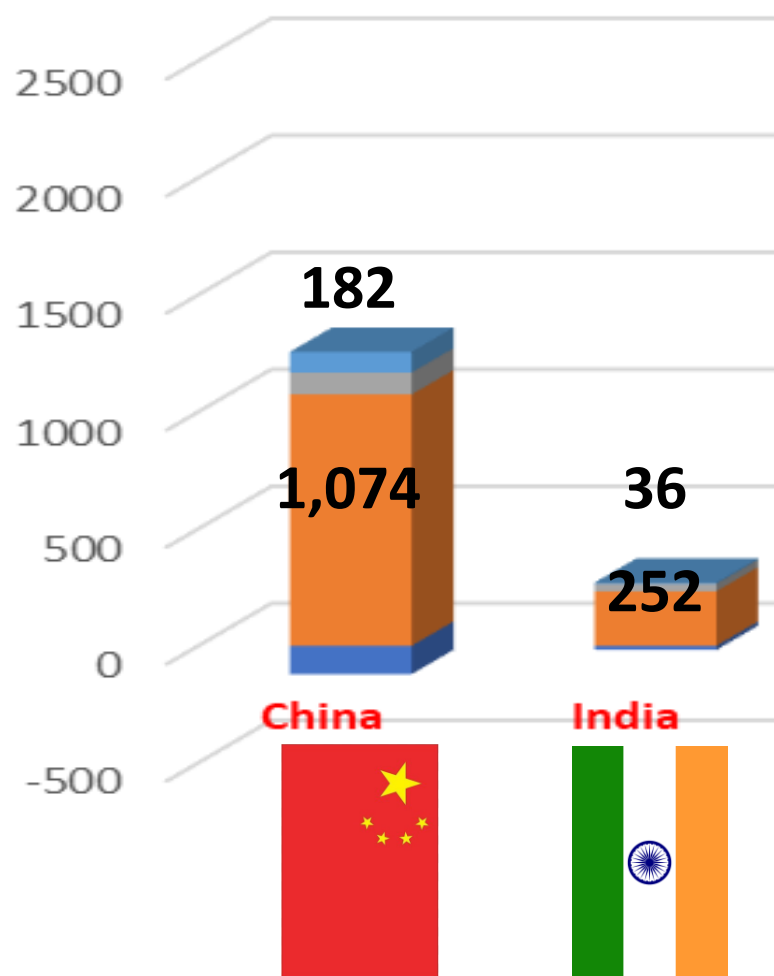
### CHINA

- China is upgrading its coal power fleet to improve environmental footprint
- About 1,000 shutdowns averaging 110 MW being replaced with modern fleet averaging 600MW
- China has 52% of the worlds coal-fired power capacity
- China has 60% of the world's new capacity either under construction or announced



## Coal Power Trends

Operating Construction Announced Retired

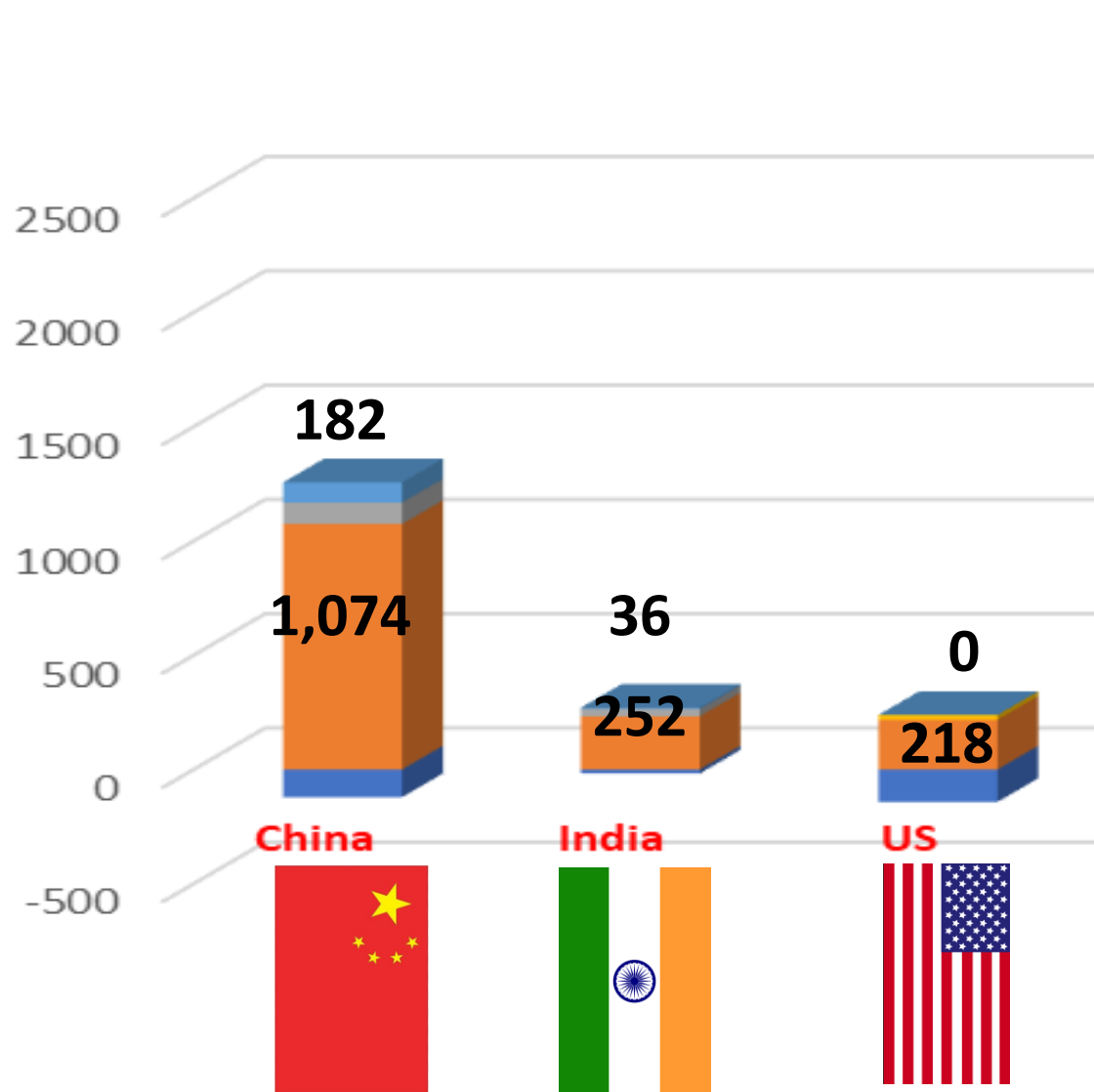


### India

- India did not commit to GHG targets in the Paris Agreement and will access cheap energy to grow
- India has an additional 15% of coal-fired power projects planned
- Operating capacity of 233GW will see minimal retirements

## Coal Power Trends

Operating Construction Announced Retired

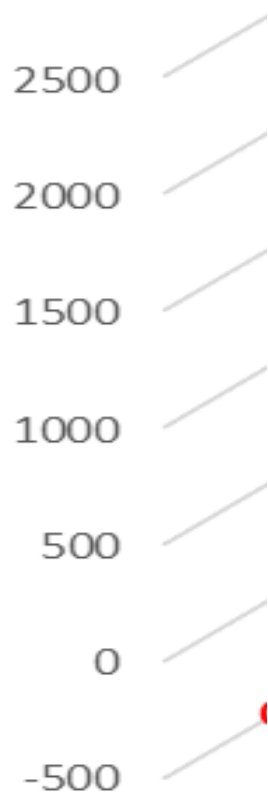


### USA

- The US has only 218GW of operating coal power capacity, 10% of the global total
- Shutdowns to date have been 140GW
- No new coal power is planned
- The US has only one modern super-critical coal fired power plant located in Arkansas

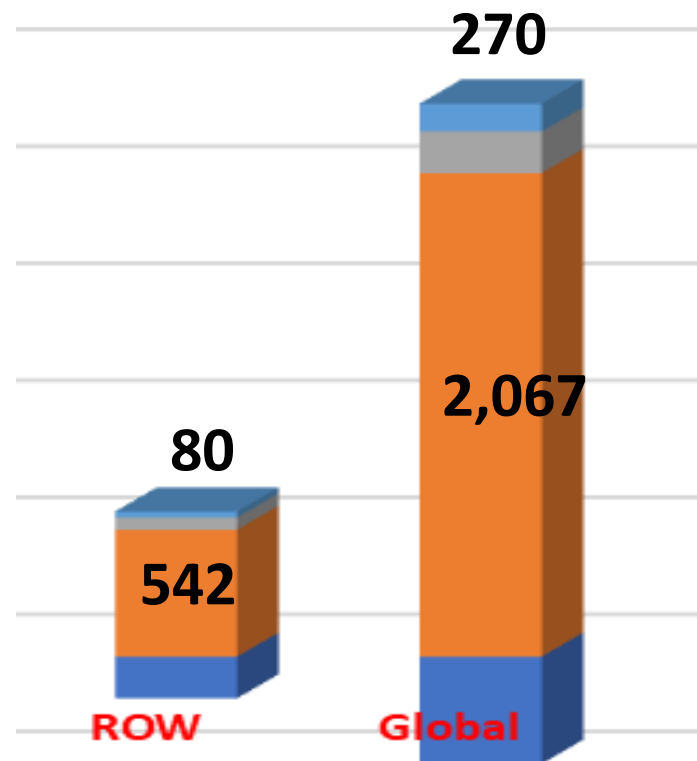
## Coal Power Trends

Operating Construction Announced Retired



### Rest of World

- The rest of the world plans for the addition of 80GW of coal fired power
- This is 41% of new additions
- Many of the additions are in developing Asia
- Africa could benefit from coal power, but investment has been constrained



# Our Secretary of Energy – Is Correct!



FILE PHOTO: U.S. Secretary of Energy Jennifer Granholm hosts a U.S. Department of Energy news conference in Washington, U.S., December 13, 2022. (REUTERS/Mary F. Calver/File Photo)

“... I think China has done, has been very sensitive, and has actually invested a lot in their solutions, to achieve their goals.” Granholm added, “So we’re — we’re hopeful that, you know, **we can all learn from what China is doing.**”

Texas Public Policy Foundation chief national initiatives officer Chuck DeVore told Fox News Digital in February that **China’s climate change initiatives are “merely a device to engage gullible Westerners into thinking that somehow we can get meaningful cooperation.**

# Biden Administration Strategy

- It is easier to tighten regulations to a point where certain technologies are economically unviable rather than to have mandates from new laws
- Cost/benefit analysis required by Congress for new and revised regulations is gamed with questionable calculations; Biden's Executive Order 13999 signed in January 2021 states that costs are no longer to be considered in the case of environmental impact
- The EPA is supposed to represent the best interests of all citizens, has become politicized. In reality, revised regulations reflect partisan policy choices
- The EPA has a "revolving door" with the green industry NGO's (example - NRDC and Gina McCarthy, former Obama head of EPA and current Biden admin.)
- **Congress has mandated cost/benefit analysis (Circular A-4) – is this what is happening?**

# The Green New Deal Revisited

- According to the DOE, the Inflation Reduction Act of 2022 represents a \$369B investment in the “modernization of the American Energy system”
- This is in addition to funds from the Bipartisan Infrastructure Law of 2021
- Biden’s 2021 re-entry into the 2015 Paris Agreement saw the doubling of CO<sub>2</sub> reduction targets (from a reduction of 1.6GT/yr to a reduction of 3.0GT/yr versus the 2005 base of 5.2GT/yr)
- The new target represents a 50-52% reduction from actual 2005 CO<sub>2</sub> emissions compared to 26-28% prior.
- **The only way to achieve these targets is through significant cuts in coal power capability and rapid expansion of weather-dependent renewables**

# Key Regulatory Initiatives

**The Biden administration is conducting a war on fossil fuels through executive orders and tighter regulations. In effect, weaponizing the Clean Air Act.**

- **Soot/particulate standard**
- **Cross-state air pollution rule**
- **Proposal for carbon capture of new gas-fired capacity**
- **CCR or Coal Ash Rule**
- **Methane Rule**
- **Social cost of carbon**
- **NEPA Regulations**
- **Powerplant wastewater effluent rule**

**Thank You!**

**Thank you for your attention and I look forward to your questions during our Q&A**