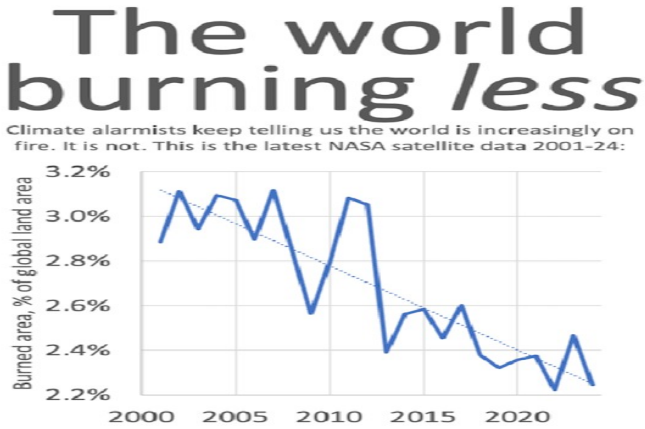
February 2025 newsletter

CliSciPol

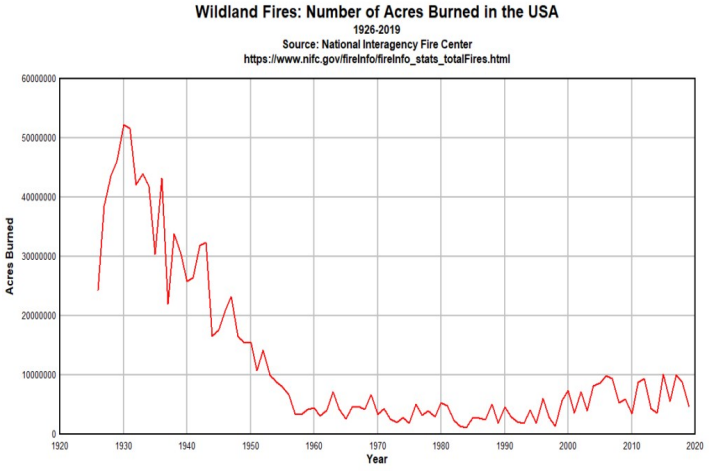
Climate Science and Policy for Nonscientists

One picture is worth a thousand words.

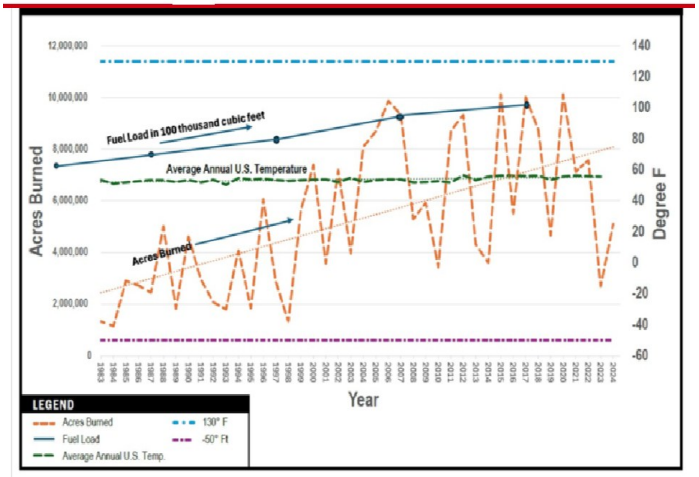


Wildfires, Los Angeles

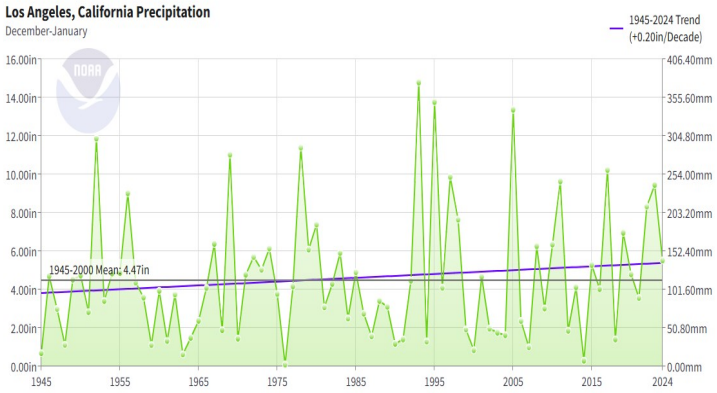
Worldwide the area burned per year by wildfires is decreasing.



In the US area burned decreased significantly from 1930 to 1983, but then started to rise. This rise has occurred primarily on the West coast, in particular, in California.

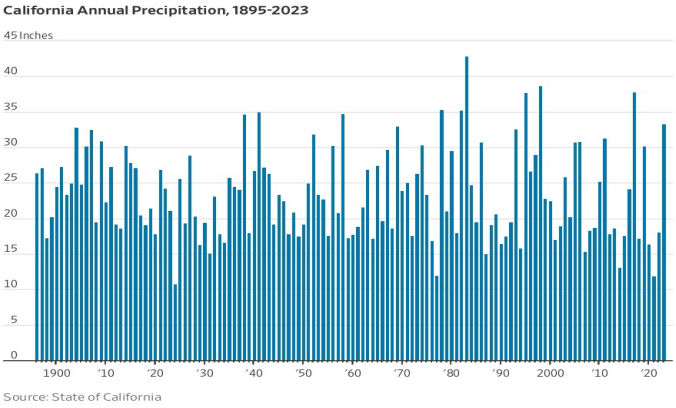


Acres burned correlates with fuel load, the build up of dried out grasses, brush, and trees that are particularly susceptible to burning. The Los Angeles area had two unusually wet winters 2022-2023 and 2023-2024, which were followed by a dry start to the 2024-2025 winter. This resulted in a massive build up of fuel load ready to burn.



Los Angeles winter precipitation has increased very slightly since 1945 with very high variability from year to year.

California annual precipitation has declined slightly since 1895. It also shows high variability from one year to the next. Precipitation cycles in California are driven by the El Nino/La Nina cycle. This variability significantly increases fire risk by increasing plant growth in rainy years, which then becomes fire fuel in dry years.



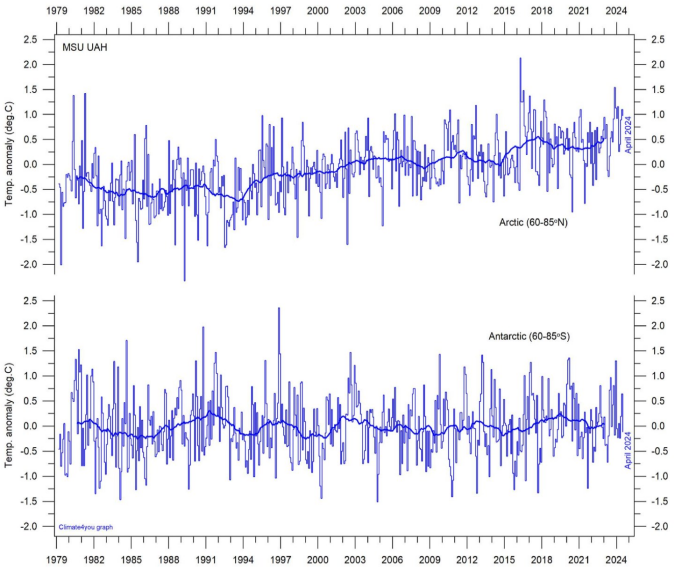
California has failed to follow standard forest management practices such as controlled burns, supervised logging, brush clearing, sheep/cattle grazing, and fireproofing power lines. Scott Stephens, a professor of forest science at U Cal Berkeley, opines, "20-25% of wildfire damage comes from climate change and 75% from the way we manage lands and develop our landscape." (And see the CLISCIPOL Science Topic: Wildfires).

Wind and Solar Battery Backup

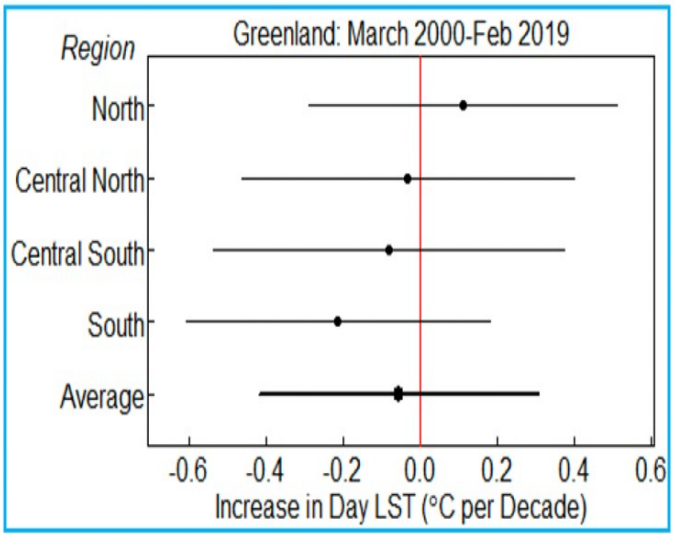
On January 16, 2025, a massive fire broke out at the Moss Landing Power Plant in California. This is one of the world's largest battery storage plants, intended to provide power to back up intermittent wind and solar generation. This is the fourth fire at this facility since 2019. And the battery back-ups presently being built can typically provide power for only four hours. Wind and solar can have periods of close to zero electricity production for days. Current battery technology can not reliably provide the necessary back-up for intermittent wind and solar.

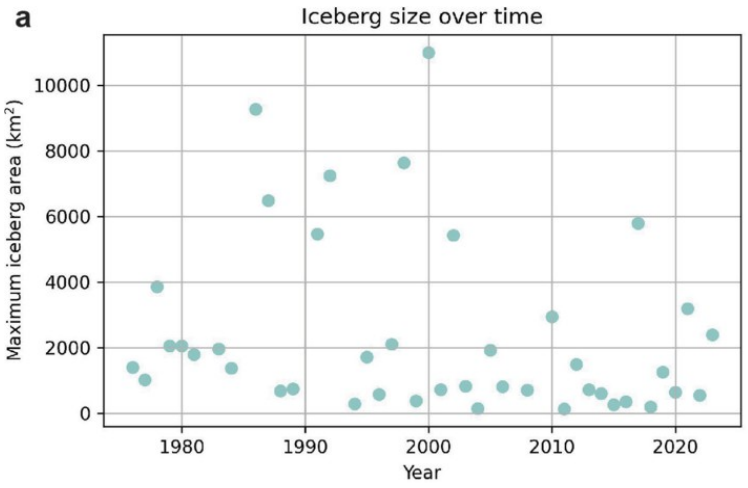
Icebergs, Polar Ice Melting

Over the last year there have been a number of articles in the popular media commenting on "the world's largest iceberg, the colossus A23a," which is bigger than the state of Rhode Island. But a recent study shows no trend since 1976 in the size of the largest iceberg per year.

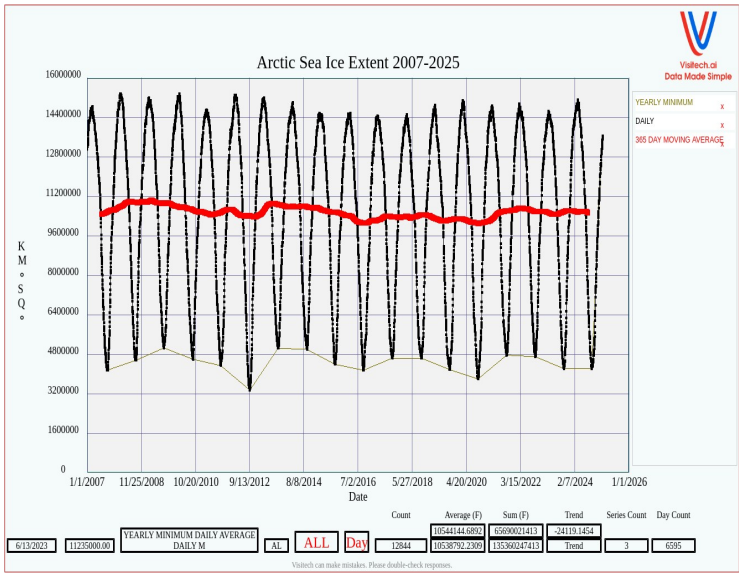


The prior graph shows that Arctic Troposphere temperatures have been rising. But, while Arctic sea ice declined significantly from 1990 to 2007, it has shown virtually no change since 2007.





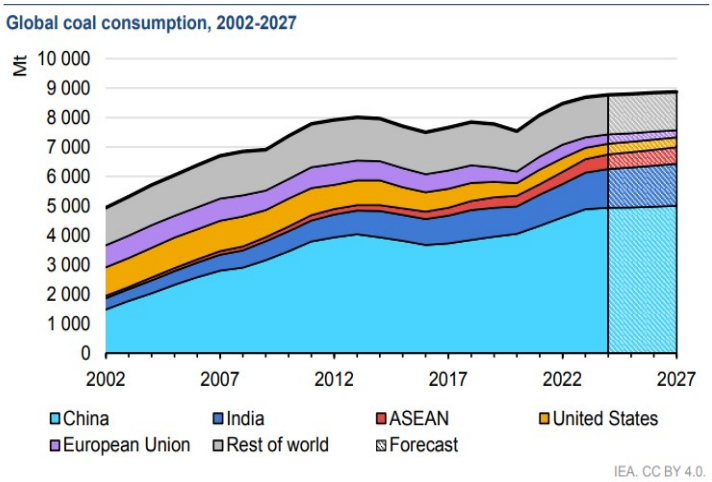
Ice melts at 32 F. The mean annual temperature of Antarctica's interior is -46 F. The warmest part of Antarctica is the coast, which averages 14 F. The temperature of Antarctica has not increased since 1979. With these temperatures it is impossible for significant amounts of Antarctic ice to be melting.

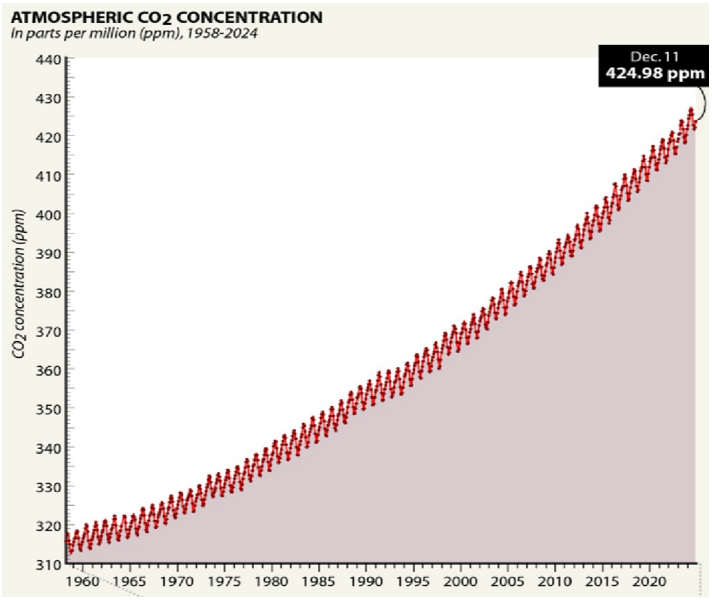


Greenland surface temperatures slightly declined from 2000 to 2019. The CO2 Control Knob Theory can not explain what has been happening in either of the two polar regions.

Energy Transition?

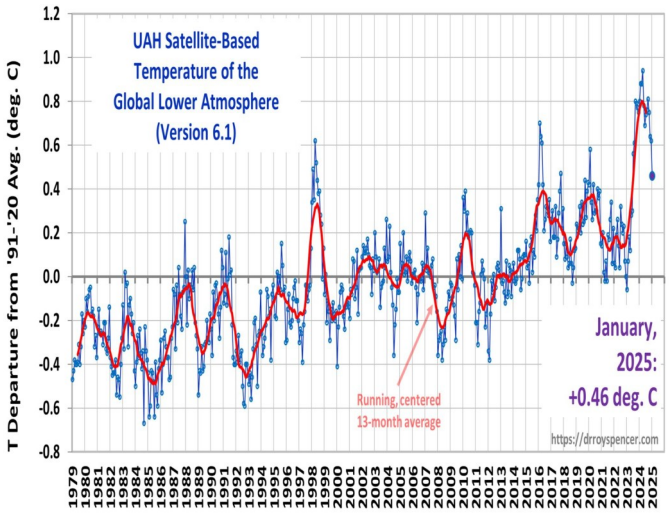
Despite all the trillions of dollars that have been spent on the so-called Energy Transition, coal consumption around the world continues to increase, particularly in China and India.





And the atmospheric CO2 concentration through the end of 2024 continues its steady rise without any noticeable pause. Even the 6% reduction in human CO2 emissions in 2020 -2021 due to COVID failed to cause any pause in this steady rise.

The world temperature spiked in 2023-2024. Now the recent data through January 2025 shows the spike clearly subsiding. January 2025 was colder than January 2024. The CO2 Control Knob Theory can not explain the spike and its subsidence. Scientists are not agreed on the spike's cause or causes. No one knows how much further the temperature will continue to drop.



Vineyard Wind turbine blade that was damaged on July 13 captured by a New Bedford commercial fisherman. Photo courtesy of Anthony Seiger

New England Off Shore Wind

In July 2024 a blade broke off one of the completed towers in the Vineyard Wind project off of Nantucket. The resulting federal investigation has found that dozens of the installed blades are defective and must be removed and replaced. The Net Zero goals that have been legislated by the New England states depend on massive amounts of offshore wind. It is becoming increasingly obvious that offshore wind will fail to provide the energy needed by New Englanders at reasonable cost.