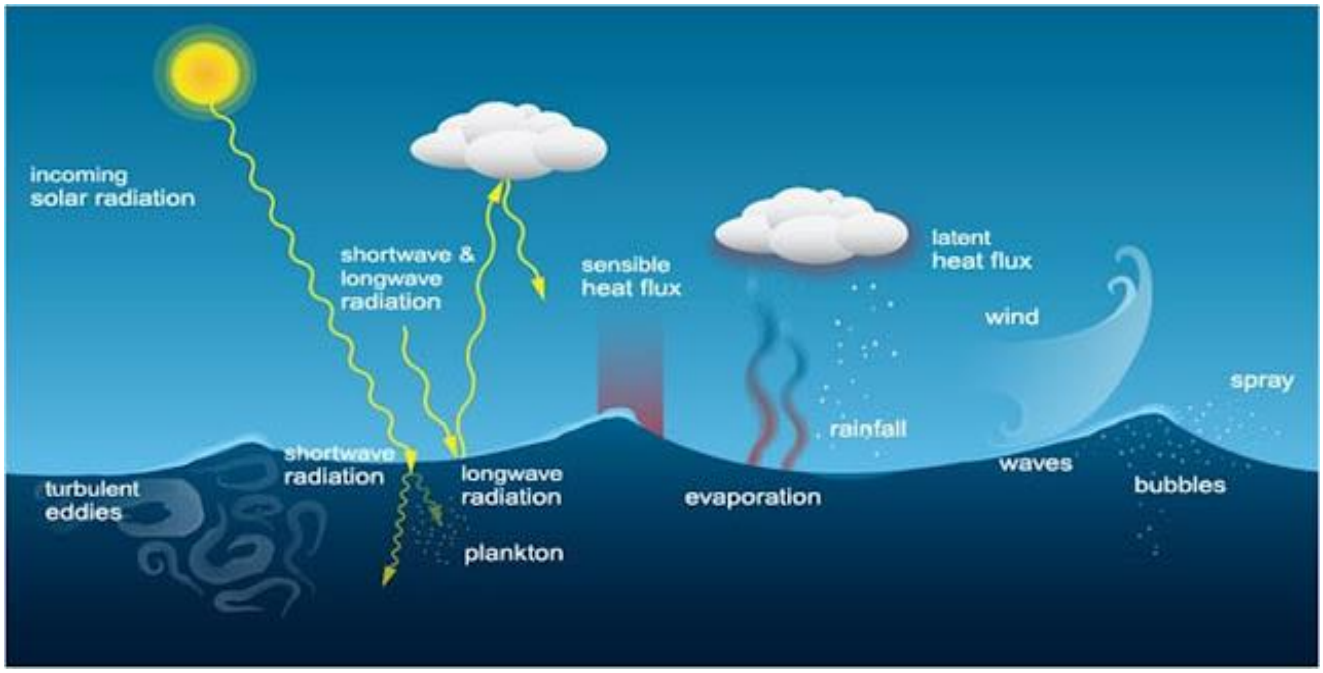
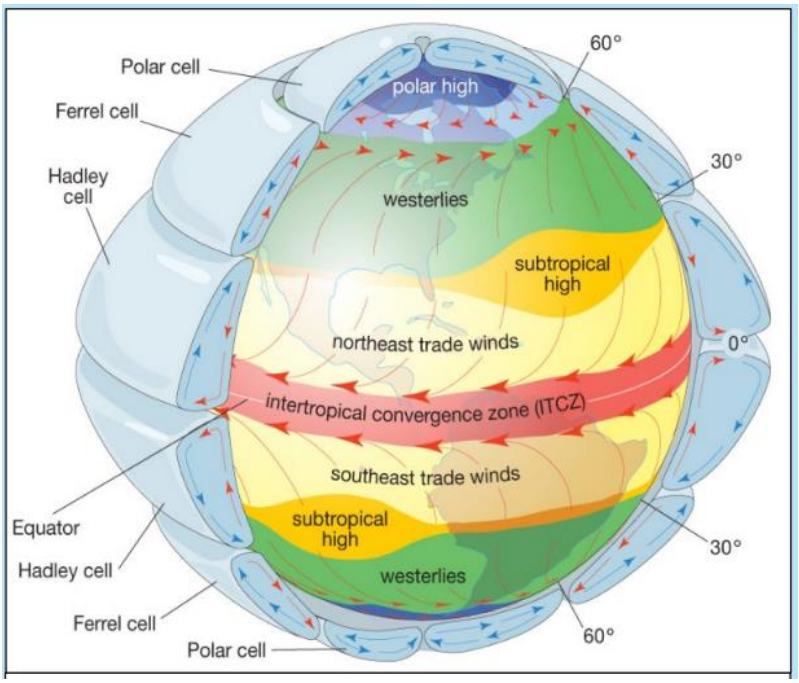


Climate Science – A Sceptical View



Bob Close – November 2022

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Introduction

As an experienced earth scientist and successful minerals explorer now retired, I have analyzed climate issues and studied the global science behind climate alarmism since 2007 when it became an overt political issue affecting Australia. I have since realized the ongoing dire political and economic consequences for my country and other wealthy 'Developed' Nations, due to UN inspired regressive energy mitigation policies, such as Net Zero, that will only hurt not help our modern society.

I wrote this 'Sceptical View' to discover and explain in simple terms the truths and uncertainties comprising the complexity of climate science, and share this knowledge with those who can't otherwise make sense out of it. Also, to understand why many intelligent people believe or support the UN Anthropogenic Global Warming (AGW) hypothesis, and that humans can really affect climate change.

This climate science review presents explanations for the reality of modern benign natural climate change as opposed to CO2 caused AGW theory. I acknowledge and respect traditional environmental/ecological values and support environmental humanism. However, this review exposes the misuse of noble causes and science by enviro-political activists. They seek to eliminate reliable but supposedly 'dirty' nuclear and fossil fuel energy, the basis for our modern technological prosperity, in the mistaken belief that rising human CO2 emissions are causing significant climate change. Nothing could be further from the truth, but the politicians and the public are told "the science is settled".

Instead, the activists inane misconceived fears about a catastrophic future global warming episode, has generated unsustainable 'renewable' energy policies that are causing social and economic chaos. They have created an unnecessary energy crisis, industrial economic decline and further impoverishment of the disadvantaged in Western society and also Undeveloped Nations. We must learn to be a lot smarter than this, and stop the political control of climate science that has so badly impacted UN policy decisions and government funded global research including Australian agencies such as the CSIRO & the BoM.

This review is dedicated to scientific sceptics who have over the years been prepared to challenge the prevailing orthodoxy or scientific paradigm such as 'Earth centric cosmology' or 'AGW' theory, and change the opinions of those in Authority, by the weight of observational evidence that does not verify the theory and cannot be refuted. This scientific process, not analysis of computer models, is paramount for knowledge to progress towards truth and utility for understanding of the natural world.

I am shocked at the shoddy practices and sometimes blatant corruption of climate observational data and unfit models, by scientists, academics and public servants who promote AGW theory and perhaps 'post-normal' science to suit their own moral, political and/or financial agendas. Consequently, the reputation of scientific methodology is now at stake. Fellow geologist Professor Ian Plimer (2009) said

"The hypothesis that human activity can create global warming is extraordinary because it is contrary to validated knowledge from solar physics, astronomy, history, archeology and geology."

In this analysis, I review key climate science topics and summarize current documentation, to show where observations challenge AGW thinking, with the overall aim to demonstrate where possible that the CAGW hypothesis is scientifically falsified. In any event, historical observations demonstrate the unremarkable cyclic nature of benign modern warming. Consequently, there is no impending climate catastrophe nor urgent industrial CO2 emissions crisis; that requires the current unjustified massive global political and economic remedial action. Forget the overrated, misused precautionary principle. Instead, we should be more concerned about future global cooling of the planet into the next glaciation event, rather than further natural beneficial global warming later this century.

After some 40 years and $billions spent on research, the UN IPCC has failed to prove its case for AGW or that CO2 is driving any current or past climate change. Instead, it relies upon complex subjectively tuned computer models, with 'hot' climate projections that consistently fail to match observed benign reality. Modern cyclic climate warming, minuscule as it is (1^{o}C since 1900), could almost entirely be a result of natural variability driven primarily by our sun, the Earth's orbital characteristics and ocean currents.

Whilst rising CO2, from vegetation sources, oceanic degassing, volcanoes and industry, is physically constrained from having much heat impact, it is proving highly beneficial by helping plant fertilisation and greening of the planet. Thus, the runaway hothouse AGW hypothesis is rejected by physics and Earth's long-term history. It is axiomatic that CO2 related climate mitigation activities have had no positive impact.

In the political sections, I outline the sceptical viewpoint, present a summary of Australia's current deplorable modern climate science record, review global climate politics and related fearmongering environmentalism that initiated the current climate controversy. It is important to understand why the unwarranted climate alarmism started. Who promoted it and how it led to the expensive and ruinous 'renewable' energy/low emissions debacle we have today; where Australia, as well as African and other poor Undeveloped nations are losers, whilst China, Russia and India are current winners**.**

Improvements in global prosperity, security, environment and population control can be achieved, if we help third world nations out of poverty and generate higher living standards through effective industrialization utilizing fossil fuel baseload power and newer technologies.

Few know the UN IPCC and related NGOs are actively using dubious climate and environmental alarmism, as cover for a transnational, sociological and economic reset. Purportedly for historical social justice and wealth equality for Developing Nations. Whilst their un-costed Paris Agreement climate policies are weakening Western nations economic resilience as planned, sadly Undeveloped Nations are also suffering, and none of these decarbonization activities can have any climate benefit. Therefore, these immoral and entirely wasteful polices must be rejected, along with their political agenda.

Finally, I suggest that human adaptive capacity is vastly larger than any conceivable climate change risks. Instead, we should continue to focus upon improving our technology and energy resilience for human prosperity, whilst for now enjoying the benefits of fossil fuels and our slightly warmer climate.

1. Temperature and CO2 Data

Firstly, a minor portion (5-10%?) of rising CO2 since 1950, shown in Figures 1, 4-6**, is generated by fossil fueled industrialisation, mainly in the northern hemisphere. But the major natural CO2 sources are plants, forests plus ocean (and volcanic) degassing due to solar transient warming after the Little Ice Age (LIA) in the 16-18th Centuries**.

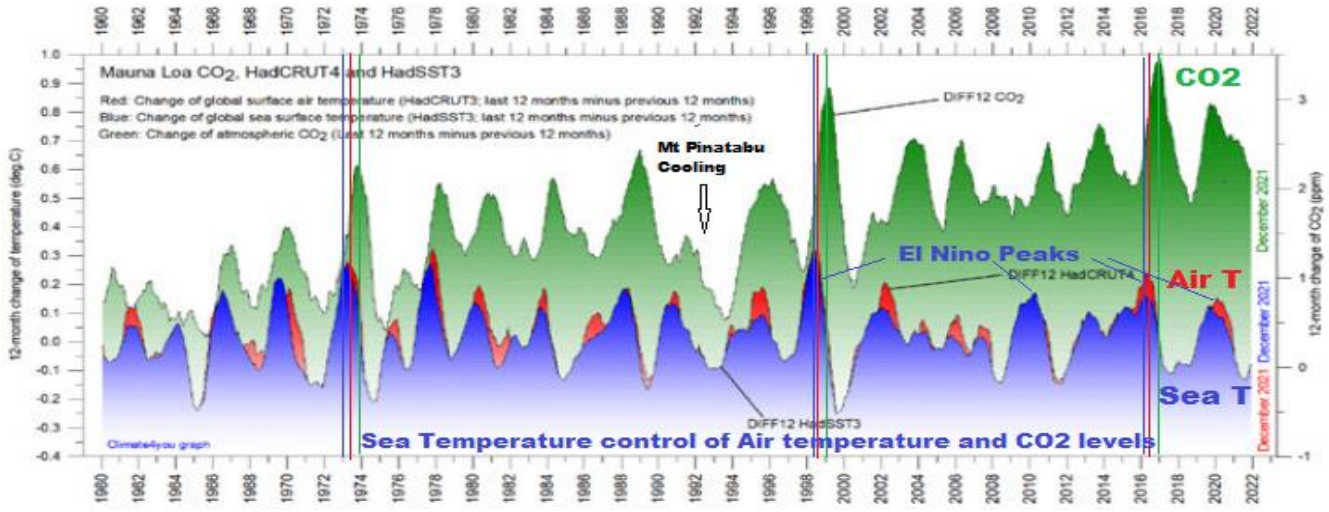


Figure 1. UK HadCRUT global CO2 and sea/air temperatures, after Humlum 2020.

As shown in Figures 1&5b warm tropical oceans degases significant CO2 into the atmosphere, thus the related CO2 peaks occur 9-12 months after global temperature peaks of the sea and then air respectively. Thus, the cause-and-effect relativity is the same as observed during the Pleistocene Ice ages from ice core data, where air temperature rise always precedes CO2 rise, not the obverse claimed in AGW theory. **It is critical to understand that the modern CO2 rise since the LIA, from any source including industrialization, is not driving global temperatures, or historical warming, but may help amplify or modulate long-term climate trends**.

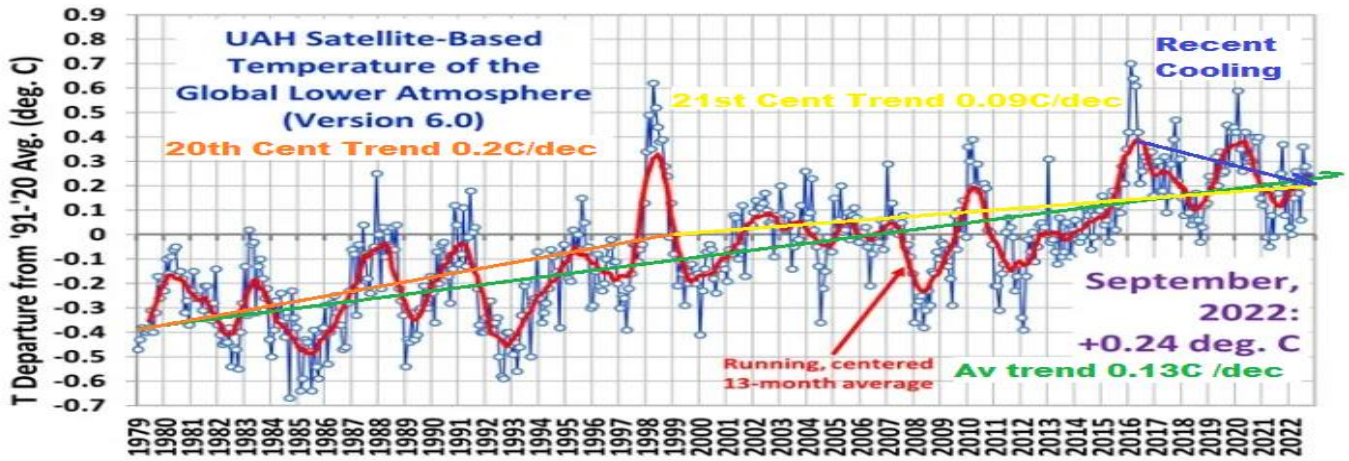


Figure 2. Annotated UAH satellite temperature record graph for September 2022.

What is most interesting in temperature datasets, refer Figures 1-8, is that **the steady rise in CO2 has no direct correlation with episodic mild warming up to 1C over the last century; with an average rate of 0.13C/decade in the last 42 years**. This correlation disparity is shown best in Figures 4 & 5a by the cooling 0.35C) from 1945-1975 when industrial emissions were ramping up, and then the **warming hiatus or Millennium Pause from 1999-2015 shown in Figures 2 & 3, when little warming occurred whilst CO2 rose steadily from 390-410ppm (Figures 1 & 4)**.

Figures 2 and 3 show the 2010, 2016 & 2020 El Niño (EN) peaks have increased the gentle warming trend (yellow/orange) of 0.09C /dec since 2000 during the Pause. **La Nina's in 2018 & 2021-22, brought the curve 0.5C down almost back to the Pause levels shown in Fig 3. So, there has been little significant warming (0.2C) or any acceleration this century, thus fatally weakening the AGW alarmist case**.

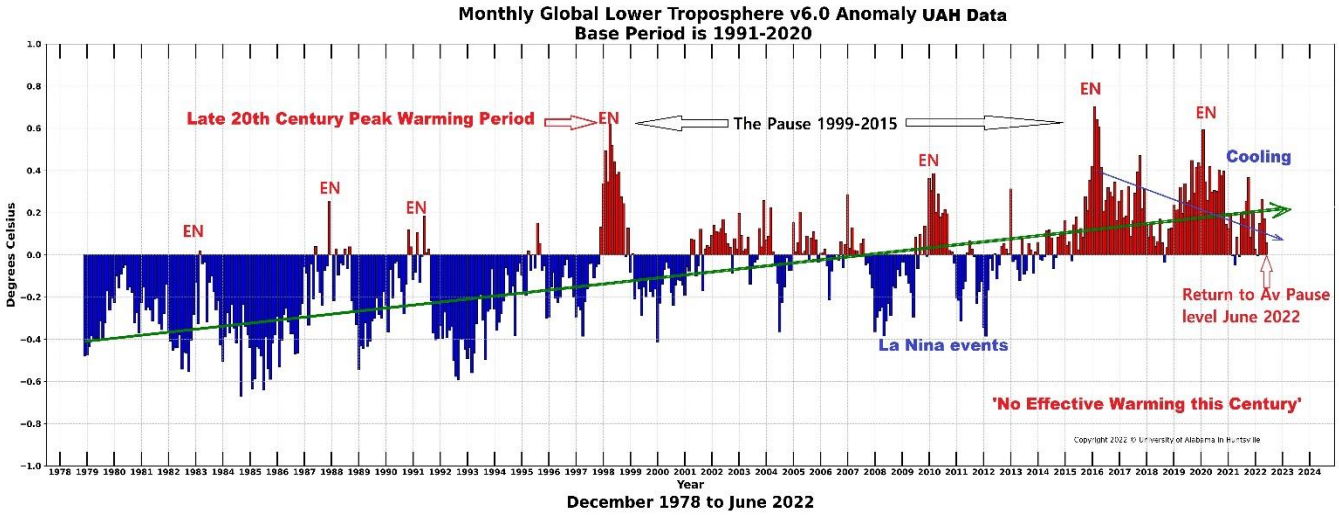


Figure 3. UAH satellite warming trend (green) to June 22 slowed from +0.14 to +0.13 C/dec since 2000.

(+0.12 C/dec over the global-averaged oceans, and +0.18 C/dec over global-averaged land).

In Figs 2 & 3, **the overall mean (green) trend at 0.13C/dec extrapolated to 2030 gives an increase of only 0.3C since 2000**. This mild warming is well below the arbitrary 0.5C level the Intergovernmental Panel on Climate Change (IPCC) claims will cause an environmental crisis. However, they cannot factually demonstrate how, why nor where this supposed crisis will dominantly happen. **Given the cooling since 2016, by 2030 we will definitely know whether sustained mild global warming or cyclic cooling as predicted by the Chinese, is in the offing over the next 20 years**.

The Pause (Figures 3, 4) occurred between two major El Niño Southern Oscillation (ENSO) warming events in 1998 & 2016, these events are not CO2 caused. Instead, they are associated with displacement and overturning of tropical Pacific Ocean currents that are solar and wind driven based on paleoclimate evidence. The 2015 IPCC Assessment Report AR5, said **the Pause or hiatus after 1998 "*is attributed in roughly equal measures to a cooling contribution from internal variability and a reduced trend in external radiative forcing*".** This medium confidence expert judgement has been contradicted by several numerical experiments suggesting "**the *hiatus can be fully explained by the internal multidecadal variability of the tropical Pacific Ocean i.e., ENSO. Thus, after the 1998 El Niño peak event, natural variation has dominated over any GHG forcing*.**"**

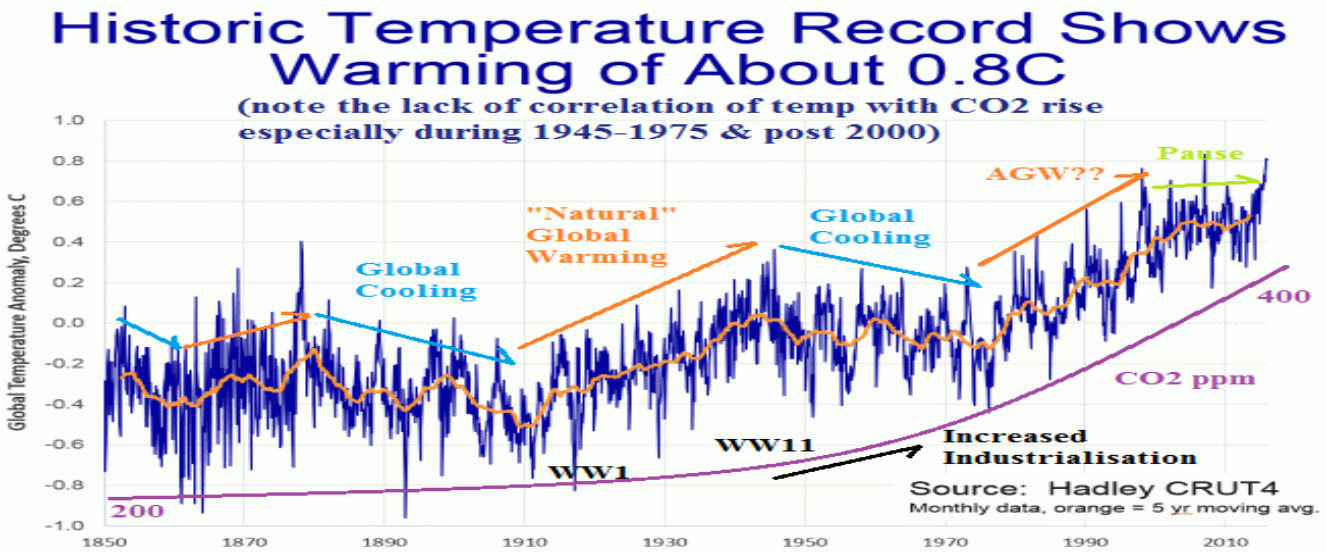


Figure 4. Original UK HadCRUT global temp data and CO2 rising trend. (Overall trend is 0.47C/century).

This data shows the cyclic nature of post LIA warming over 165 years, which up to 1975 climatologists say is solely due to natural forcing; the last 45 years are supposed to be dominated by the greenhouse (AGW) effect. **However, CO2 only correlates to temperature when it is in phase with solar warming from 1975-1998. This is strong evidence that natural variation dominates**, particularly during the Pause when one third of the modern CO2 emissions took place during this very recent relatively quiet temperature period, unpredicted by the IPCC.

Humlum (2008) in '**Climate Reflections'** referring to this HadCRUT data, said "***The whole warming period since 1908 may therefore be seen as representing one single development****, not showing a new trend corresponding to the rising atmospheric levels of carbon dioxide … after the mid-1970s. Thus, the simplest interpretation of the global temperature increases since 1908 is that* ***it represents mainly a natural recovery from low Little Ice Age temperatures, without clear anthropogenic impact****".*

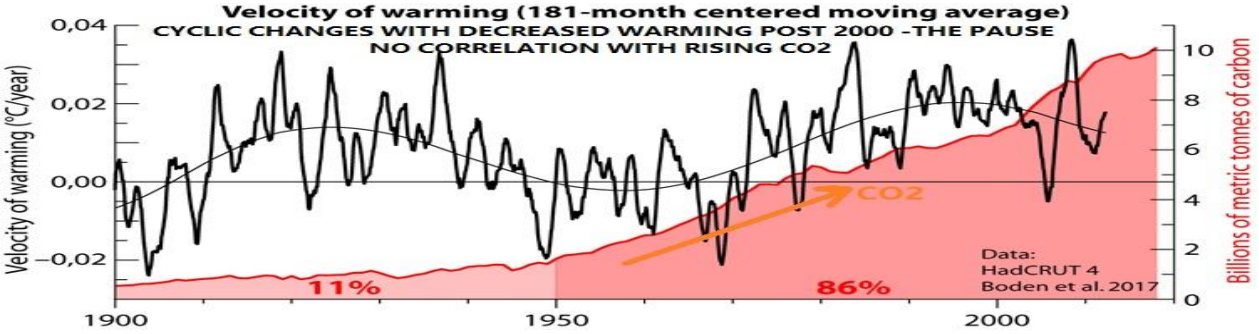


Figure 5a. The Velocity of solar warming cycles and CO2 increase over the past 120 years.

Figure 5a shows that **after coincident rising CO2 and global temperature between 1970-98, the 60-year solar cyclic warming rate decreases after 2000, and is clearly independent of the strong CO2 rise.** The latter is most likely related to minor anthropogenic and dominant natural sources. The 1910-1945 solar related warming cycle as well as the 1860-1880 warming are considered natural by most climatologists.

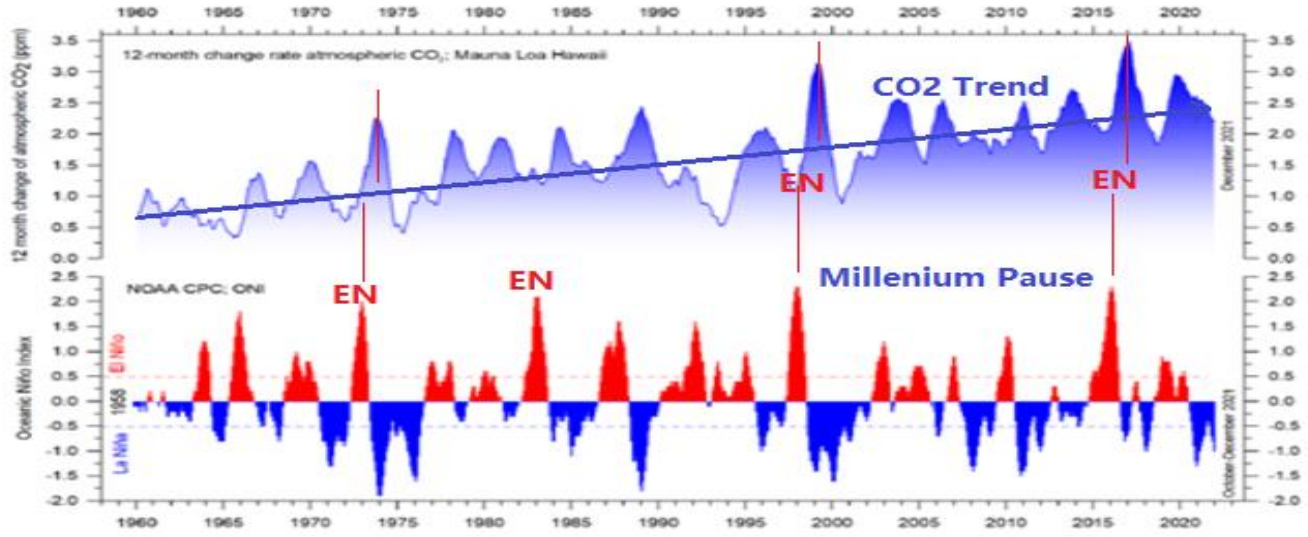


Figure 5b. NOAA data on El Niño-La Niña events since 1960, Mauna Loa CO2 levels, after **Humlum 2020.**

This shows clearly that **solar related El Niño events produce subsequent (12 months later) atmospheric warming related CO2 peaks that are not primarily related to the AGHG process**. **There were more and generally stronger El Niño events during the 1978-1998 warming period than during the subsequent Pause** of 1999-2015, but rising CO2 continued unabated throughout except around 1991-3 presumably due to the Mt Pinatubo temperature disruptive volcanic event.*"* This is strike 3 against the AGW mantra.

Since 1965 when CO2 was 330ppm, there is a general positive but inconsistent correlation between temperature and CO2, suggesting other factors are operational, such as CO2 input from industrialization or internal variability including ocean current oscillations and related temperature - cloud cover changes. **This leads Humlum to suggest that "*CO_2 cannot have been the dominant control on global temperatures since 1958.*"** *"Had CO_2 been the dominant control, periods of decreasing temperature (>2-5 years) with increasing CO_2 values should not occur, the recent breakdown of the association around 2000 (*during the Pause*) should not occur, either."* Consequently, "***the complex nature of the relation between global temperature and atmospheric CO_2 since at least 1958, represents an example of empirical falsification of the (*AGW*) hypothesis ascribing dominance on the global temperature by the amount of atmospheric CO_2****"*.

It should be noted however, that Stratospheric water vapor (WV) - (high level clouds) that the IPCC considered "*an important driver of decadal global surface climate change in the 1990's*" decreased by about 10% after 1998 as stronger La Niña events predominated. **The IPCC now admits "*Although Earth's climate is undoubtedly warming, weather-related and internal natural climate variability can temporarily overwhelm (human related) global warming in any given year or even decade, especially locally*."** Thus, warming slowed during the Pause despite stronger CO2 atmospheric input, this is another nail in the AGW coffin.

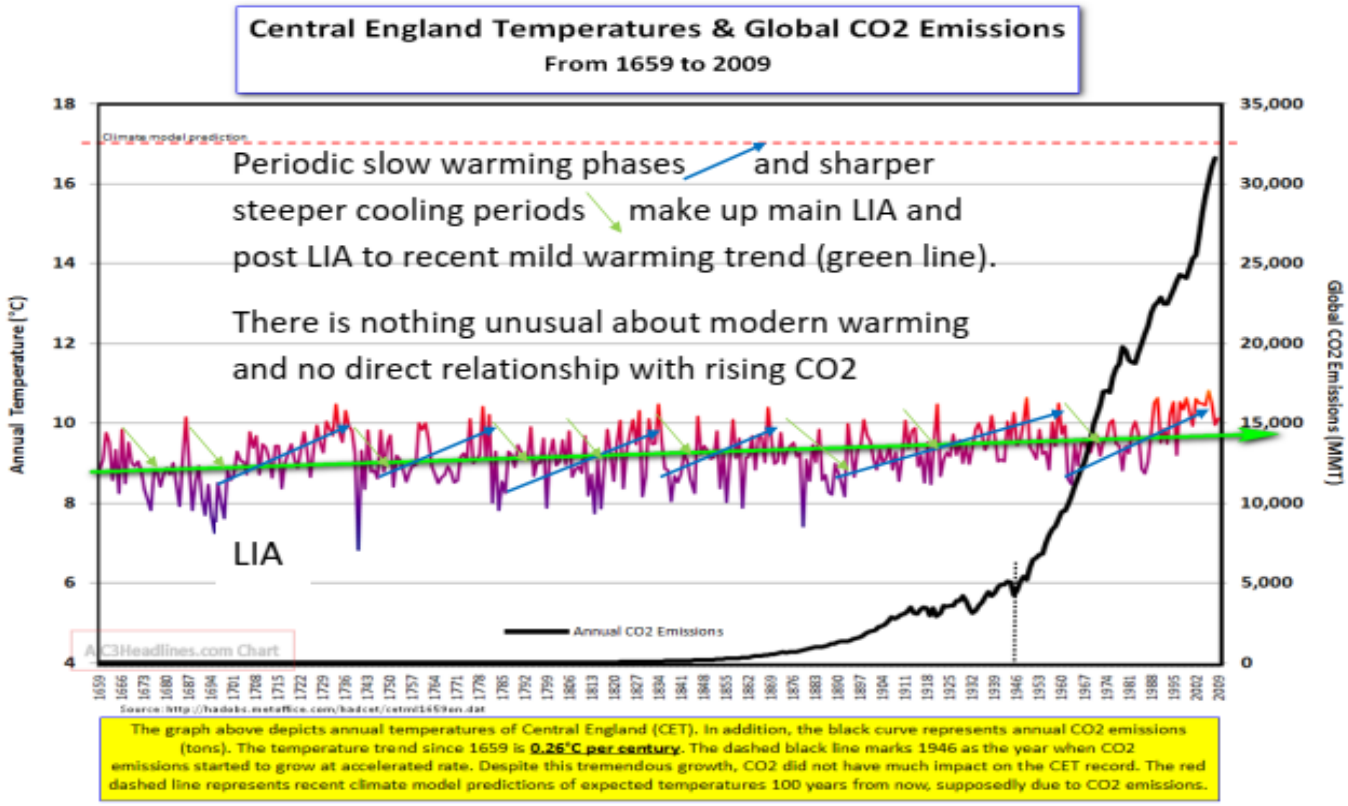


Figure 6. Historical 350-year long cyclic Central England temperature data and atmospheric CO2.

The recurrent multidecadal temperature oscillation shown in Figure 6 may be related to the 60yr Atlantic Multidecadal Oscillation (AMO) possibly caused by solar driven thermohaline ocean circulation variability. This data also shows that **the rise in CO2 does not have any significant effect on Central England temperature trends over the past 170 years of industrialisation** since the LIA, when temperatures rose just 1C from 9C to 10C. **This 350-year record documents at least seven warming periods of 1-2C reaching above the Av 9-10C temperature trend, these occurred throughout the slowly warming period out of the LIA that averaged 0.26C/century. Modern warming at 11C is therefore not unusual in this context, being just a continuation to these natural cyclical events.**

This historical UK data further questions the IPCC GHG warming paradigm as modern CO2 levels rise whilst global warming trends are slow and weak, with recent peaks and troughs following El Niño and La Nina episodes respectively. El Niño Southern Oscillation (ENSO) is the main source of interannual tropical climate variability with a flow on effect on global temperature and precipitation. **Paleoclimatic evidence supports a relationship between ENSO with higher solar activity related to more and stronger El Niño events**.

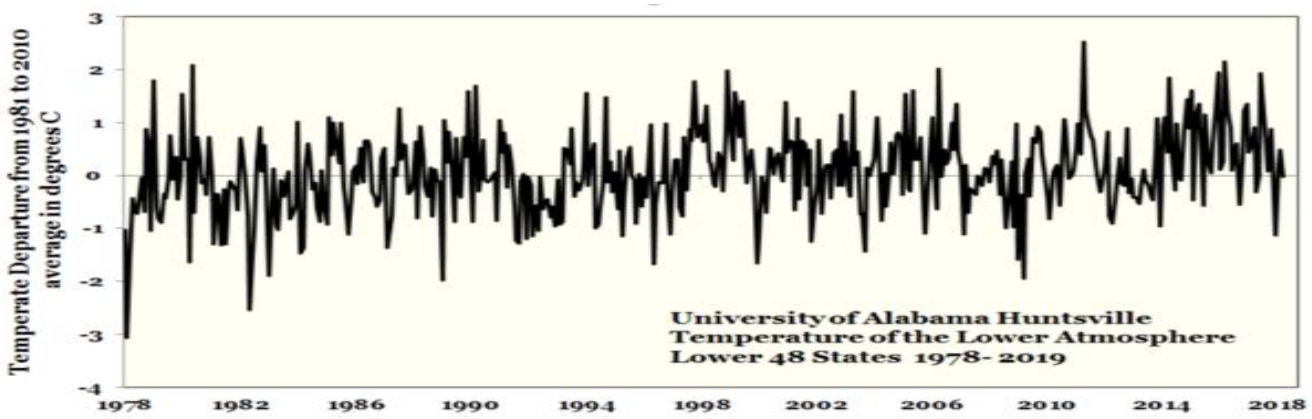


Figure 7. UAH satellite air temperatures, +/-2C variation for the contiguous United States of America.

This University of Alabama Huntsville (UAH) data shows an effective flat or slight warming trend over 40 years during peak CO2 activity, **there is no dangerous greenhouse signature here or accelerated warming.** The El Nino events are relatively muted compared to the global trends shown in Figure 3.

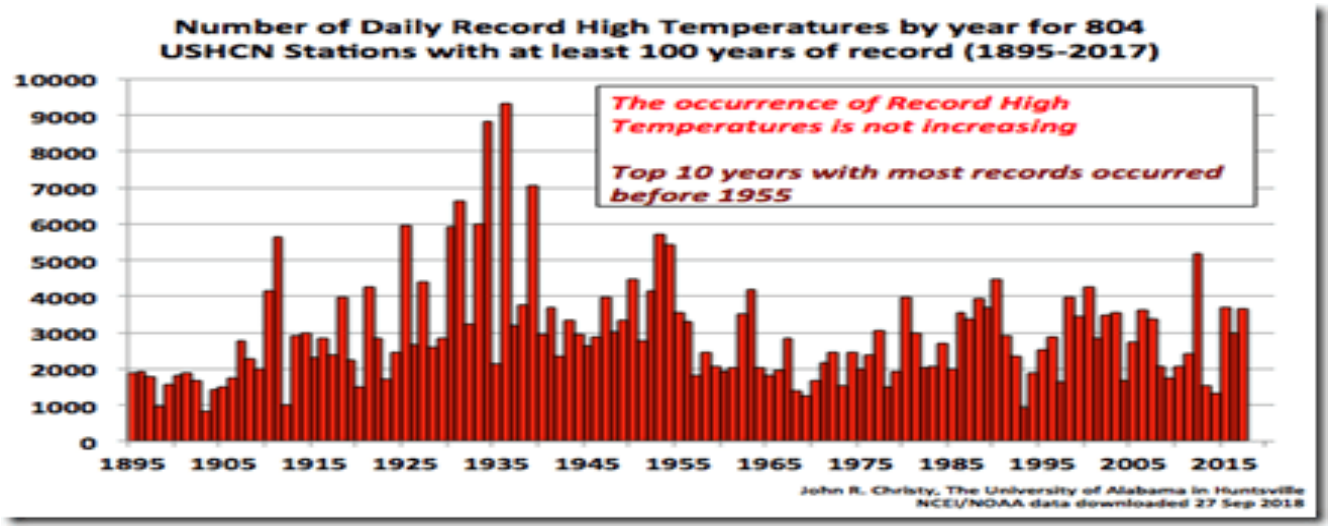


Figure 8a. USHCN Record: ground based high temperature data for the contiguous United States.

A major warming trend without AGW occurred from 1905 to 1940, with half the peak historical temperature site records in the US taking place in the 1930's during the famous dust bowl era drought, minor peaks also occur in 1910 and 1955. **There is no trend to increased warming in this key data.**

In contrast, the ground National Oceanographic and Atmospheric Administration (**NOAA)** raw and **adjusted temperature data in Figure 8b, shows the original data followed the USHCN trends, but this has been strongly adjusted down to show reduced warming since 1900, but stronger warming after 1980. This new data reflects dubious homogenization adjustments related to the urban heat island effect (UHIE)**. The data manipulation here initiated by Director James Hansen is designed to eliminate peak natural US warming in the 1930's compared to modern warming post 1975 that they infer is dominantly human related and GHG driven.

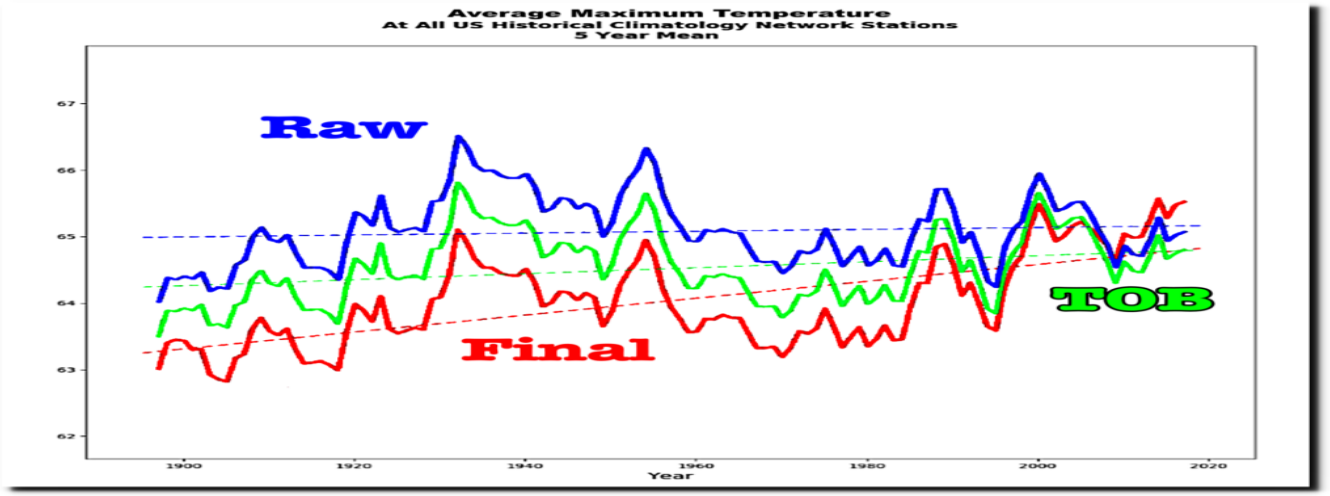


Figure 8b. NOAA USA Average Maximum Temperature Data. Effects of recent Adjustments.

Temperatures prior to 1980 are cooled more than 1C degree, and recent temperatures are warmed nearly 1 degree. This is extreme data manipulation!

2. Temperature records and Data manipulation

Now that we have seen the results of some of the key climate datasets relating to modern and historical records, we need some further background on climate measuring systems before discussing climate data manipulation.

Temperature variance has an almost dipole character between the northern and southern hemispheres due to the dominance of oceans in the south. The mid-latitudes in the Northern Hemisphere (30°N to 60°N) have more recorded temperature extremes than anywhere else, due to the concentration of land area there, higher populations and historical recording stations. **Before 1850, the station coverage was so poor especially in the southern hemisphere, and the oceans as to be unusable for estimating a global average temperature.** However, by 1900 there were more standard measurements with Stevenson screens, and wider global coverage including **Australia that had a well-functioning regional system since the 1860's.**

Historical climate and climate changes are mostly local, not necessarily global, or even hemispheric, in fact according to the Köppen–Geiger climate classification system there are thirty climate zones and sub-zones. So more active dispersed recording stations such as the 4000 Argo buoys and well-spaced rural localities should provide more accurate, comparable long-term land and ocean results regionally and globally. However, a quasi-global observation system has been operating for 50 years, since the advent of satellite measurements of the atmosphere and oceans**. Historically prior to the satellite data, the US ground measurement database, partly shown in Figure 8a, was considered the gold standard**.

There are five main global temperature records: the first three are ground based estimates, the combined UK Hadley Centre/Climatic Research Unit Temperature (HadCRUT), National Climate Data Centre (NCDC) and NASA's Goddard Institute for Space Studies (GISS) (GISTEMP). **The last two are satellite based, the National Oceanographic and Atmospheric Administration (NOAA) (RSS) and the University of Alabama Huntsville (UAH**) records that start in 1979. All three global surface averages and the new Berkley Earth data depend on the same underlying land data archive, the Global Historical Climatology Network (GHCN).

As explained by Hausfather (2014) "*the way that NCDC, GISS, Hadley, all calculate so-called temperatures, is by taking station data, translating it into anomalies by subtracting the long-term average for each month from each station (e.g. the 1961-1990 mean), assigning each station to a grid cell, averaging the anomalies of all stations in each grid cell for each month, and averaging all grid cells each month weighted by their respective land area*" However, not only does this "Gridded Anomalies" method cool the past it increases the warming trend.

The GISS and UAH satellite data measures atmospheric temperature anomaly levels directly, more frequently and consistently, plus is considered less subjectively manipulated; thus, a more accurate metric of global trends than the ground measurements. Wishart (2009) noted " ***NASA has admitted that there's no quality control check on incoming temperature data every day, from the rest of the world, there's now… no rational reason left to trust NASA, NOAA or the UK Met Office announcements about record temperature readings***."

McKitrick (2010) reported further data trouble with "***The number of weather stations providing data to GHCN plunged in 1990 and again in 2005. The sample size has fallen by over 75% from its peak in the early 1970s****, and is now smaller than at any time since 1919."* Unfortunately, many of the retained sites are at airports and few are in remote or highland areas, **the main result has been increased urban heat bias - the well-known UHIE by this selection process. McKitrick concluded "*there are serious quality problems in the surface temperature data sets that call into question whether the global temperature history, especially over land, can be considered both continuous and precise***."

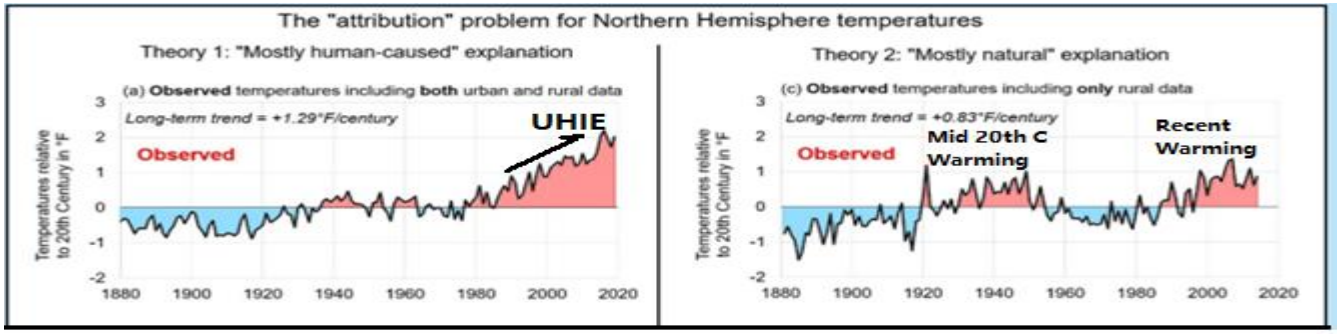


Figure 8c. USHCN US temperature data comparing rural sites (right) and urban sites with UHIE.

The above data shows the combined temperature record for all sites emphasises the modern UHIE

warming trend from 1980 on the left. Whilst on the right the rural only sites shown much stronger relative warming in the first half of the 20th Century from 1925-1950, cooling to 1980 then stronger warming peaking at 2010 with slow cooling to 2020. **This rural data compares well with the UAH satellite data, thus highlighting the UHIE problem**. In 2019, a Tennessee Oak Ridge Laboratory study concluded that proximity to heat sinks such as buildings and parking lots artificially warmed the air temperature recorded at a weather station, the effect was stronger at night. In urban environments the majority of the global warming signal can actually be found with winter and nighttime temperatures.

Watts (2022) in '**Corrupted Climate Stations'** found "*the (US) COOP network's temperature records—at both USCHN and GHCN stations-have been substantially corrupted*." A review ***"finds approximately 96% of U.S. temperature stations (evaluated) fail to meet what the NOAA itself considers to be "acceptable," uncorrupted placement, with bias related to the heat sink effect, or other heat sources.*** *Good data exists in the unperturbed stations demonstrated by Watts et al. in 2015, but* ***the amount of bad data from poorly sited stations overwhelms the accurate data from well-sited stations."***

However, Watts found only a slight warming trend of 0.12C/dec from representative unperturbed stations in 37 States, which matched closely to the UAH's satellite-derived temperature record, validated by balloon data. This 'rural' warming trend interestingly, "*is approximately half the claimed rate of increase promoted by (the IPCC and NOAA) many in the climate science community*. ***These findings strongly undermine the legitimacy and the magnitude of the official consensus on*** **(USA)** ***long-term climate warming trends."***

Scafetta, (2021) said "***Properly correcting for the UHIE is therefore of the utmost importance****, and the unfortunate observation is that contrary to all logical requirements,* ***adjustments have been made the other way round, by making unadulterated pristine rural stations match heat contaminated urban stations, this generates an artificial 'global warming' signal*****.** " This type of data manipulation is a global issue that needs correction. ***."*** Tree ring experts reported "No current tree ring-based reconstruction of extratropical Northern Hemisphere temperatures that extends into the 1990s captures the full range of late 20th century warming observed in (*NOAA's*) instrumental record**.**" **It appears that cooler tree ring temperatures are more accurately measuring natural climate change compared to UHIE temperatures**.

Steirou and Koutsoyiannis (2012) in an analysis of worldwide data homogenization acknowledged that a procedure is needed to correct real errors, but concluded "**Homogenization practices used until today are mainly statistical, not well justified by experiments and are rarely supported by metadata**. It can be argued that they often lead to *false results*: with *natural features of hydroclimatic time series regarded as errors and are adjusted." "In relation to the USA data the temperature trend correlates much better with the heat ventilating cycles of Pacific Decadal Oscillation and the Atlantic Multidecadal Oscillation."*

Richard Lindzen (2009) agrees, saying *"That corrections to climate data should be called for, is not at all surprising, but that such corrections should always be in the 'needed' direction is exceedingly unlikely.* ***Although the situation suggests overt dishonesty, it is entirely possible - that many scientists feel that it is the role of science to vindicate the greenhouse paradigm for climate change as well as the credibility of models. "***

Therefore, due to the inherent urbanization heating bias, plus subsequent data point interpolation and historical homogenization adjustments in **most current ground based global temperature datasets, their quality is in question, particularly NOAA, Berkley also the Australian BoM and New Zealand NIWA datasets**. The satellite data (i.e., the lower-troposphere temperature) responds more strongly to the natural influence of E*l Nino/La Nina* and to volcanic eruptions, than does the surface temperature. **So, independent observers and sceptics prefer the least adjusted UAH satellite temperature datasets or early versions of the USHCN and UK HadCRUT data.**

Judith Curry and John Bates have accused NOAA of inappropriate methodology, "***the need for establishing credibility for climate data sets, and how NOAA NCDC/NCEI have failed to follow NOAA's own policies and guidelines,*** *not to mention the guidelines established by Science for publications. NOAA*

has a responsibility to undertake best practice in looking after national climate data," especially if it is to be relied on for subsequent major political decisions on climate change action.

In a 2021 book '**Climate Rationality: From Bias to Balance'** by Jason Scott Johnston, he accuses "***the scientists who have led NASA GISS for the last 40 years, do not view the production and funding of climate science as an enterprise undertaken merely to advance human understanding of global climate, but rather as an activity to support precautionary climate policy***." However, the 1940-1975 global cooling was acknowledged by Hansen (1981) who stated "***The major difficulty in accepting this (GHG) theory has been the absence of observed warming coincident with the historic CO2 increase****. In fact, the temperature in the Northern Hemisphere decreased by about 0.5°C between 1940 and 1970 during a time of rapid CO2 buildup*, *but* ***the continuous (GISS) adjustment of the tampered time-series is becoming so obvious that it is just plain ridiculous*****." This is a serious admission of malpractice.**

The 'Climategate'' scandal involved emails related to the University of East Anglia's HadCRUT database adjustments and methodology. Plimer (2017) noted, when the BBC interviewed its head scientist, **Phil Jones admitted *our "surface temperature records are in such disarray they probably cannot be verified or rectified," if that is the case "then it is not science. The data is useless. No conclusions, trends or predictions can be made."*** This is also a rare example of *'Mia Culpa'* from the activist climatologists.

It is beyond doubt that many of the world's surface temperature datasets are locally affected by the urban heat island effect, and/or corrupted by inappropriate homogenization techniques designed to show human related global warming, (think Climategate, Michael Mann's fake hockey stick data, Al Gore, Flannery and Hansen's failed predictions, NOAA homogenization and the BoM's maladjusted Acorn dataset). It is concluded in general from the empirical data that, apart from obviously manipulated records**, no dangerous or unusual temperature trends have actually occurred over the past 150 years.**

3. IPCC Reports

The IPCC is a UN political organisation set up in 1980 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) to collate the science of climate change, and prove a dominant anthropogenic cause via CO2-inspired unusual and dangerous future global warming.

Over the last 40 years they have failed to provide sufficient evidence of the former so have used simplistic General Circulation Models (GCM's) to infer the latter. But these also failed, or are running 'too hot'. **The key objective of the IPCC is "*to provide governments at all levels with scientific information that they can use to develop climate policies. The IPCC is not required to properly evaluate natural climate change factors or uncertainties,* *and modelers exclude forcing's and feedbacks that run counter to their mission to find a human influence on climate.*" In fact, t**he IPCC's "consensus-driven" approach to science is hindering the scientific understanding of climate change. Therefore, it is no surprise that its *Summary for Policymakers* reports written or edited mostly by climate activists are**

for the most part unsound, politically biased and definitely not scientific best practice. As Ian Plimer said "*the role of science here is to define climate reality not just to vindicate the AGW paradigm*."

Poyet (2021) noted, "**the *IPCC only exists to produce documents intended to provide information selected, adapted and presented to justify political actions. It is the custom and practice of the IPCC for all of its Reports to be amended to agree with its political summaries.*** *And this is proper because all IPCC Reports are political documents although some are presented as so-called 'Scientific Reports'. Each IPCC Summary for Policymakers (SPM) is agreed 'line by line' by politicians and/or their representatives, and it is then published after that the so-called 'scientific' reports are amended to agree with the SPM*." The majority of scientists had little or no direct influence on the conclusions expressed by the IPCC.

"***IPCC's reports have been subjected to withering criticism by scientists and authors almost too numerous to count, including even high-profile editors and contributors to its reports***," Idso, et al (2016). Particularly harsh criticism of IPCC has come from the Amsterdam-based Inter Academy Council (IAC), which is made up of the presidents of many of the world's national science academies. **They deplored that, politicians decide which scientists are allowed to participate in the IPCC writing and review process**: "*political considerations are given more weight than scientific qualifications", and "**the summary for policymakers is the product of late-night negotiations among governments and is not written by scientists***." Idso, et al (2016) conclude, "***it is difficult to understand why IPCC reports still command the respect of anyone in the climate debate. They are political documents, not balanced or accurate summaries of the current state of climate science. They cannot provide reliable guidance to policymakers, economists, and climate scientists who put their trust in them***."

In 2012, the late Prof Bob Carter reported "***The IPCC has been beset by accusations of malfeasant behaviour ever since the publication of their second Assessment Report (AR) in 1995,*** *when final conclusions were drawn about the human impact on warming without reference to (*or approval by*) the group of scientists charged with advising on this issue*." Subsequent IPCC scandals have included "*the inclusion of Mann's famous, statistically incompetent hockey stick record of global temperature in the 3rd AR (2001), revelations that **the 4th AR (2007) was gravely flawed because of its mixing of advocacy and science, and the exposure of strongly sub-standard procedures of refereeing and editing of all these volumes by the Climategate affair***". The latter was based on leaked UEA's HadCRUT personnel emails. Unfortunately, there has never been a comprehensive independent scientific review of any IPCC report by a government or by an official audit body. **The IPCC rarely admit any of their science is wrong despite every forecast since 1990 having been invalidated,** this reflects the overt politicization of their reports.

In their 2011 AR, IPCC scientists toned down their alarmist language and said "*they cannot determine if mankind's influence will result in more, or fewer, extreme weather events over the next thirty years or more*." *"Projected changes in climate extremes under different emissions scenarios generally do not strongly diverge in the coming two to three decades, but these signals are relatively small compared to natural climate variability over this time frame. Even the sign of projected changes in some climate*

extremes over this time frame is uncertain". **In a 2011 survey, only 19% of U.S. meteorologists saw human influences as the main or sole driver of climate change,** this comprehensively rejected the supposed 97% consensus view of climate scientists, that was later debunked but is still in the media.

The **IPCC's regular scientific AR's show that the uncertainties in climate science have not improved** and the likelihood of 'dangerous' warming and climate extremes has actually receded over the past 20 years. In contrast, the *Summary for Policymakers* reports aimed at policy development, state ever stronger certainty about the immanent dangers of human induced climate change. In one case a leading author was an employee of the advocacy group Greenpeace International. Thus, **the political activists in charge at IPCC are ignoring their own scientific conclusions and now rely on extreme GCM's like RCP8.5 and the latest CMIP6 models to scare humanity into acquiescence to their global agenda**.

Similarly, t**he IPCC have chosen 2°C as the global threshold beyond which future warming is considered dangerous, this value is entirely arbitrary** and was proposed by the World Wildlife Fund, an environmental advocacy group, as an artificial political goal meant to frighten the public, rather than as an informed scientific opinion. **The 2C limit was changed by the IPCC in 2015 to 1.5C after the observational ECS came in about 1.7C, meaning we would likely never reach 2C, so we had to have a lower scary threshold**. This is typical of the outlandish alarmist behavior by the IPCC, the limits have no empirical basis in fact and so cannot be scientifically justified, therefore they are mere conjecture by those in authority with an agenda to push.

Given the fact that daily temperature ranges throughout the world are commonly 10-20°C, and global average surface temperature varies seasonally almost four degrees every year; how is it possible that a few degrees of warming particularly in polar regions could cause a global catastrophe? **This is illogical scaremongering, besides the global temperature has already reached nearly 1.5 C above "pre-industrial" in April 1998 and Feb 2016 during EL Nino peaks with no climate disaster happening!**

In order to try to get a more balanced scientific approach on climate, the U.S. Committee on Science, Space and Technology in 2012 called on the UN IPCC "*to immediately adopt specific protocols to prevent further conflicts of interest, politicization, and manipulation*" in its summary reports. However, this was ignored, presumably because the political message was more important than the real science. As a result, Professor Berkhout head of KNAW the Netherlands Academy of Science in 2020 stated: "*Why do scientific institutions not warn society that all these climate-change doom and gloom scenarios have little or no scientific justification**? I know that there are many scientists around the world who doubt or disagree with the IPCC's claims.*"* **It is interesting that the range of future scenarios and policy options considered by the IPCC does not include any assessments that disagree with the IPCC reports.**

In summary, despite wishful thinking by the IPCC climate experts, they have not presented in AR's 1-6 unequivocal scientific evidence of a significant anthropogenic contribution to mild rising global sea and air temperatures measured over the last 40 years. Thus, the historically unprecedented rising CO2

(from natural causes and industrialisation) over the past 150 years cannot be a main driver of recent or historical global temperature trends. **Importantly, the current least adjusted global datasets do not exhibit unusual or accelerating warming or sea level rise that could lead to a climate crisis, it is just business as usual with natural cycles for climate Earth**.

4. IPCC Climate Models

The IPCC General circulation models (GCM's) utilising the anthropogenic GHG theory, rely on an initial CO2 warming effect and subsequent large positive feedbacks of up to 80% from water vapour (WV)/clouds, to ramp up temperatures 1.5-4.5C, with estimated equilibrium climate sensitivity (ECS) to CO2 of 2-5. These warming values were based on the assumption that the sun's irradiance and relative humidity (RH) plus cloud development of the atmosphere, remains quasi-constant as the globe's temperature increases. So, the models give unrealistically large upper-tropospheric WV increases for the doubling of CO2's restriction of IR energy escape to space. In fact, Stratospheric water vapor levels decreased about 10% after 2000 during the recent Pause.

The IPCC 5th Assessment Report in 2015 regarded the 8.5 scenario red in Figure 9a below, to be our most likely future, and it was referred to as the business-as-usual scenario despite great uncertainties in the data. **However, it is becoming increasingly apparent that the 8.5 scenarios are implausible**, as models with high positive feedbacks (ECS >3) produce too much predicted warming than our most accurate temperature measure, the satellite data shown in Figure 9b.

These **exaggerated ECS feedbacks have caused all the IPCCs models and forecasts to fail within 10 years of their inception, except perhaps the more moderate scenario RPC2.6 (dark blue) that would deliver an Av warming of 1.0˚C by 2100. Positive cloud feedback is the main component of the model-computed ECS, even though clouds cannot be modeled, and must be parameterized so the IPCC just assume a high level, what a joke!**

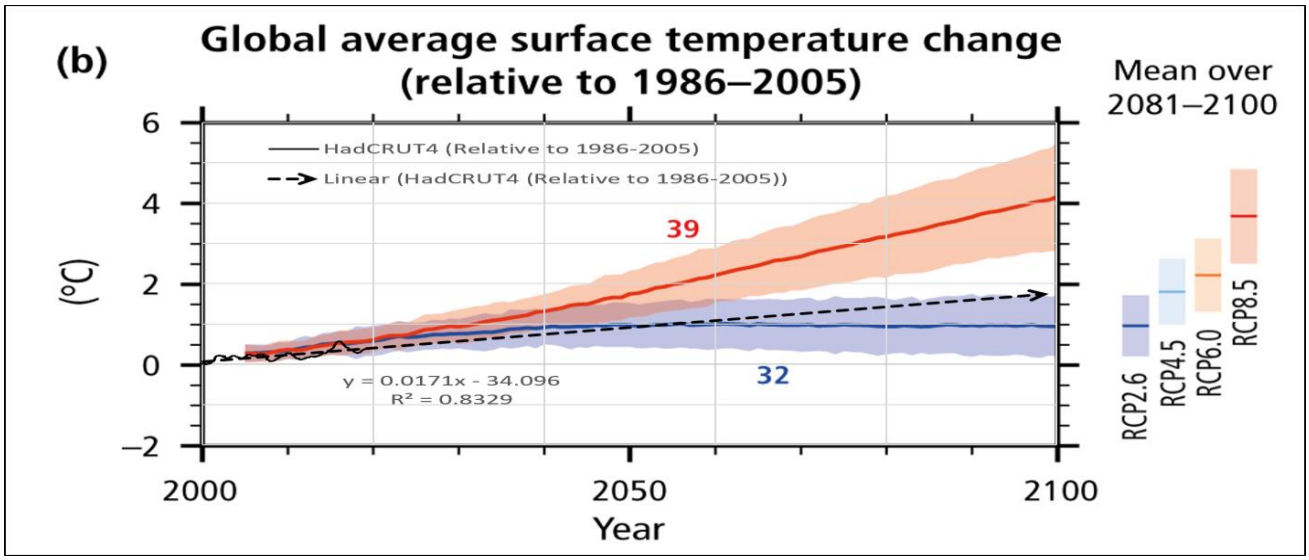


Figure 9a. HadCRUT4 global temperature data and representative climate model projections.

In Figures 9a,b **the clear separation of the model data and observations since 1997 indicates that the rate of global warming is less than half the mid-range rate originally predicted by IPCC in 1990**, in effect **the models are warming at twice the actual rate and the main reason is the high ECS (>2) entrenched in these models**. We know this because the Russian INM model in Figure 9b (lower thin blue line) that somewhat tracks the satellite data, has high inertia from ocean heat capacities, low forcing from CO2 and less water for unrealistic positive feedback.

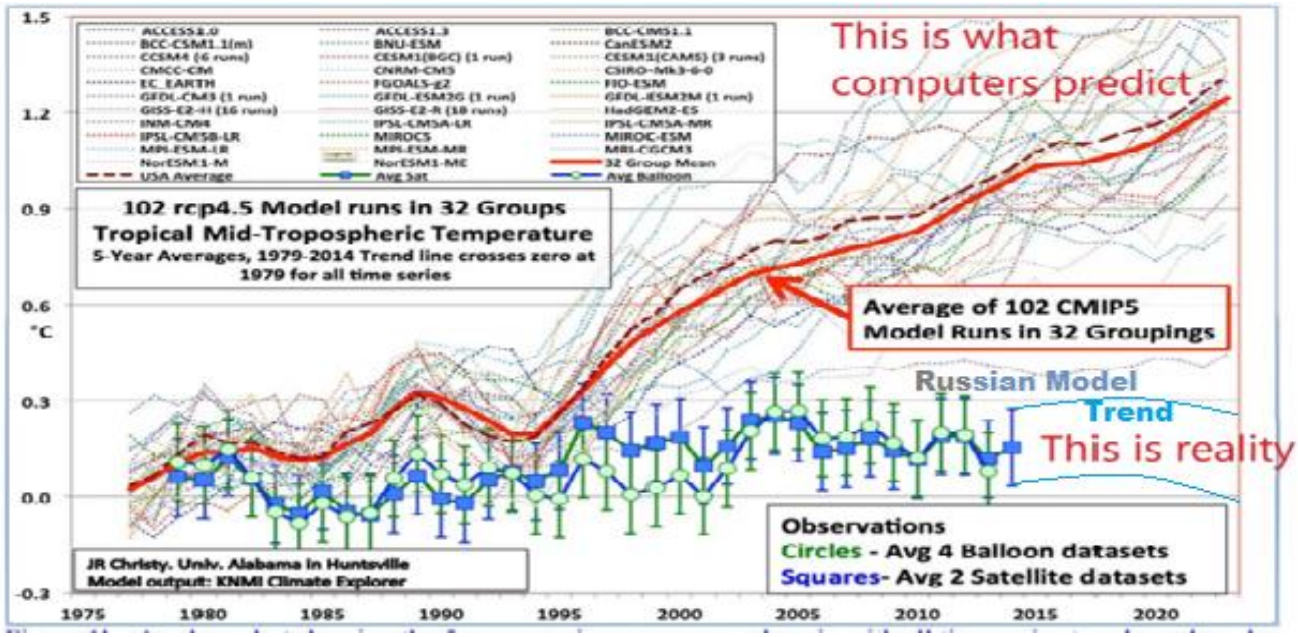
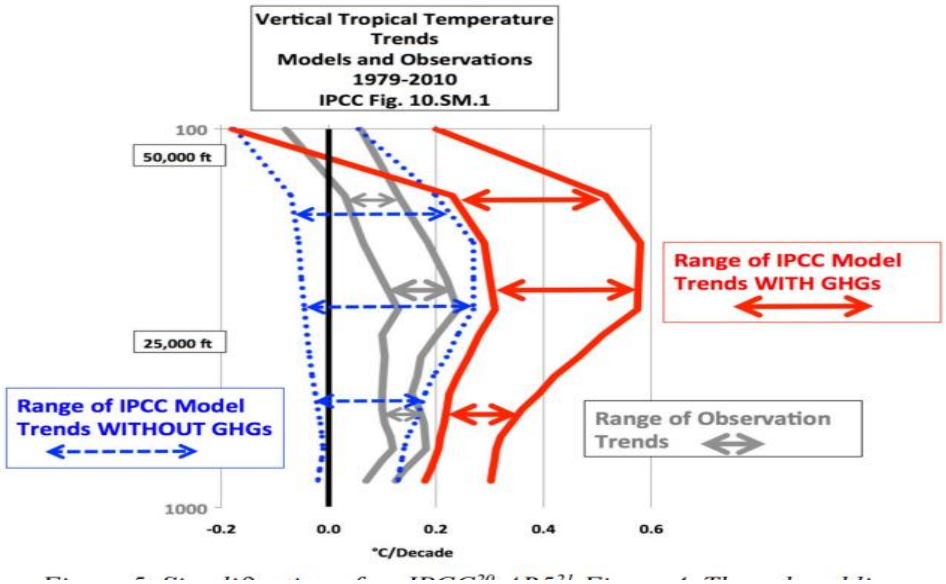


Figure 9b. CMIP5 model projections and modern observation data, after Christie (2018).

Evidently, only the Russian model of 102 current GCM's mean temperature shown in Figures 9a & 9b,comes close to measured reality. However, climatologists mostly ignore it because it doesn't fit their

preferred alarmist climate scenario of high ECS. This is biased antiscientific practice on their part.

According to their CMIP5 & 6 models, Mid-Tropospheric temperature rise in the tropics is a key fingerprint of GHG -CO2 warming. However, because this effect has never been observed, this would normally in science be sufficient to reject this whole AGW hypothesis. In support of this conclusion, a recent review brief by '**The CO2 Coalition'** of the IPCC's 5th AR, GCM data showed that **human CO2 emissions cannot be an important factor in raising global air temperatures, because only models (blue) that left out such GHG emissions correlated with physical observations of tropical temperatures, at all levels in the atmosphere, refer Figure 9c.** This is a direct contradiction to the major IPCC conclusion that observed changes could only be modeled properly if extra GHGs were included.



Thus, the models, as hypotheses, failed a simple "scientific-method" test applied to this fundamental, climate-change variable.

In addition, when back **Figure 9c.** tested, **the models do not "predict" the 1910-1940 warming or the 1945-1970 cooling, therefore these models cannot be taken seriously.**

Simplification of IPCC20 AR521 Figure 4 – Tropical atmospheric temperatures and GHG effects.

Poyet (2021) said "*these are just models that strive to stick to reality, mimicking somehow some properties of the real world. But* ***the more complex the system modeled is, the less it can pretend to accurately represent the reality****.*" Climate over time is a very complex natural system especially in relation to cloud development, no climate model fully employs the known physics. Therefore, it is easy to understand why these models fail consistently to match current measured climate datasets. The IPCC have failed on several key aspects of AGW-climate change predictions, related to the emission levels that remains in the atmosphere and critically the effect of emissions on temperature change.

Whilst we still have a steep learning curve about the mechanisms of climate change including solar and orbital influences, we cannot expect GCM's to exhibit a sufficiently accurate approximation of the real world to have any useful predictive value. It is worth noting that no climate model has proven able to provide skillful predictions of climate at a regional level (i.e., Australia) never mind globally. Surprisingly in 2021, IPCC policy statements finally admitted these models are not yet fit for purpose,

and should not be used for policy development purposes until they are better tuned. However, globalist politicians are not listening, they have their agenda and are bent on implementing it.

Nakamura (2018) in '**Confessions of a Climate scientist'** says "***The models are 'tuned' by tinkering around with values of various parameters until the best compromise is obtained*" this is highly subjective and barely scientific**. "*With values of parameters that are supposed to represent many complex interactive climate processes being held constant, many nonlinear processes in the real climate system are absent or grossly distorted in the models. To believe that simulation models, that lack important nonlinear processes in the real climate system, can predict at least the sense or direction of the climate change correctly is delusional*." *"All climate … models have many details that become fatal flaws when they are used as climate forecasting tools."*

Jansen et al., 2007 suggest "*Even though a great deal is known about glacial-interglacial variations in climate and greenhouse gases, a comprehensive mechanistic explanation of these variations remains to be articulated. Similarly, the mechanisms of abrupt climate change (for example, in ocean circulation and drought frequency) are not well enough understood, nor are the key climate thresholds that, when crossed, could trigger an acceleration in sea level rise or regional climate change. Furthermore**, the ability of climate models to simulate realistic abrupt change in ocean circulation, drought frequency, flood frequency, ENSO behaviour and monsoon strength is uncertain.** Neither the rates nor the processes by which ice sheets grew and disintegrated in the past (Ice Ages) are known well enough".*

In 2011 **Dr. Roy Spencer, a principal research scientist at the UAH** and U.S. Science Team Leader on NASA's Aqua satellite, reported that ***"real-world data from NASA's Terra satellite contradict multiple assumptions fed into alarmist computer models." "The satellite observations suggest there is much more far more longwave radiation (and thus heat energy) lost to space during and after warming than the climate models show**," also confounding AGW "atmospheric humidity and cirrus clouds are not increasing in the manner models predicted."*

Curry (2021) in her blog '**Climate Etc'** stated "*Complex computer simulations have recently come to dominate the field of climate science and its related fields, at the expense of utilizing traditional knowledge sources of theoretical analysis and challenging theory with observations*." She noted pithily *"The policy-driven imperative of climate prediction has resulted in the accumulation of power and authority around GCMs, based on the promise of using them to set emissions reduction targets and for regional predictions of climate change. However, this is unlikely to be realized based on the current path of model development*." In other words, GIGO!

Sanjeev Sabhlok (2019) in '**Seeing the Invisibl**e', commented "*Unlike competitive sovereign regulatory bodies, **the IPCC is extremely vulnerable to group think. It is not the right kind of body to review science** – there are too many cooks plus strong political involvement*." ***The ability to predict is probably the best***

objective measure of scientific competence and the IPCC and its global warming models have consistently failed in this, there is ample evidence that the CAGW hypothesis has been falsified."

Freeman Dyson said "*Most of us are sceptical and do not pretend to be experts. My impression is that* ***the experts are deluded because they have been studying the details of climate models for 30 years and they come to believe the models are real***." Bob Carter said this is especially the case when the IPCC scientists are government-appointed and work in close association with environmental lobbying agencies, so **their budgets and careers depend on keeping the CAGW stewpot boiling, ethics be dammed!** Christopher Essex in '**Climate Change the Facts: 2014'** discussing the IPCC models said "*Policymakers can get little from computer climate models if they fail to grasp their deep, unredeemable limitations, while being distracted by para-scientific agendas*"

Former Princeton University Professor of Physics, Will Happer, author of '***The Truth About Greenhouse Gases'***, argued in 2003 that "***the supposed environmental ill effects of increasing carbon dioxide levels are the result of calculations by flawed computer models, in which water vapour and clouds incorrectly multiply the modest direct warming up to 10 times***." "*Climate models and current atmospheric science give a myopic view on an otherwise much broader and complex Earth system, by focusing on the IR absorption properties of a trace gas which plays a marginal climate role.* ***The Earth can be viewed as a thermodynamic machine based on a complex hydrological and hydrodynamic cycle and where most of the heat is stored in the oceans*** (+20x atmospheric capacity) *with longer response time than most short-sighted poorly engineered … GCMs can handle*."

Bob Tisdale said in '***Global Mean Surface Temperature: Early 20^{t} Century Warming Period – Models versus Models & Models versus Data*** (WUWT post) "***No serious scientific entity as the IPCC portrays itself, would set its foundation on models that perform as badly as this***. *The climate models stored in the CMIP5 archive should be presented as examples of failed attempts to simulate Earth's climate, not used for government policy aimed at changing the economic basis for modern prosperity*." "Any organization that claims to be able to forecast the earth's climate without correctly considering the physical characteristics of the atmosphere and oceans is a political organization, not a scientific one."

Despite the many failings of climate models, their predictions continue to be accepted as valid or best-case scientific data, by alarmists and scientifically ignorant or complicit politicians.

In **summary, the IPCC GCMs represent modern climate astrology and have no true predictive value,** because they do not hindcast well, they assume high ECS, ignore negative feedbacks such as low-level clouds. Most importantly they dismiss natural Earth and solar variability that is known to have controlled both historical and geological era climate trends.

5. Climate Sensitivity - ECS and Feedbacks

According to the original IPCC-AGW hypothesis doubling of atmospheric CO2 will create nominal global warming of about 0.7C, but with positive climate (water vapor) feedbacks, the net result is in the range 1.5-4.5C for ECS, refer Figure 9c. These results were taken directly from the 1979 Charney report published by the US National Academy of Sciences. The postulated positive feedback effects were:

1. Water vapor increases as temperature increases, leading to further warming due to increased thermal radiation trapping, however decreased cloud cover may lead to more warming.

2. Decreased snow and ice cover, leading to more warming due to increased absorption of solar radiation because of the darker surface or lower albido.

Prior to 2010 these feedbacks hadn't been thoroughly measured and the cloud feedback was very uncertain. However, given recent measured WV feedback is very weak, the sum total of the hydrological feedbacks may actually be negative, thus, ECS must be at the lower end of the IPCC scale shown in Figure 10.

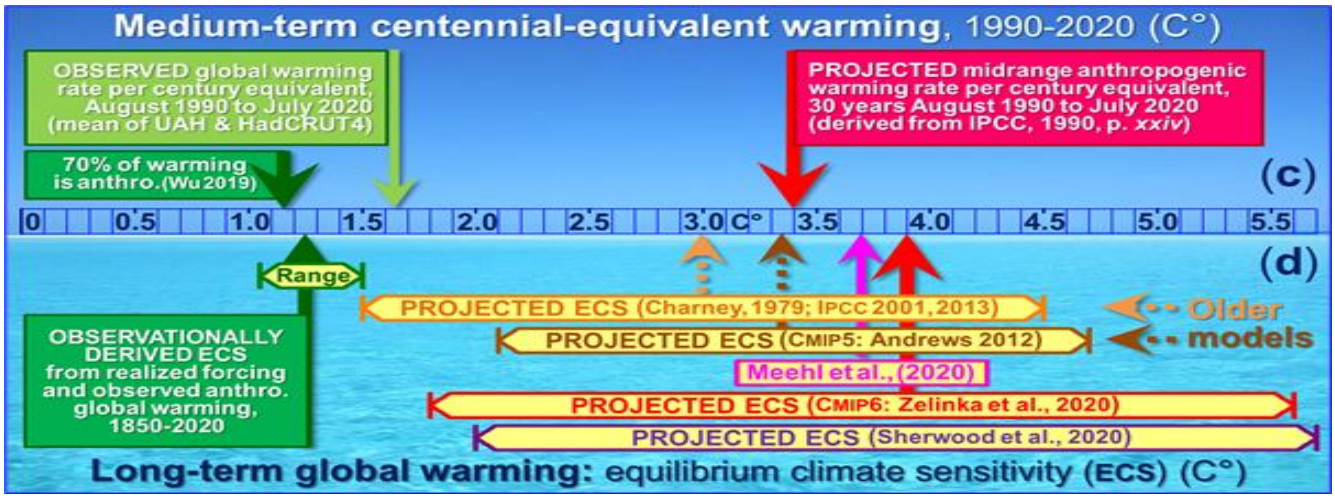


Figure 10. Measures of Equilibrium Climate sensitivity (ECS) 1990-2020, after Monckton 2020.

Karner (2002) conducted a statistical analysis for satellite-based global daily tropospheric and stratospheric temperature anomaly and solar irradiance data sets. This work indicated "**cumulative negative feedback in the Earth climate system governing the tropospheric variability during the last 22 years**. **The result emphasizes a dominating role of the solar irradiance variability in variations of the tropospheric temperature and gives no support to the theory of anthropogenic climate change**. Increasing concentration of greenhouse gases in the Earth atmosphere appeared to produce forcing too weak … to dominate in the Earth climate system."

Van Wijngaarden and Happer (2022), calculated the influence of the five most abundant greenhouse gases, water vapor, carbon dioxide, ozone, methane, and nitrous oxide, on infrared radiation. **They**

found that *"all the gases are saturated, meaning that adding additional gases will have a small impact on earth's surface temperatures.* *A doubling of CO2 would cause an increase in surface temperature of 1.4 °C, but there is no atmospheric evidence of a pronounced warming from an increase in humidity (water vapor)."* In fact, **Paltridge et al. (2009) showed decreased water vapor in the tropical lower troposphere during 1973-2006, caused negative climatic feedback, reflected in the increased long-wave radiation outgoing from the atmosphere into space**. This is opposite to the IPCC assumptions in their GCMs but supports Lindzen's 1990 feedback propositions.

Since 2011, at least 14 studies published in the peer-reviewed scientific literature provide strong evidence that climate sensitivity (ECS) to CO2 falls at the lower end of the IPCC range at 2C or below. In fact, there are a lot of recent papers with lower values, including one by Viscount Monckton (2020) where sensitivity of 1.25C was estimated, but effectively could be about 1. Lewis & Curry (2018) provided an average of 1.5 based on satellite data, this is 45% below the IPCC 's av ECS estimate, they imputed it was too low to cause any dangerous warming. So, **the IPCC AR6 upped the level of ECS from the long-standing 1.5-4.5C to 2.5 to 4C**, and Curry noted "*the low range is still way too high based on empirical data, and because the models are still running too hot."*

William Hass in 2019 commented "*As derived from first principals,* ***the Earth's convective greenhouse effect, which is a function of gravity and the heat capacity of the atmosphere, keeps the surface of the Earth on average 33 degrees C warmer than it would otherwise be. Additional (recent) warming caused by an additional radiant greenhouse effect has not been detected….there is no real evidence that CO2 has any effect on (modern) climate*** *and there is plenty of scientific rationale to support the idea that the climate sensitivity of CO2 is really zero***." So, the greenhouse effect is real, but mostly occurred Eons ago when CO2 was <200ppm, no significant modern AGW process has been detected.**

As Richard Lindzen wrote, (WUWT blog June 27/20) "*at most, doubling CO2 would disturb the earth's estimated energy budget by less than 2%. This is hardly cause for extreme concern, particularly since the* ***unknowns, such as clouds, are up to 10 times larger and may act as negative feedbacks***." Further, Haydon (2020) wrote *"In case you are wondering why the Earth did not bootstrap itself into boiling temperatures during - the Holocene Climate Optimum, - the Medieval Warm Period, - or thousands of other natural warmings, the answer is* ***that the climate is not controlled by positive feedback—where hot weather begets even hotter weather—but by negative feedback—where, as things get hotter, they shed more heat****."* **After all systems dominated by negative feedbacks are inherently stable**. *"Perhaps the most important lesson … is that* ***the heating effect of additional CO2 gets smaller and smaller as the CO2 concentration increases … more.****"* Refer Figures 11a,b for details of these physical constraints.

Jonas (2022) measured a decrease in cloud cover from 1983-2017 that was associated to an increase in radiative forcing and noted "*The climate models, which have zero or negative cloud impact on radiative forcing independently from CO2, need to take this into account in order to avoid over-estimating the influence of CO2*."

Current climate models also assume the oceans will keep absorbing heat through the surface. To assess this issue Willoughby (2021) made an analysis of the temperature of tropical ocean warm pools, and found that "***atmospheric water is able to stabilize the ocean surface temperature at about 30C by the mechanism of deep convection, with the persistency of clouds…preventing further heat uptake once the sea surface reaches 32C. Water in the atmosphere is not heat trapping but rather a temperature regulating component that increases radiating power*** *(the sum of reflected short wave and emitted long wave radiation) when the surface warms and reduces radiating power when the surface cools through reduced cloud cover enabling more surface insolation.*"

Kauppinen and Malmi (2021) say in '**No experimental evidence for the significant Anthropogenic Climate Change'** that **the IPCC "*have to leave out the strong negative feedback due to the clouds in order to magnify the CO2 sensitivity***. *In addition, this paper proves that the changes in the low cloud cover fraction practically control the global temperature*." They calculated that over "*the last hundred years the temperature is increased about 0.1°C because of CO2. The human contribution was about 0:01°C*." They conclude "***the IPCC climate sensitivity is about one order of magnitude too high, due to strong negative feedback of the clouds that is missing in climate models***."

*"**Because the anthropogenic portion in the increased CO2 is less than 10 %, we have practically no anthropogenic climate change***. *Water-vapor ensures 95% of the air absorption of the surface radiation, and more than 90% of the radiation of the air towards the cosmos, clouds* (WV forcing) *have effects ten times larger than a doubling of CO2"*! Therefore**, whilst high cirrus ice clouds have a warming effect, stronger low level cumulous clouds particularly over tropical oceans produce cooling, so cloud development produces overall negative feedback to any CO2 greenhouse warming effect**. **Thus, current models are ineffective, and ECS is likely to be benign at <0.5-1, the green zone in Figure 10.**

Scafetta (2022) studying recent GCM's showed "***the performance of the models seems to increase as the ECS decreases****",* so the lower ECS models are more viable. Given "*the satellite record shows that from 1980–1990 and 2011–2021 the global surface temperature may have warmed by about 0.40C, which is about 30% less than the HadCRUT5 ground record (the models use), means that* ***the actual ECS could also be … lower at 1.2–2.0C."*** Modern global distribution of CO2 is also obtained from satellites. **CERES satellite data indicate source regions for CO2 are NOT found primarily in the industrialized centers, they appear over tropical forested regions that have little human population let alone industrialization such as the Amazon Basin, tropical Africa, southern China and SE Asia**, **as well as the oceans.** Even in these source areas, CO2 only deviates from its global mean by less than 5%.

It has been demonstrated by several researchers including Poyet (2021) that "***anthropic CO2 may not represent more than 6% of the overall atmospheric CO2,*** *and the average residence time of any CO2 molecule is less than 6 years*" contrary to the IPCC's AGW theory. Jaworowski (2009) calculated "***about 95 percent of the total annual emission of CO2 into the atmosphere is natural, coming from the land and sea, and man-made flux of CO2 is equal to 4.7%… and contributes about 0.15% to the global***

greenhouse effect. *According to isotopic mass balance (carbon-13/-12) calculations, the mass of all past fossil CO2 remaining the atmosphere is around 4%."* These levels imply the AGW theory is wrong.

However, I am doubtful about this low total anthropogenic source of CO2, due to the increasing rise of the CO2 curve, that has to have a larger industrialization component (5-15%?) particularly in the northern hemisphere. **So further research on this level is required. Nevertheless, whatever the human related level, physics shows CO2 and its IR absorption contribution plays a rather insignificant role in modern climate, compared to dominant natural H2O forcing related to the hydrological cycle that moderates climate change on Earth.**

6. Climate Variability and the Hydrological cycle

Importantly, most IPCC model scenarios do not include many of Earth's natural climate variability factors. These include solar input variability, volcanic eruptions, geothermal heat and multi-decadal ocean circulation patterns with related atmospheric convection-the hydrological cycle. This latter factor relates to the higher temperatures and water vapour content particularly in the tropics that drives increased atmospheric convection, cloud cover and storm development. **Water in its liquid, solid, and vapor phases, and the changes in phases have immense dynamic atmospheric consequences that affect incoming and outgoing infrared radiation differently as shown in Figure 10a below**.

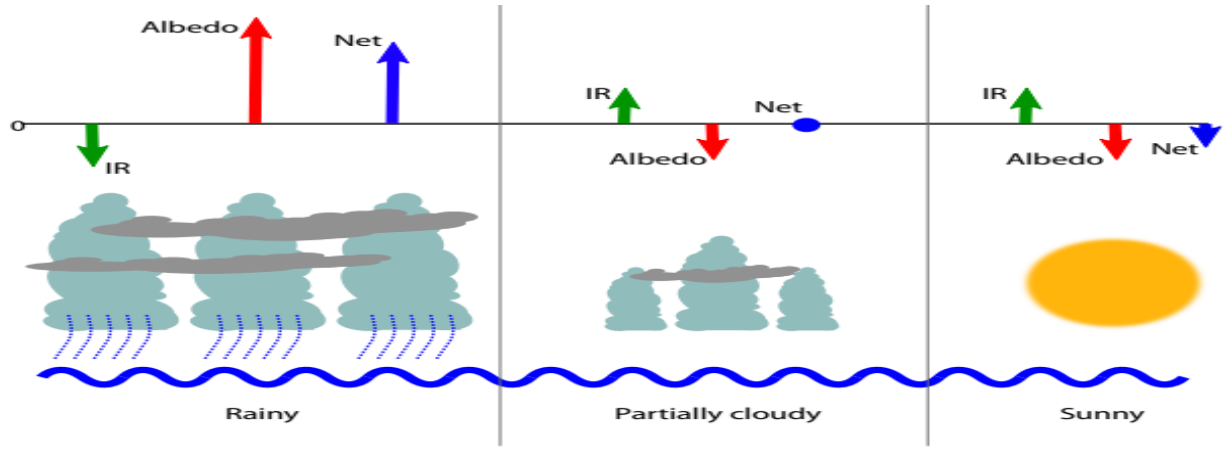


Figure 10: Conceptual model of typical variations of IR, albedo and net (IR + albedo) associated with three different areas of rain and cloud for periods of increased precipitation.

Storms and cyclones through the process of convective heat transfer an enormous amount of longwave IR energy from the surface to the upper troposphere and space via the albedo effect of cloud tops, refer Figures 10a &b. **Thus, increased evaporation helps cool the Earth and provides strong negative feedback to counteract any ongoing CO2 greenhouse warming.** This hydrological process and ocean currents **have kept tropical oceans at relatively stable 30-32C over geological time, currently average global ocean temperatures are chilly about 15C, mainly due to the cold Southern Ocean.**

Grey (2018) believes **the globe's hydrologic cycle indicated in Figures 10a &10b is the key factor that regulates daily weather and short-term climate**. Evaporation energy loss to space is needed as part of the process of balancing the surface's absorption of large amounts of incoming shortwave solar energy. **The stronger the hydrologic cycle, the more ocean heating and surface evaporation, cloud**

development and stronger albedo related IR flux to space, thus cooling occurs. Low- level clouds and cumulus clouds tend to reflect more energy during the day than they trap during the night. High level clouds, like cirrus, tend to allow solar SW through and trap a lot of upwelling LW, thus they have a warming effect.

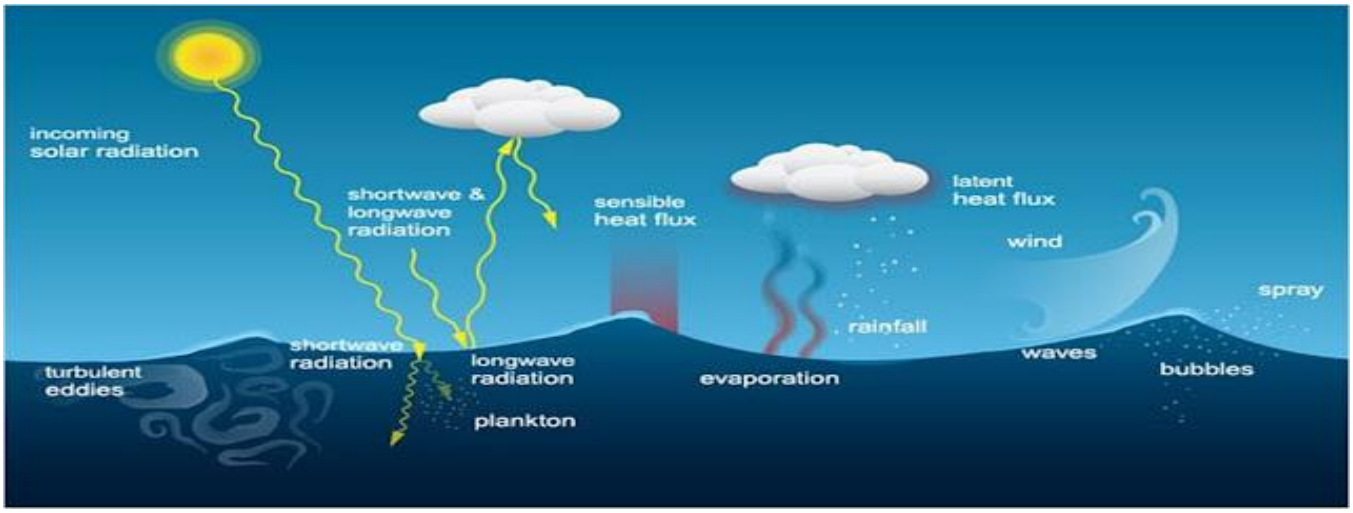


Figure 10b. Schematic showing solar radiation, the Hydrological cycle and latent heat flux

Gregory (2013) agrees, concluding "***Four independent data sets demonstrate that the IPCC AGW theory is wrong. CO2 does not cause significant global warming***." Experimental observations indicate that a *"1 % increase of the low cloud cover fraction or relative humidity decreases the temperature by 0:11°C."*

McLean (2014) states in '**Late Twentieth-Century Warming and Variations in Cloud Cover'**, that "*there is general consistency of a reduction in total cloud cover as temperature anomaly increases, with cloud cover decreasing from about 1984 until year 2000 followed by a flattening out to 2009." "**Since 1950, global average temperature anomalies have been driven from 1950 to 1987, by a sustained shift in ENSO conditions, then by a 7% reduction in total cloud cover (1987 to late 1990s) resulting in an increased average solar forcing at the Earth's surface of about 5 Wm-2,** and then a shift from widespread low cloud to more translucent mid and high-level cloud.* ***The solar increase is more than double the IPCC's estimated radiative forcing from all anthropogenic emissions of greenhouse gases***." This emphasises that the hydrological cycle driven by solar influences and ocean currents is vastly more important than the AGW greenhouse effect.

This is supported by **CERES satellite and balloon data that indicate negative feedbacks for both low-level and high-level clouds.** Pokrovsky (2019), shows that ***"global cloud cover decreased markedly (3%) from 1986 to 2000, this could explain all the warming that occurred and the subsequent Pause***. *Thus, cloud cover changes over three decades during the period of global warming can explain not only the linear trend of global temperature, but also a certain interannual variability.* "His data suggests that ***"a 1% increase in global cloud cover corresponds to a global decrease in temperature of about 0.07* °C *and vice versa***." **Willis Eschenbach** in a recent 'WUWT' blog demonstrated "*When the ocean*

temperature gets high enough (>23C), the normal everyday "simple physics" positive correlation between absorbed solar radiation and a resulting temperature increase breaks down, and the correlation goes negative due to the amount of absorbed solar radiation, dispersed via clouds and thunderstorms." Thus, clouds help regulate the ocean surface temperatures and hence global temperatures.

Another very critical part of the GHG problem is in the physics of CO2 atmospheric warming by IR absorption, because its importance begins to decline even below 100ppm. CO2 levels higher than 200ppm do not result in much more equivalent warming because IR absorption is reaching saturation levels and is logarithmic, **thus IR absorption has decreased significantly at current rising CO2 levels as shown in Figures 11a & b. These figures show the imputed value for ECS is <0.4C, an order below the IPCC values uses in its GCMs. This is explained in more detail by Plimer (2009) and Poyet (2021) in 'The Rational Climate eBook'.** He states "*Arrhenius's calculations were wrong and his conjecture is flawed: CO2 only plays a marginal role in the climate system. A doubling of CO2 from the present 410ppmv to 820ppmv (at the present rate of 2ppm/yr in two hundred year's-time,) should result in a temperature increase of about 0.35°C, because* ***the warming capability of CO2 is now so close to saturation***."

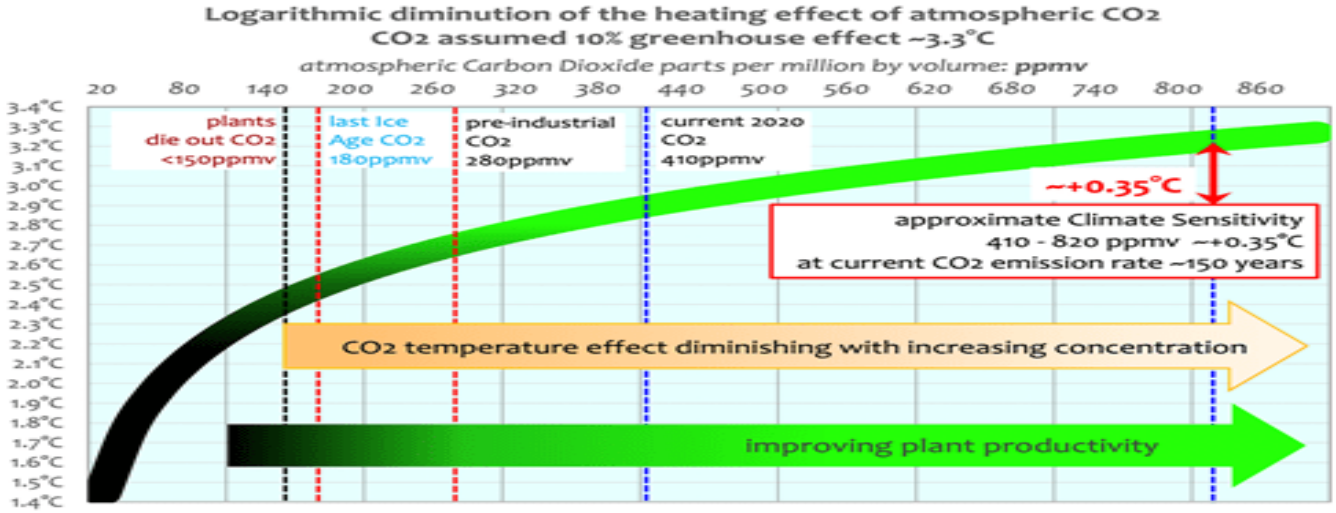


Figure 11a. A direct estimate of Climate Sensitivity to CO2-ECS. (after Rotter 2021 in Fabius Maximus)

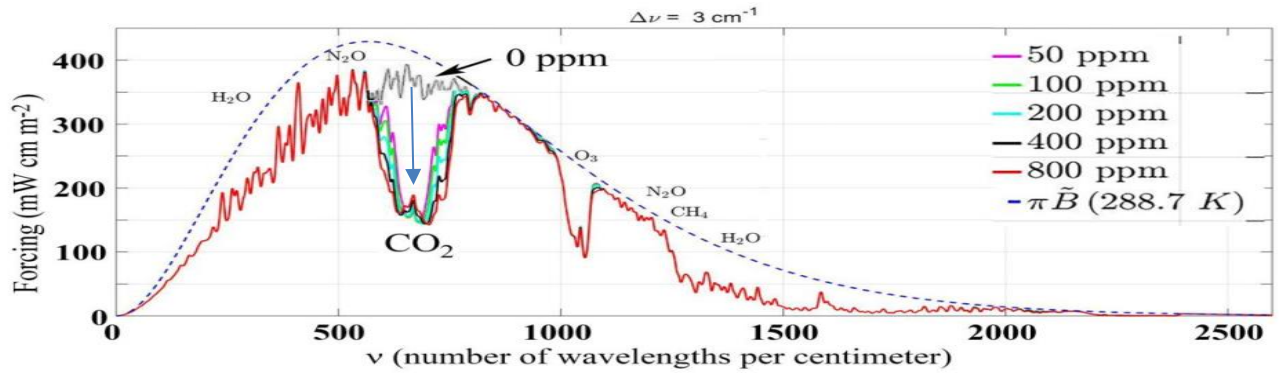


Figure 11b. The effect on the IR spectrum of low concentrations of CO2. (From Howard "Cork" Hayden, Professor Emeritus of Physics, University of Connecticut in The Energy Advocate)

In reference to Figure 11b, Poyet said "***how little IR effect changes above a concentration of 50ppm CO2, the spectrum only broadens a little up to 400ppm and virtually nothing happens at higher values*.**"** Similarly, according to Plimer (2017) "***The Beer-Lambert Law shows the doubling of CO2 will only increase atmospheric temperature 0.2°C,*** *and if quadrupled it will rise by a further 0.1°C.* " Note that at high altitude, CO2 is the primary emitter of radiation to space, thereby cooling the upper atmosphere. Most of this basic physics has been around since before Al Gore's '**An Inconvenient Truth'**, and long before the IPCC 's First Assessment Report (FAR). **They should not have ignored this fundamental but vital data that virtually destroys the CAGW case**.

There are other non-theoretical, measured contradictions of AGW, shown by the fact that CO2 (NOAA Mauna Loa) continued its ~+2 ppm annual increase during the 2020-21 covid-19 pandemic, when fossil fuel related CO2 emissions declined significantly in the northern hemisphere, refer Figure 11c.

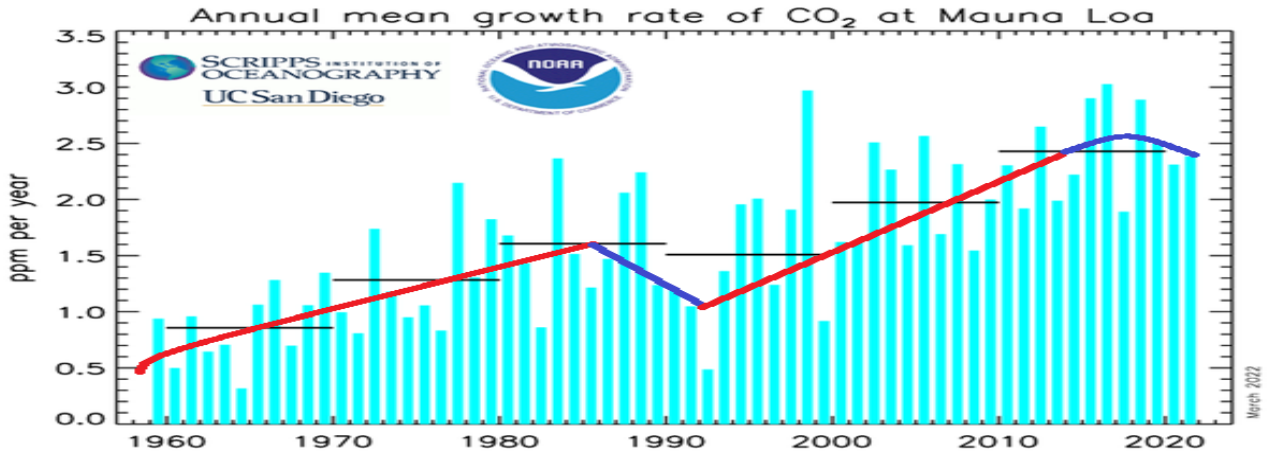


Figure 11c. NOOA data on the rate of change of CO2 measured at Mauna Loa since 1960

Clearly natural emissions including volcanic CO2 heavily outweigh human emissions that are hidden within the natural CO2 variations even during El Niño's as shown in Figure 11c, note the increasing growth rate declined slightly since 2016 along with global temperatures. Dr Roy Spencer (2020) agrees, "***While the global land and ocean areas emit approximately 30 times as much CO2 into the atmosphere as humans produce from burning of fossil fuels, they also absorb about an equal amount of CO2.***"

"Therefore, naturally derived CO2 continued unabated and has overwhelmed any AGW signal. Critically CO2 has no direct impact on the energy balance." Spenser further speculated "*An interesting aspect of the observed rise of … CO2 is that it* ***indicates the greater the atmospheric concentration the faster the "extra" CO2 is removed by biological activity.*****" This implies the biosphere is expanding with faster plant growth and stronger vegetation sinks as well as ocean organic sinks that can be considered unlimited in terms of anthropogenic emissions.** Vinós (2022) inferred that **more than 50% of current annual emissions are being absorbed in biological sinks, and this will continue until the atmosphere reaches a new equilibrium, possibly above 500 ppm CO2.** This also means "*human-related CO2 emissions do not have to go to net zero to stop the observed rise in CO2, a 45% reduction-in the absence of natural fluctuations in the carbon cycle, should suffice*."

7. Solar Climate Influences

The connection between solar "activity" and climate is currently underrated and highly controversial in the climate science community**. Prior to the advent of the IPCC's 'consensus' view in 1980 that the sun's input is relatively constant and therefore unimportant for climate change, meteorologists generally considered the sun was ultimately responsible for nearly all climate issues**. Connolly et al (2021) in **'How much has the Sun influenced Northern Hemisphere temperature trends?'** discussed various assumptions the IPCC hold and offer suggestions for further research into defining the suns influence.

Meteorologists know that the climate is determined by the balance between the incoming solar shortwave radiation, quantified by the Total Solar Irradiance (TSI), and the outgoing terrestrial radiation. **Solar irradiance, constitutes over 99.9 % of the energy input to the climate system**, and this energy changes over the annual cycle by 6.9 % due to the changing Earth-Sun distance. **The Sun rotates around the centre of gravity of the solar system every 11.1 years (Plimer 2009), this cycle causes its magnetic field to switch poles, resulting in turbulent solar activity and variable radiation, that in the past as now modulated the terrestrial temperature.** Thus, solar cycles and minor changes in solar heat flow reaching Earth cause significant cyclic climate change. Astrophysicist and geoscientist Dr. Willie Soon, a leading authority on the relationship between solar phenomena and global climate, objects to the IPCC approach and considers **the TSI must be monitored as an essential Climate Variable.**

Connolly *et al* 2021 concur, "***We argue that the Sun/climate debate is one of these issues where the IPCC's "consensus" statements were prematurely achieved through the suppression of dissenting scientific opinions."*** Their review indicates that the level and variations of total irradiance TSI and its effect on surface temperatures appear to depend on what data is utilized, as shown in Figure 12a.

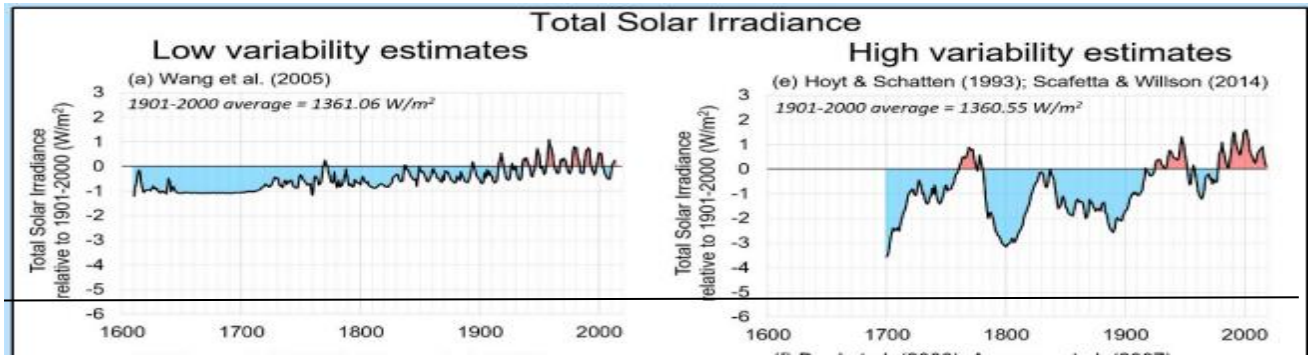


Figure 12a. Historical Total Solar Irradiance Low and High Variation estimates. **(**Connolly *et al* 2021.)

The ACRIM satellite trends on right indicate an increased higher variability TSI trend during 1980-2000 and a decrease since then, that indicates a direct relationship with global UAH temperature trends and earlier historical trends. However, they say *"other studies suggest the relationship may be more subtle and be non-linear."*

Page (2017) denotes "solar *activity encompasses changes in solar magnetic field strength, IMF, GCRs, TSI, EUV, solar wind density and velocity, CMEs, proton events, etc. It seems likely that the three main solar activity related climate drivers are the changing GCR flux - via the changes in cloud cover and natural aerosols (optical depth), the changing EUV radiation producing top-down effects via the Ozone layer, and the changing total irradiance TSI - especially on millennial and centennial scales*".

Zharkova et al. (2020) echo Plimer's findings, "*Changes in the total solar irradiance reaching the Earth atmosphere depend on regular changes of solar activity in the eleven-year sunspot cycles, in the grand solar cycles generated by a double dynamo and the changes in the Sun-Earth distances caused by orbital perturbations caused by the gravitational forces of the large planets, or solar inertial motion."* Viscount Monckton consequently noted "***The entire 20th Century warming from all sources was below 2 watts/m². The sun could have caused just about all of that***".

Independent of irradiance changes, the sun remains the dominant external source of heating in the biosphere generating the hydrological cycle, ocean currents and wind patterns. There is interannual and interdecadal variability in the strength of the Hadley Cells (see Frontispiece) and Walker atmospheric circulations that transfer heat from the tropics towards the poles.**The earth's orbital variations, on daily, annual and millennial scales affect the amount of direct heat irradiance parts of the Earth receive**, as shown in Figure 12a, thus the sun is the major factor in long-term climate control.

During sunspot cycles the magnetic flux varying enormously, this **the solar wind plasma shields the solar system from galactic radiation, limiting the cosmic rays that reach earth**. **Lockwood showed that averaged solar magnetic flux increased 230% from 1901 to 1995 at the peak of the solar maximum.** Why does this matter? Well, physicist Svensmark (2019) has proved through CERN experiments that "*stronger cosmic ray bombardment, mainly neutrons during weak magnetic cycles causes development of ionized particles that form water droplets and cloud development in the lower atmosphere.*" These **clouds perform a moderating cooling influence to GHG warming by reflecting incoming solar heat by their high albedo tops.** Thus, Scafetta (2014) predicts reduced solar radiation during the coming GSM will cause increased cosmic radiation, and "*that cooling could stabilize Earth's climate and avoid the catastrophic consequences predicted in IPCC reports."*

Scafetta continues "***By regulating the Earth's cloud cover, the Sun can effectively turn the temperature up and down. High solar activity means fewer clouds and a warmer world****. Low solar activity and poorer shielding against cosmic rays result in increased cloud cover and hence a cooling.* ***As the Sun's magnetism doubled in strength during the 20th century, this natural mechanism may be responsible for a large part of global warming seen then****."* He also surmised that as the solar system passes around the galaxy when it passes through denser star development and related supernovas the cosmic ray flux increases significantly, which may have caused intense periods of cloud development on Earth resulting in sufficient cooling that led to glaciation.

In the tropics, with the exception of North Africa, there's much more net incoming solar shortwave radiation (after reflections) than outgoing longwave radiation**. Outside of the tropics towards both poles, there's much more outgoing longwave radiation than incoming solar radiation, this is the result of the poleward horizontal transfer of energy that is a constant flow of about 15 petawatts** (10^{15} watts)

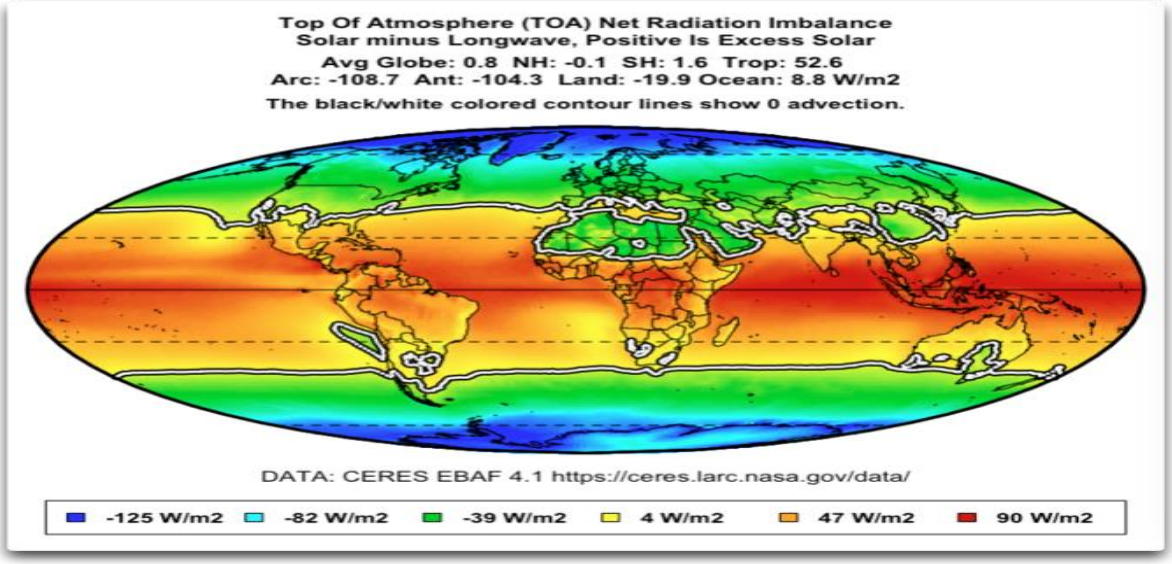


Figure 12b. Top-of-atmosphere av radiation balance, 2000-2021, Ceres data. After *Eschenbach 2021*.

across the black/white lines above. According to Eschenbach, "*To put this in perspective, it's more than a thousand times the ongoing total primary energy consumption of all the people on the planet*."

Roberts (2016) noted "*The sun, which during the second half of the 20th century saw its highest level of activity in the past 1000 years (refer Figure 12b), will also contribute to cooling as it has entered an unusual period of weakness not seen in 200 years.*" **Currently, the solar magnetic field and solar activity in cycle 25 are significantly reduced indicating a grand solar minimum (GSM).** According to Zharkova et al. (2020), the GSMs are caused by the significantly reduced solar magnetic field imposed by the interference of two magnetic fields generated by the double dynamo in the solar interior.

Soon &Legates (2013) showed the reconstructed history of TSI from 1850-2012 can explain the changes in the Equator-Arctic surface temperature gradient, a key climate driver. They noted ***" the natural Earth orbital and solar-driven, millennial and multi-decadal cycles plainly visible in the historical data have been totally ignored in the IPCC GCM's***". Further they consider "***the IPCC has been practicing 'para-science' by specific and grievous errors that have the effect of minimising the role of the sun in climate***."

Plimer (2017) states "*Unless we know where the earth is with regard to, and then incorporate, the phase of the millennial and 60-year cycles in particular, useful climate forecasting is simply impossible."* Zharkova et al. 2020, also considered "***The fundamental oscillations of solar irradiance, … may be linked***

to the oscillations of the baseline terrestrial temperature, independent of any terrestrial processes of radiative transfer and heating".

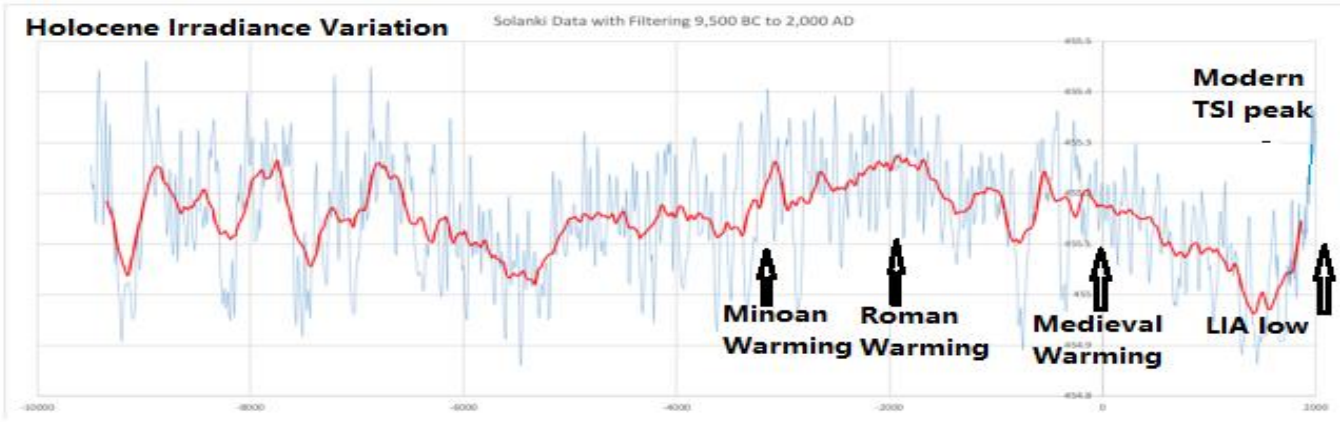


Figure 12c. Solar TSI Oscillations during the 11,500 yr Holocene. *After Steinhilber et al. 2009; Vieira et al. 2011. Red line is the moving average TSI value.*

The oscillations of total solar irradiance (TSI) during the Holocene presented in **Figure 12c, show TSI peaks associated with documented historical warming periods, the Maunder minimum during the LIA and then sharp increase into the modern maximum. Residual heat retained in oceans causes thermal expansion and current rising sea levels.** In fact, the temperature of the Earth for the past few centuries matches the solar magnetic activity graph far better than does the CO_2 concentration graph (refer Figure 20b). **This is important evidence in support of solar control of Earth's climate.** "*The previous GSM known as the Maunder minimum was recorded from 1645 to 1715 lasting for six cycles of eleven years during which the global Little Ice Age (LIA) occurred,"* (Figure 12d). ***"The modern GSM started in 2020 and will last for three solar cycles until 2053, during this time*** **solar irradiance will be reduced by about 3 W/m2 or 0.22%, so *we can expect a slightly cooler climate than now, but warmer than the LIA*."**

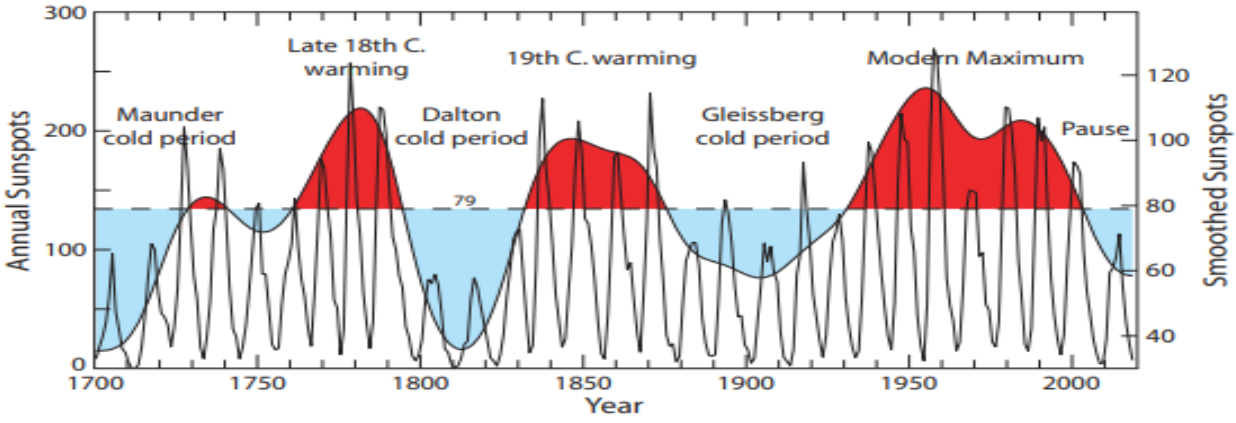


Figure 12d. Solar sunspot activity and climate periods since 1700. After Vinós and May 2022. There is no direct linear correlation between solar activity and temperature, however, periods of several solar cycles (red and blue) that deviate significantly from average tend to coincide with periods of warming and cooling.

Paleoclimatology is the only subfield in modern climatology where a belief in an important sun-climate effect is considered likely by the IPCC consensus. Vinós and May (2022) said " ***The near total lack of interest by modern (model-driven) climatologists in the sun-climate effect, neglects the abundant evidence from paleoclimatology and recent climate variations that correlate with the solar-cycle."*** *"It is no longer acceptable to say that solar variability in total irradiance is too small to have a significant effect on climate, when* ***there is so much evidence that variations in total irradiance are not how solar variability mainly affects climate. The solar effect on climate works through changes in atmospheric circulation****." "Due to solar modulation of meridional heat transport, solar minima are periods of stronger tropical-polar stratosphere coupling, and when coordinated, changes in meridional transport that produce climate shifts are more probable*."

For instance, "***ENSO is modulated by solar activity (Vinós 2022)*** and *the La Niña/ Neutral oscillation is phase locked to the solar cycle, whilst El Niño frequency is also affected by the solar cycle." They concluded* "***that a great part of the climate change that has taken place during the 20th century has been due to the modern solar maximum*** *and the pause in global warming is in part a consequence of low solar activity* (such as the current cycle 24), *and likely to continue until solar activity becomes high again."* Thus, the current GSM will strongly affect the first half of 21st century climate.

*"**The 2500-yr sun-climate Bray cycle constitutes a good example of the effects of solar variability on paleoclimatology, as it produces the most dramatic climate cycle observed in the Holocene**, refer Figure 12e.* ***In terms of climate all the lows (blue) of the cycle are marked by periods of severe climate deterioration lasting over a century and reflected in multiple proxies, of which the LIA is the most recent and the coldest example."***

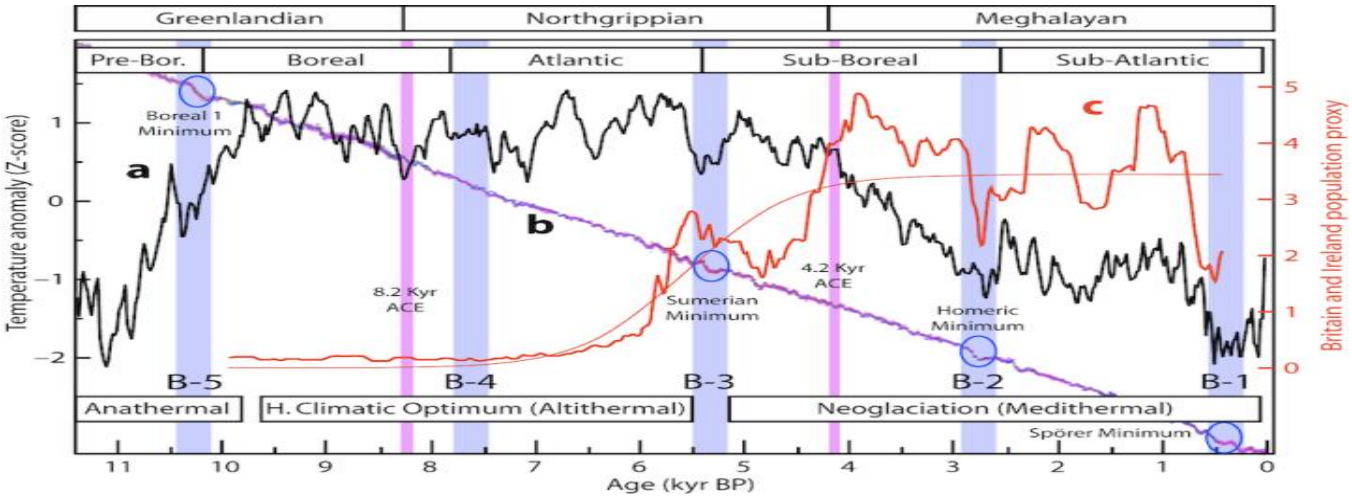


Figure 12e. The Bray 2500-yr solar and Holocene Temp /climate cycle. (After Ammann & Fyfe 2014) Holocene subdivisions are labelled with the stratigraphic subdivisions on top and biological ones below, showing a 2500-yr spacing. The Spörer, Homeric, Sumerian and Boreal 1 grand minima (blue ovals) along the radiocarbon calibration curve are separated by multiples of 2500-yr, marking the lows of the Bray

solar cycle B-1 to B-5, except B-4. **In terms of the effects on human societies of the past, the Bray cycle lows are marked (red line C) by periods of upheaval, population decrease, and civilization collapse, followed by societal advance.**

Scafetta (2014) noted "*It seems unlikely that in a solar system where everything appears more or less synchronized with everything else, only the Sun should not be synchronized in some complex way with planetary motion.* ***Thus, Earth's climate could be modulated by a complex harmonic forcing consisting;***

(1) ***lunar tidal oscillations*** *acting mostly in the ocean;*

(2) ***planetary-induced solar luminosity and electromagnetic oscillations*** *modulating mostly cloud cover, and therefore the Earth's albedo; and*

(3) ***gravitational synchronization with the Moon and other planets*** *modulating, for example, the Earth's orbital trajectory and its length of day."*

In summary, the sun is the dominant external driver controlling Earth's orbital oscillations, temperature trends plus long and short-term climate variations.

8. Ocean circulation, Temperature Variability and sea levels

Ocean currents may hold the key to understanding medium to long-term historical and geological climate variability. Grey (2018) believes "***variations in the global ocean's Meridional Overturning Circulation (MOC) could be the primary internal driver of climate change over the last few thousand years."*** Oceans are huge sources and sinks of energy including solar, geothermal, volcanism and CO2."

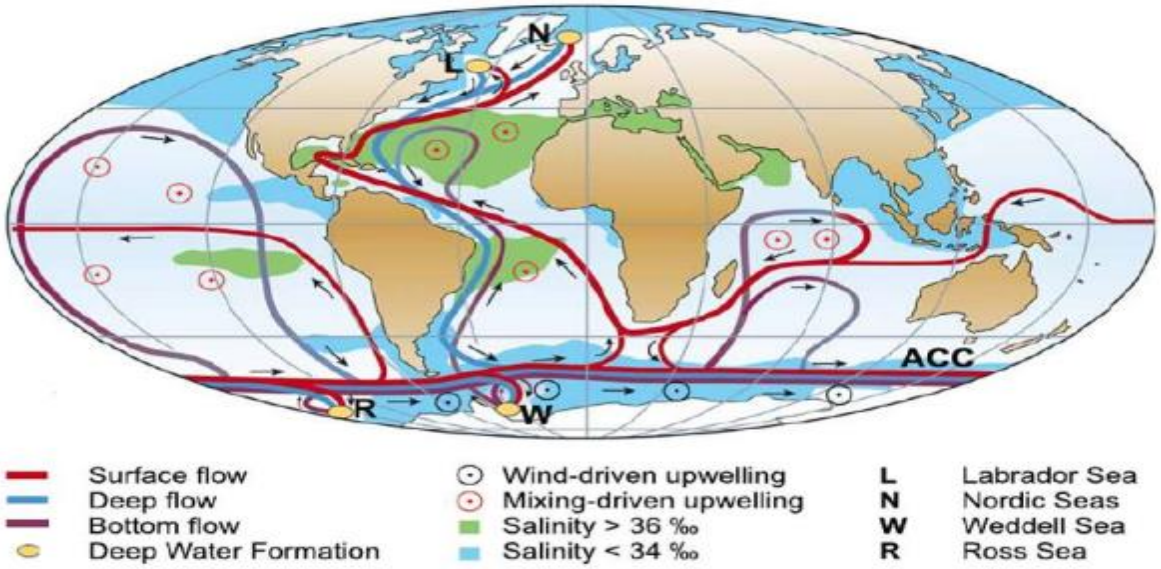


Figure 13a. Schematic of ocean currents related to global Meridional Overturning Circulation (MOC). With special focus on the Atlantic section of the flow (AMOC), where warm and saline waters flow northward from the Southern Ocean into the Labrador and Nordic Seas via the Gulf Stream. After Kuhlbrodt et al. (2007).

Poyet (2021) reported that according to Kuhlbrodt et al.,(2007**) Figures 13a & b *"give a schematic description of the THC circulation: the red curves in the Atlantic indicate the northward flow of water in the upper layers, in this process heat is released to the atmosphere**. The yellow areas off Greenland and Labrador Seas indicate regions where near-surface water cools and becomes denser, causing the water to sink to deeper layers of the Atlantic, this process is referred to as "deep water formation.". The light blue curve denotes the southward flow of cold water at depth. At the southern end of the Atlantic, the AMOC connects with the Antarctic Circumpolar Current (ACC). Deep water formation sites in the high latitudes of the Southern Ocean, these contribute to the production of Antarctic Bottom Water (AABW), which flows northward near the bottom of the Atlantic (blue lines in the Atlantic). **The circles indicate regions where water up-wells from deeper layers to the upper ocean."*** The oceans have a vastly greater ability to absorb or lose thermal energy with minimal temperature change compared to the atmosphere.

"Deep water circulation occurs on timescales ranging from a few months to … thousands of years; this results in changes in the rate and location of heat exchange associated with upwelling or sinking of cold saline CO2 enriched water, thus affecting sea surface and atmospheric temperatures (El Niño) plus CO2."

Clark et al. (2002) report "*But it remains difficult to assess the likelihood of future changes in the thermohaline circulation, mainly owing to poorly constrained model parameterizations and uncertainties in the response of the climate system to greenhouse warming*", and Rahmstorf (2006) adds "*Model simulations – even those that lead to a complete shutdown in future – **find that the influence of anthropogenic warming on the THC until today should be smaller than the natural variability. Therefore, any variations observed to this date are likely related to natural oscillations***". It has been estimated that a complete global circuit of THC is about 1000 years.

Turning to broader climate change issues, Clark et al. (2002) stated that "***abrupt climate change during the last glaciation originated through changes in the Atlantic thermohaline circulation in response to small changes in the hydrological cycle***". *"The climate patterns changed at the Mid-Holocene Transition due to orbitally-driven changes in insolation and a shift from solar to atmospheric-oceanic frequencies leading to the shift of the Inter-Tropical Convergence Zone (ITCZ) and led to the end of the Green-Sahara period,"* Wanner and Brönnimann (2012). ***The Mid-Holocene Transition, caused by orbital variations, brought a change in climatic mode, from solar to oceanic dominated forcing. This transition displaced the climatic equator south, ended the African Humid Period and increased El Niño activity*"(Vinós 2022).**

This climate transition shown in Figure 13b caused the movement of human populations to more climate resilient locations along major rivers and oceans, and was very important for the development of modern civilizations in the sub-tropical zones around the Mediterranean across to India, in China and Central America. **In reality, the world's weather and therefore short-term climate could be dominantly driven by the temperature of the oceans that represent 71% of the planet's surface.**

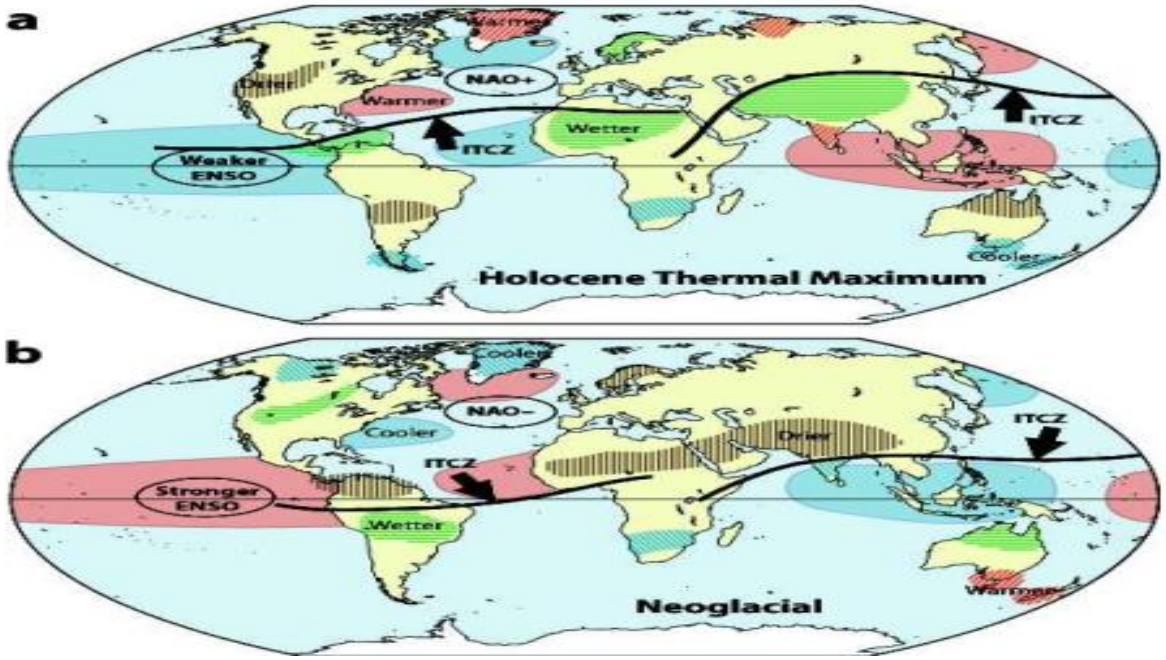


Figure 13b. The transition from a) Holocene Climatic Optimum to b) Neoglaciation.

An estimated 90% of the biosphere's heat and water vapour is transported from the tropics towards the poles by winds and currents (i.e., Gulf stream) dependent on the ocean's temperature that is largely solar related. Vinós (2022) in '**Climate of the past, present and future'** showed "*Meridional transport acts as an integrator of internal and external has forces that act simultaneously and in different time frames to produce variability in the climate system.* ***When meridional transport is strong, the planet loses more energy and cools down*** *… in a non-homogeneous way,* ***because the net energy loss is greater in the polar regions, despite the process causing warming of the Arctic."*** **The more energy the poles receive from the tropics mainly in winter, the more they radiate, cooling the rest of the planet.**

Atlantic Meridional Overturning Circulation (AMOC) shown in Figures 13a,b, also plays a vital role in global climate, redistributing heat by transporting relatively warm surface, thermocline, and intermediate waters northwards. This warm upper limb of the overturning circulation releases heat to the atmosphere on its way northward, loses buoyancy, and eventually sinks in the subpolar North Atlantic (SPNA) and Nordic Seas, returning south as North Atlantic Deep Water (NADW) refer Figure 13c after Holliday et al 2018.

Recent research into modern Arctic warming has shown "***The Gulf Stream extension causing…The heat transport into the Nordic Seas has increased steadily in volume and temperature over the last century***." This increase is consistent with both stronger winds and declining sea ice cover that assisted heat transfer to the air. Also, the Jet Stream was found to have shifted northward by some 330 km thus warming regions to the south of it.

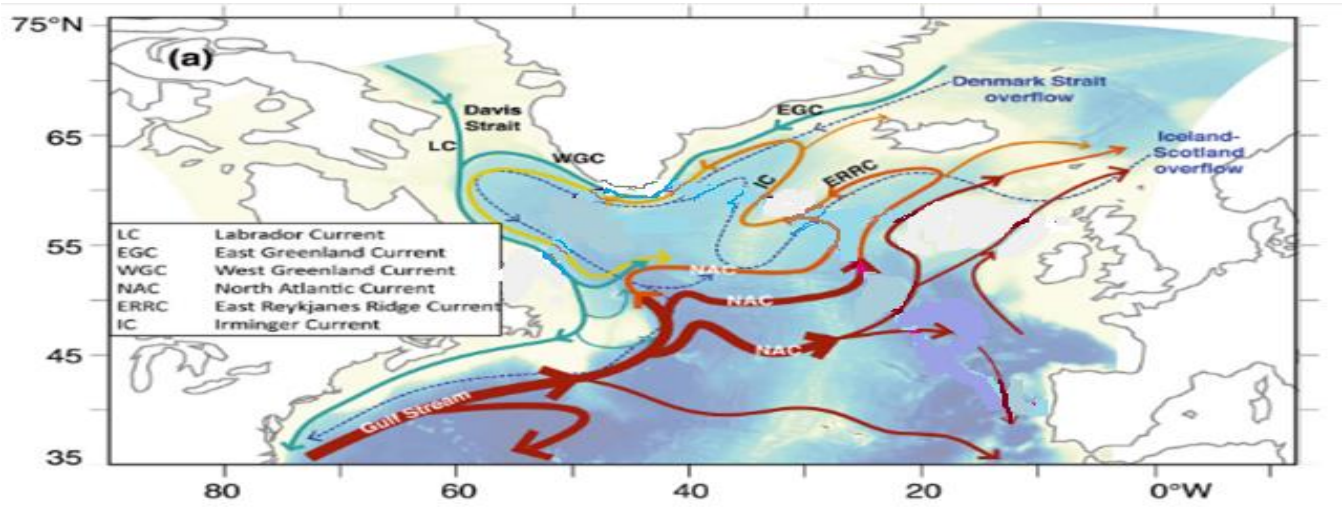


Figure 13c. Schematic of Atlantic Meridional Overturning Circulation (AMOC) and the Gulf Stream.

*Kunzig and Broecker (2008) in '**Fixing Climate'*** argue it is likely that **shutting off the northern part of AMOC circulation by an influx of fresh water and floes from the Laurentian ice sheet, was responsible for rapid cooling of this region during the ice ages** and particularly the Younger Dryas. This had the effect of covering the North Atlantic in sea ice, so winds could not warm northern Europe and ice sheets extended south into the UK. **Broecker's ocean conveyor belt theory provided a plausible mechanism for heat transfer and climate mode shifts previously documented in Greenland ice cores**. The AMOC circulation was considered to be normally 'on' but could be disrupted by particular glacial events.

Grey (2018) noted **most climate analyses have identified Atlantic Multidecadal Oscillation (AMO) with its 60-70-yr variability as having the dominant imprint on Northern Hemisphere and historic global temperatures**, refer Figure 14a.

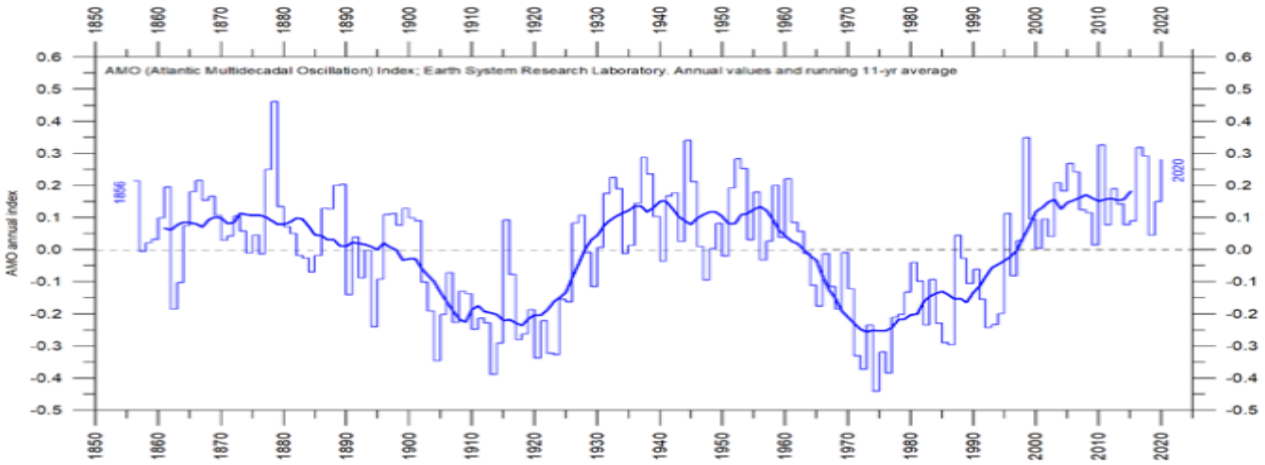


Figure 14a: Annual values 1855-2020 of the Atlantic Multidecadal Oscillation from Humlum 2020. This shows annual values, the thick line is the simple running 11-year average. Source: ESR Lab, NOAA. The AMO graph in Figure 14a shows a clear 60-yr cyclic pattern that mimics the global temperature trends, the AMO index may be related to the major USA droughts during 1930-40.

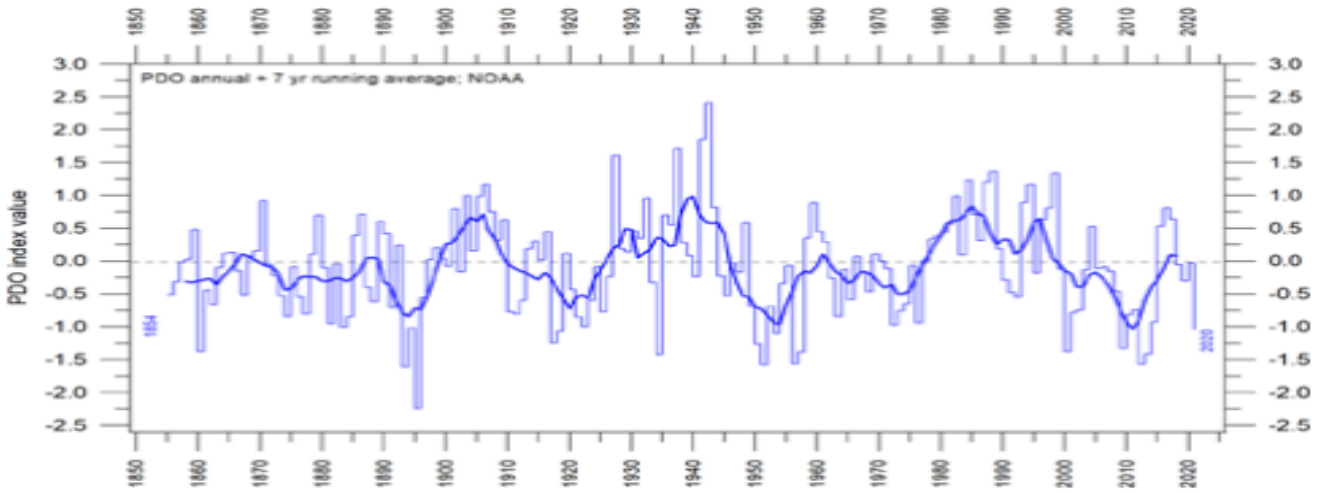


Figure 14b: Annual values 1855-2020 of the Pacific Decadal Oscillation (PDO) from Humlum 2020. After the Physical Sciences Laboratory, NOAA, annual PDO values, the thick line is the 7-year av trend.

ENSO or **Pacific Decadal 30-yr Oscillation (PDO) shown in Figure 14b is a secondary driver of variations in global mean temperature in both hemispheres**. Lee et al. 2015 found ***"Subtropical western boundary currents, the main oceanic conduits for heat transport from the equator to the poles, have warmed and intensified since the 1900's due to enhanced wind shear between low and high latitudes*****.** *These wind changes are associated with the onset of a negative Pacific decadal oscillation.*" "***The Pacific Ocean shallow overturning cells have accelerated in response to intensified Pacific trade winds since the early 2000's, contributing to a recent climate warming hiatus (*****and La Nina conditions*****)****, leading to an increased leakage of heat and fresh water into the Indian Ocean via the Indonesian Throughflow."*

"These ENSO events in the Pacific have a parallel in the Indian ocean, are related to the Indian monsoon and they appear to cause peak atmospheric global warming responses. In contrast, in the North Pacific, surface waters are fresher and there is no deep-water formation. The cooler waters over the eastern equatorial Pacific Ocean are due to the ascending cold interior waters associated with the global Thermohaline Circulation, these are periodically interrupted by ENSO events.

The cold Southern Ocean currents that help keep Antarctica isolated and frozen, are a large sink for CO2 including increasing biological sequestration. Deep waters formed in the Southern Ocean are more saline and denser so they spread north into the South Atlantic, Pacific and Indian oceans at deeper levels than in the North Atlantic. Wind-driven upwelling occurs along the Antarctic Circumpolar Current (ACC).

Polar heat transfer is at a maximum during the winter months, when radiation loss to space is at its greatest, polar temperatures are coldest, and the atmospheric circulation is strongest. It is evident that temperatures vary with ocean circulations particularly in the northern hemisphere. Javier (2018) noted "*It can be inferred that at least part of the* ***recent observed Arctic atmospheric warming*** *is due to the heat released from the ocean during the annual increased production of new ice, and* ***the increased flux of ocean heat to the atmosphere through the larger areas of thinner ice*****."** The North Atlantic Oscillation

is the regional expression of **the Arctic Oscillation, and similarly it bounces between a wavy jet stream in its negative phase and a strong west to east zonal wind Vortex in its positive phase**, that varies from month to month. When the vortex is strong, it traps cold air at the pole, preventing cold air incursions into the mid-latitudes and decreasing heat loss through meridional transport. This oscillation is a measure of natural weather variability and heat distribution independent of climate change.

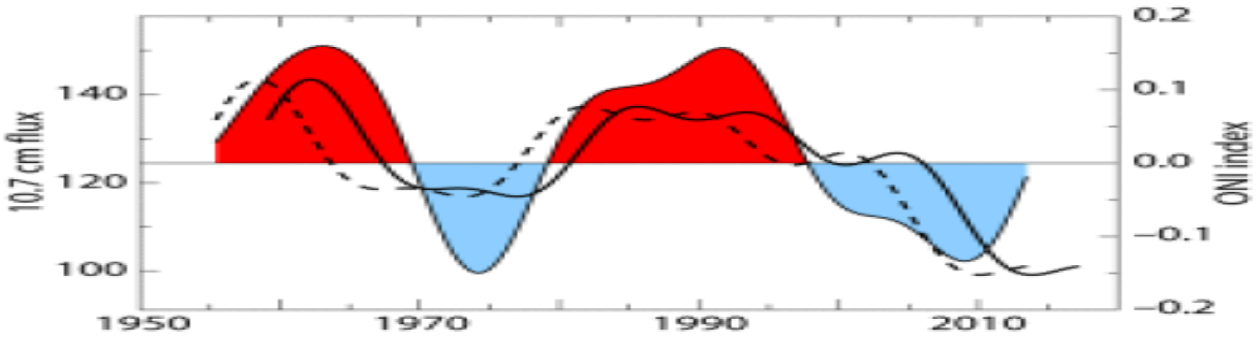


Figure 15a. Gaussian smoothed 1950-2018 Oceanic Niño Index

(black line delimiting red and blue areas, right scale), and Gaussian smoothed 1950-2018 10.7 cm solar flux, a proxy for solar activity (thick dashed line, left scale).

A 4-year lagged 10.7 cm solar flux (thick line) shows that periods of high solar activity tend to coincide with periods of predominant El Niño conditions, and periods of low solar activity tend to coincide with periods of predominant La Niña conditions. **The El Niño–Southern Oscillation (ENSO) causes sea surface temperature variations tied to modern seasonal changes in tropospheric circulation patterns and global warming events.**

Historically*," **ENSO activity was very low during the Holocene Climate Optimum and has been increasing as the planet cooled during the Neoglacial**, following changes in insolation caused by orbital changes in precession and obliquity. Most El Niño and La Niña episodes from 1900–2005 are grouped into non-commuting pairs that repeat every ~ 11 years, aligned with rising and falling transition phases of the solar cycle*. " Also, "*the solar effect on ENSO could be responsible for the detected global temperature variation of 0.1-0.2 °C between solar cycle maximum and minimum attributed to tropical evaporative feedback*." Analysis of the warm water volume in the equatorial Pacific (Fig. 15b) indicates that **energy tends to accumulate during Niña years, and it is released during Niño years when heat is efficiently spread through the climate system causing temperature rise**.

Page (2017) indicated "***During the 1930's the AMO and PDO warm phases coincided resulting in a period of record temperatures and drought in the USA, whereas, during the 1960's-70's their cold phases operated resulting in global cooling of 0.35C*.**" **Warm phases coincided again after the mid 1990's culminating in the major 1998 El Niño event** but after this, more neutral phases resulted in the temperature Pause that lasted until the 2015-16 El Niño event**.**

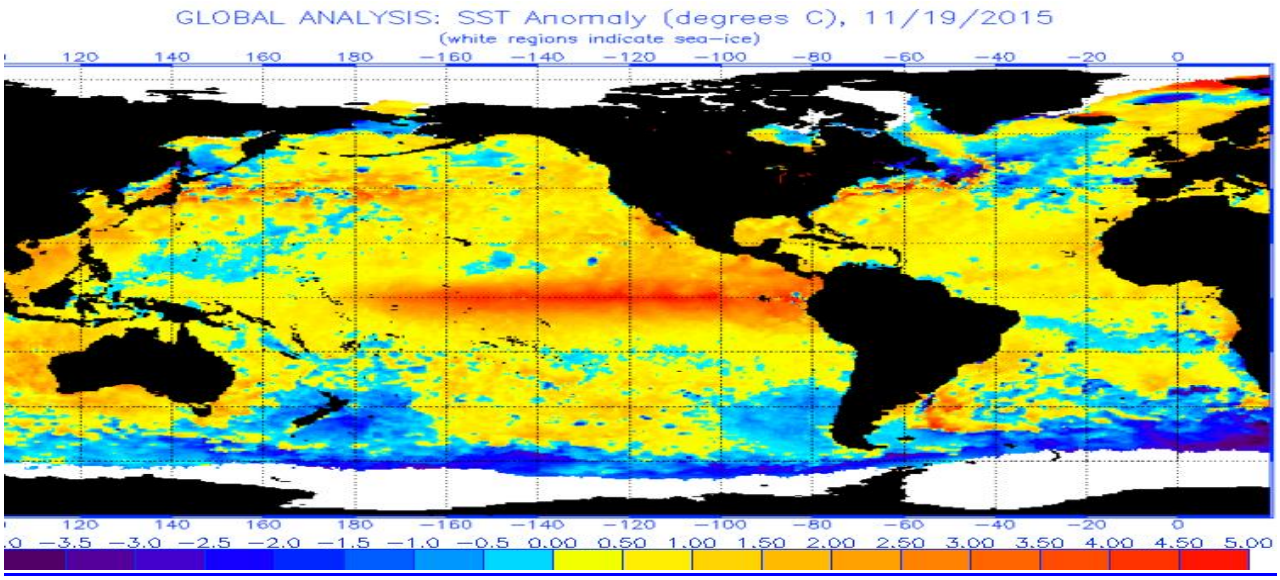


Figure 15b: Satellite imagery showing a strong El Niño event in the Pacific Ocean in November 2015. *Source; OAA https://www.ospo.noaa.gov/Products /ocean/sst/anomaly/2015.html*

Recent La Nina global cooling following the 2020 El Niño has now brought temperatures back to 2000 levels, and during the mid-2020's to mid-2030's the AMO and PDO cold phases should cause further cooling, or at least only minor cyclic warming. If this occurs, it will definitely confirm AGW is false. **In the tropics the deep convection process creates a tight link between the temperature of the atmosphere and that of the ocean surface below**, albeit with a one- to two-month delay in the atmosphere's response. However, **the upper 3 meters of the world's oceans hold more heat than the entire atmosphere, so continual ventilation of just 10m of warmer subsurface water will affect the global average atmospheric temperature for decades**.

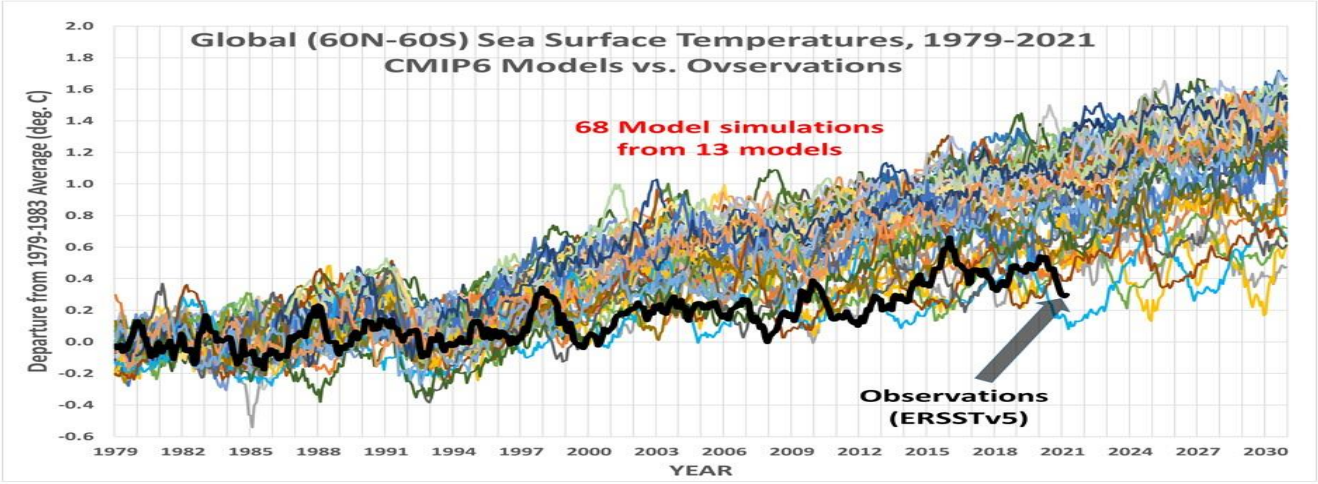


Figure 15c. Ocean temperature satellite observations and model results.

Figure 15c compares satellite observations of modern sea temperatures with model simulations**, it is evident the models are over warming and diverging from measured reality from about 2000 when the**

Pause started. **Measured sea temperatures show a variable but steady increase of 0.3C over 40 years with prominent El Nino peaks of 0.2-0.3C. Whereas the median model temperature over the same period was 0.8C**, so obviously the model simulations have some wrong parameters. **There is no acceleration of warming in this observational data,** which compares favourably with atmospheric temperature trends, and **this further emphasizes the close symbiotic climate and temperature relationship between oceans and atmosphere.**

Warmer "mode waters" are gradually ventilated during the winter, and **huge amounts of heat stored at 100-meter depths are ventilated during an El Nino event causing global warming of up to 0.6C, as occurred with the strong 2015-16 El Niño above.** Typically, in these events water from the West Pacific Warm Pool is sent eastward along the Pacific Equatorial Counter-current through a series of Kelvin Waves driven by westerly wind bursts in the western tropical Pacific.

The equatorial Pacific Ocean warming effect of these El Niño's is enormous; it has been estimated that almost half of the global warming in the 21st century is due to El Niño events, but they remain poorly modelled in GCM's. All models show ocean surfaces warmer than 30C, so they are clearly wrong.

Climate Scientist Dr. Roy Spencer of the University of Alabama, Huntsville; performed a calculation to remove the effect of the 2015/2016 El Niño event http://www.drroyspencer.com/2019/05/half-of-21st-century-warming-due-to-el-nino/ . He showed the observed trend in HadCRUT4 surface temperatures is nearly half the CMIP5 climate model average warming over the same period, and the UAH tropospheric temperature trend is almost zero. Also, "***the observed rate of warming - when we ignore the natural fluctuations in the climate system - is only about one-half of that currently projected by climate models***. Therefore, these models cannot approximate natural climate ocean variability such as ENSO and AMO.

Another important solar global relationship with natural warming climate is the rise in sea levels (SLR)

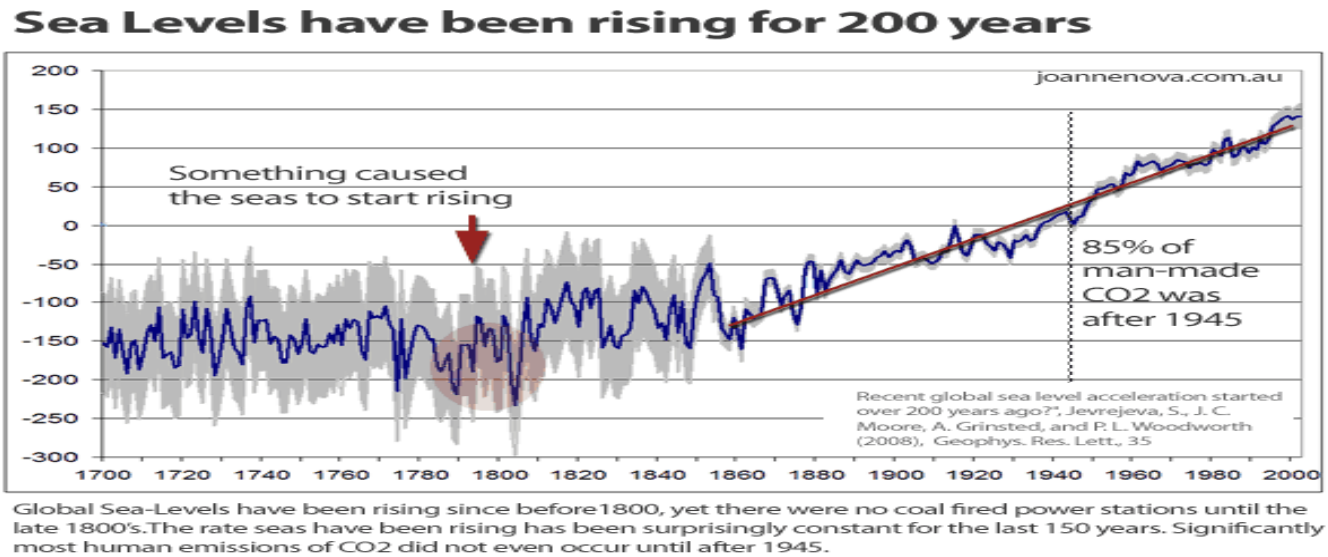


Figure 16a. Global sea levels over the last 300 years, showing the lack of impact by AGW since WW2.

since the LIA due to thermal expansion, refer Figure 16a. **Global SLR over the past 200 years has been fairly uniform at 1-2mm per annum, except for slight dips between 1900-1930 and 1965-1980 during cooler periods**. At the height of the last glaciation sea level was about 120 meters lower than today, so the Holocene warming dramatically impacted global sea levels that rose to several meters higher than today. This level is observed in wavecut platforms in Permian-Tertiary sediments on the south and east coasts of Australia.

Jevrejeva et al (2014) indicate "***The relatively large swings in SLR (5m) over the past 3,000 years are clearly consistent with the millennial scale Holocene climate cycle***."

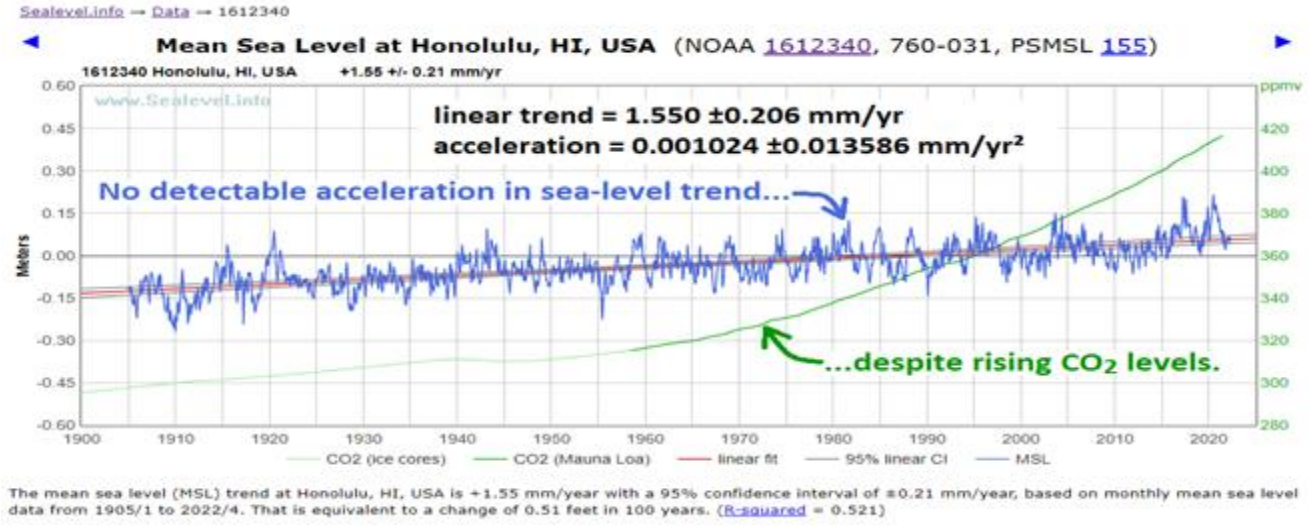


Figure 16b. Honolulu mean sea level over the last 117 years, showing no impact by CO2 (after NOAA).

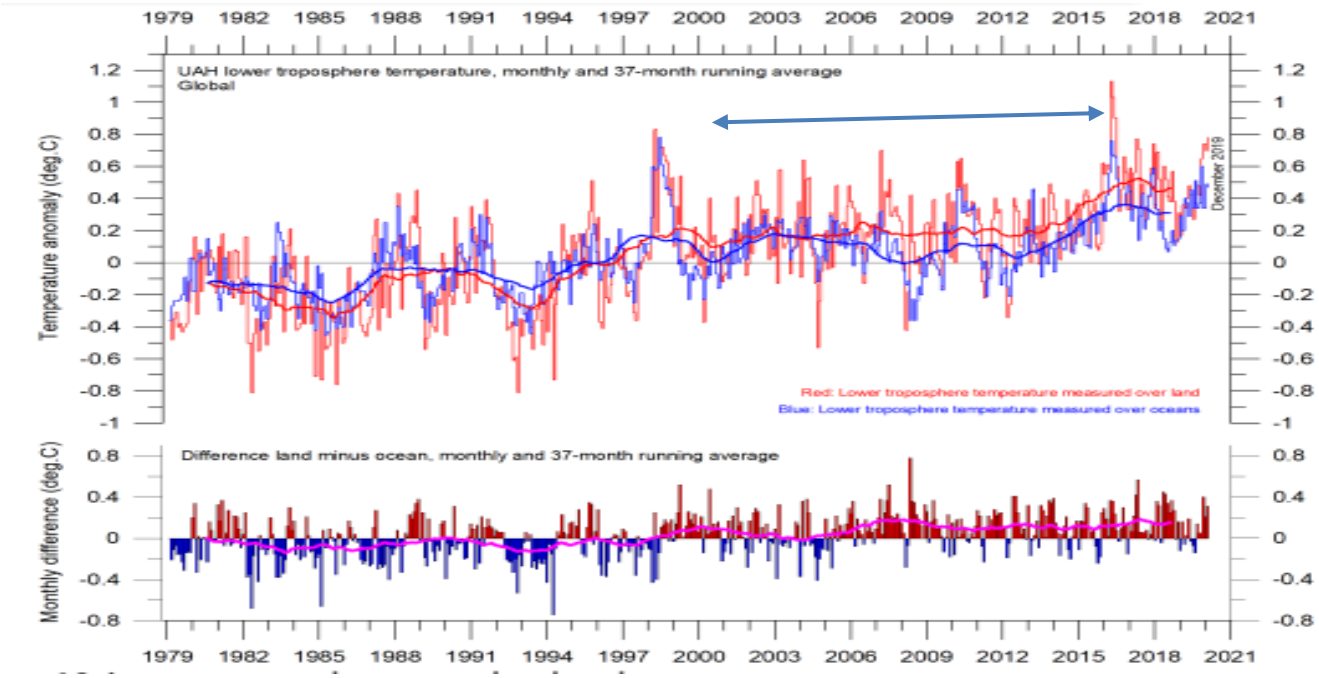


Figure 16c. UAH Lower troposphere temperatures: over land and ocean, 1979-2021.

Global monthly average temperature since 1979 measured by satellite over land and oceans, are shown above in red and blue, respectively. The thin lines represent the monthly average, and the thick line nearly corresponding to a running 3-year average. The blue arrows show the Millennium Pause.

In Figure 16c the latest interdecadal shift in 2000 is associated with a higher temperature plateau especially over land and a reduced rate of warming observed during the Pause, **and characterized by a higher frequency of La Niña**, until the major 2016 El Niño put an end to it. **The Pause caused a lot of academic controversy because it was unpredicted by climate models, it broke the strong 1990's warming trend, and showed that any AGW associated with rising CO2 was not dominant during its 15-year extent, thus totally undermining CO2's current and major long-term forcing credibility**.

The lower troposphere warming more over land than the oceans since 2000 the start of the Pause, may be related to variations in incoming solar radiation, or albedo changes due to increased cloud cover over oceans. Given the consistency of relative land to ocean atmospheric warming since 2006, it is suggested the latter is the case whilst La Nina-ocean events were dominant, the AMO was weakening and the PDO changing to its cold phase.

Despite continuance of slight modern warming due to El Nino's, a number of **researchers including Russians and Chinese are confidently predicting global cooling over the next few decades due to the current solar minima and related enhanced hydrological cycle cloud development, plus the AMO and PDO cold phases will be operating**.

9. Geological History and Cyclic Climate Variability

Geological history is useful because it documents long-term cyclic climate variability and in particular the **lack of evidence for a previous catastrophic global greenhouse episode in Phanerozoic history** since major diversity of marine lifeforms commenced in the Cambrian 570 Mya. **There have been many extinction events during this period, but none solely due to CO2 atmospheric overheating are known.** This suggests an overt solar temperature control, and that apart from periodic Ice Ages (Figures 17 & 18b), the Earth experienced a warm global climate that was generally in energy balance.

Long-term climate variability is caused by external factors such as galactic, solar and Earth orbital cycles; and internal natural variation including ocean forcing, and plate tectonics driven by Earth's core-mantle differentiation, mantle-crust circulation patterns and possibly changing gravity. The general rule is, **the longer the cycle, the more significant the impact is on climate.**

Simon Lewis, 2015 in '**Our incredible shrinking planet'** argues for a gradually increasing gravity on Earth due to core/mantle heavy metal differentiation, that provides extra heat to drive mantle/crust interactions, and plate tectonics causing a current overall shrinking crust at an annual rate of about 20cm. He believes continental plates above subduction zones subsume oceanic crust faster than mid ocean ridge expansion, especially in the Pacific rim, and that **geothermal heat and gases from submarine**

volcanism is warming oceans and helping drive ocean currents and resultant atmospheric warming. Lewis considers increasing gravity has not only driven tectonics but caused extinctions of large species such as dinosaurs and past macrofauna, plus driving evolution and civilization via climate change. Lewis may have a valid case, but we do not need gravity changes to explain climate variability.

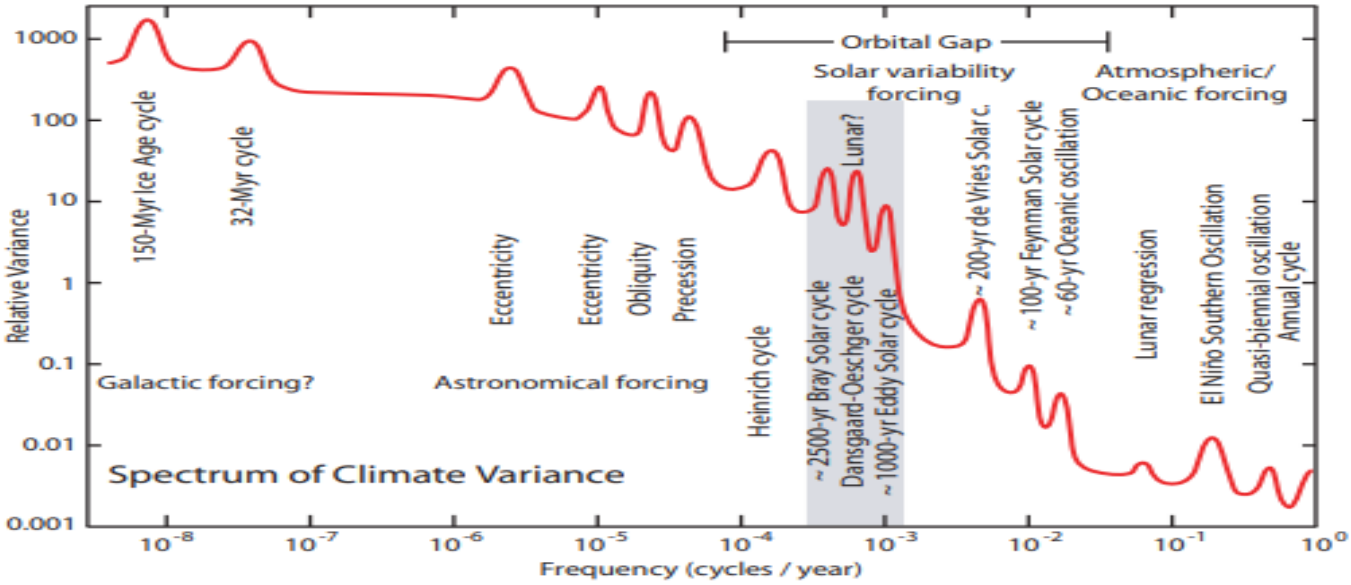


Figure 17. The spectrum of Climate variance and cycles at temporal scales. Adapted by Javier (2017).

In order to understand modern climate and its natural cycles we must know about historical and geological era climate changes that had no human development input. Figures 18a &b shows that during the Phanerozoic Era over the past 545 million years since recognisably modern life forms evolved in the oceans, **it is obvious that temperature and CO2 are in an inverse correlation more often than they are in any semblance of positive correlation.**

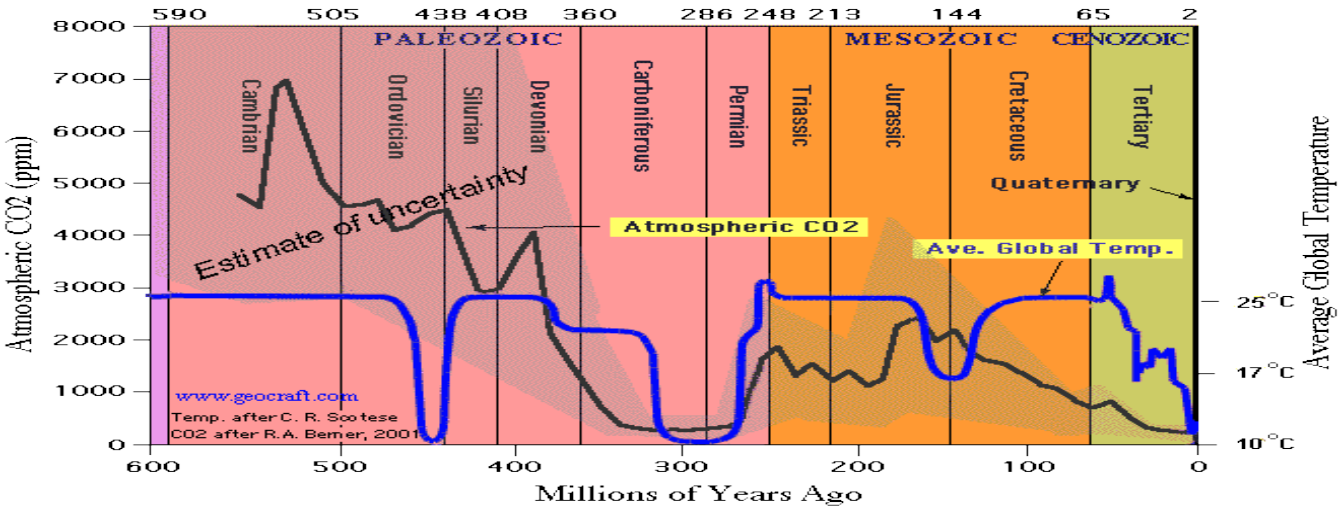


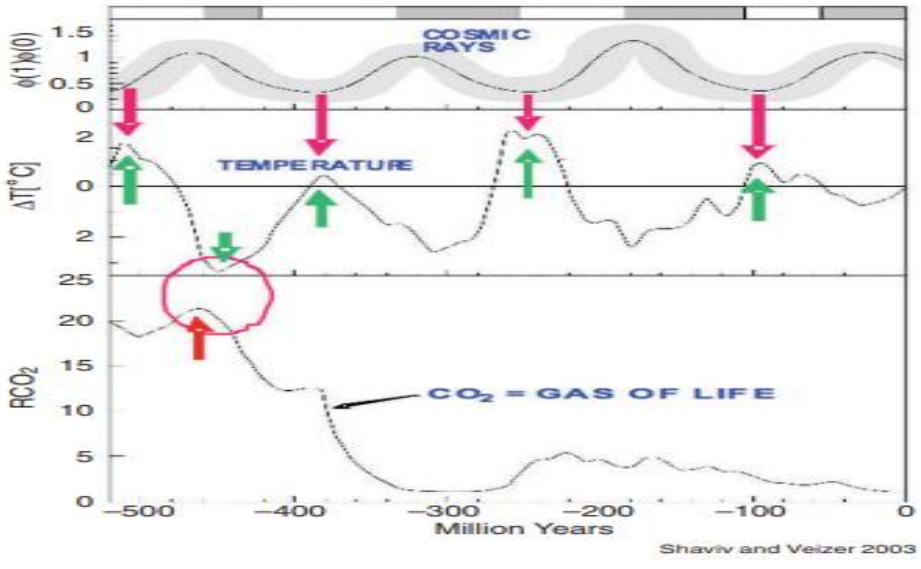
Figure 18a. Earth's long-term proxy record of temperature and CO2 levels. Temperature after C.R. Scotese CO2 after R.A. Berner, 2001.

Atmospheric CO2 levels were very high, above 5000ppm in the Pre Cambrian and have declined markedly since, especially when plants developed during the Carboniferous and Permian when the world's major coalfields were deposited. Late Carboniferous to Early Permian time (315 mya — 270 mya) is the only time period in the last 600 million years when both atmospheric CO2 and temperatures were as low as they are today.

CO2 levels slowly recovered to be above 2000ppm in the late Jurassic, then gradually reduced to about 500ppm during the Miocene which was probably due to carbonate sedimentation in the tropical oceans. According to the unreliable ice core data, two million yr ago CO2 fell to historically low levels of 180-300ppm during the Pleistocene Ice Ages. Presumably then colder oceans controlled the low atmospheric CO2 levels by gas absorption by the sea as the Earth cooled and ice sheets formed, Figures 18 & 19. All this **natural climate variability suggests the "*Earth appears capable of regulating its temperatures and GHG absorption at levels far higher than humans are able to generate*."** Human climate processes are weak in comparison.

During the Phanerozoic the Earth passed through four super-long 150My climate cycles, probably related to the cosmic ray flux changes, caused by passage of the Solar System through various environments of the spiral arms of the Milky Way (Shaviv and Veizer 2003) refer Figure 18b. In these cycles atmospheric temperature peaks correspond with lows in cosmic ray flux, not CO2 peaks, whilst Ice Ages occurred during peak cosmic ray flux.

Three clear examples of reverse T/CO2 correlation occurred, 440, 150 million years and 50 million years ago. Firstly, towards the end of the Ordovician and before the start the Silurian period (circled) temperatures plunged whilst CO2 peaked, secondly at the end of the Jurassic temperature fell dramatically while CO2 spiked.



These cycles included two long and extensive glaciations between 353 and 444 million years ago, when atmospheric CO2 levels were up to 7 and 17 times higher than today. Therefore, **low temperature ice-house conditions don't necessarily require low CO2 levels,** as suggested by the Pleistocene glaciation Antarctic ice cores.

Figure 18b. Phanerozoic temperature fluctuations correspond with the cosmic ray flux and not CO2.

I**n the late Mesozoic and during the Eocene Thermal Maximum, CO2 had been on a downward track for 100 million years, whilst the Earth was about 16C warmer than the present and has basically been cooling since then into the Pleistocene Ice Ages.** The controlling process for this is poorly understood, but could be external natural Earth orbital, solar or cosmic ray variation.

Plimer's 2009 seminal climate work '**Heaven and Earth'** provides a detailed discussion of geological history in reference to climate change and the carbon cycle; "***During the past 150 million years 90% of atmospheric CO2 has been removed by gradual losses due to C burial in marine carbonate and carbonaceous sediments as well as younger coal swamps.***" *However,* "***It was only during Miocene to Recent times that a rough association is apparent as both indices of temperature and CO2 were reduced to historical minima***." It is speculated this 20-million-year long period of cooling and related reduced CO2 levels shown in Figures 19a & 19b may have been due to orbital cycles, solar variability and according to Plimer "*also plate tectonics with associated mountain range building causing increased weathering plus erosion to remove CO2, with subsequent sequestration in carbonate sedimentation.*"

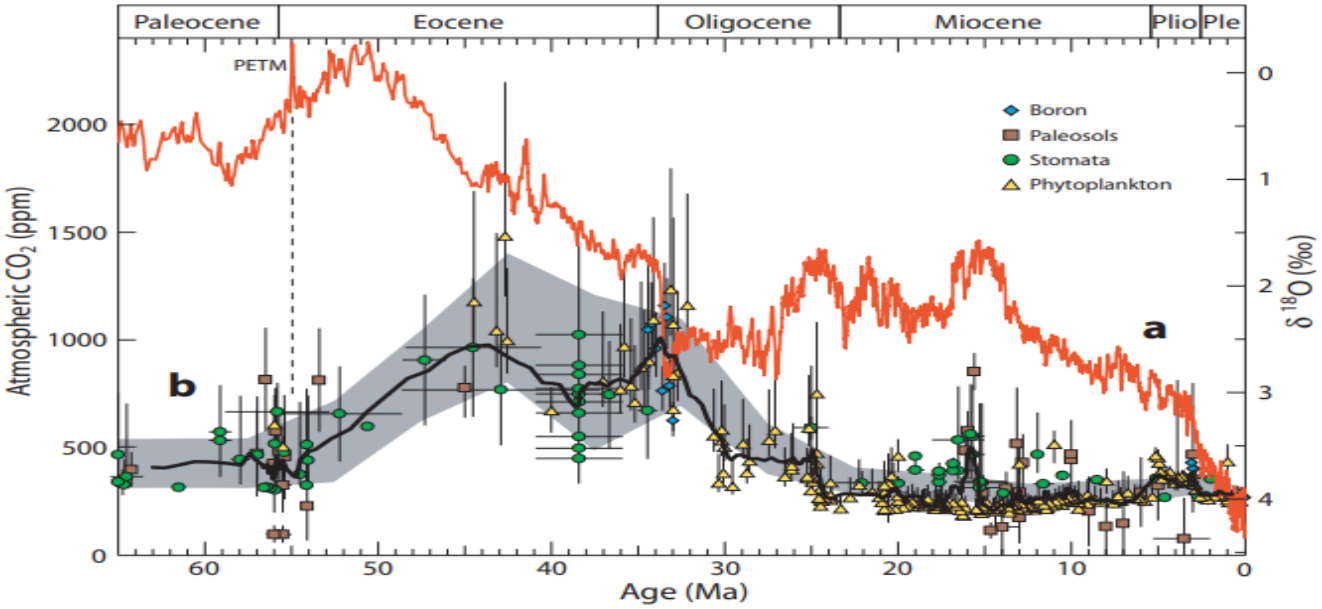


Figure 19a. Cenozoic Temperature and carbon dioxide levels. Global deep-sea !18O curve (orange) from over 40 drilling projects as a temperature and continental ice proxy (Zachos et al. 2001). CO2 data for the indicated proxies from Beerling & Royer (2011). Thick black curve is the 9-point average.

Vinós (2022) said "*Our knowledge of the past improves as we get closer to the present****. If Earth's climate has been controlled by changes in CO2 this should be more evident over the last 66 million years than in previous times****. The Cenozoic has been very climatically varied, from the Eocene hothouse to the Pleistocene icehouse, and therefore constitutes an ideal test for a CO2 control of these climatic changes*" **However, poor correlation is evident between global temperature and CO2 data in Figures 19a and 19b.**

"*The early Eocene, between 56 and 48 Ma, showed the warmest temperatures of the Cenozoic with CO2 levels estimated"* to rise from 500–800 ppm, but then came a 14Ma (-5C) drop in temperatures to the Oligocene (34Ma)

whilst CO2 levels generally rose to greater than 1000ppm. **The initiation of Antarctica's glaciation at the Eocene–Oligocene boundary caused a further 2.5C global cooling whilst CO2 levels stayed high for 2Ma then fell to 500ppm by 30Ma during which temperatures stabilized at 2–4 °C warmer than now from the late Oligocene to the mid-Miocene climate optimum. Then, CO2 levels graded down from 400ppm to 300ppm into the Pleistocene glaciation, this data conflicts with other CO2 proxies in Figure 19b.** Over timescales of millions of years CO2 abundance appears to be controlled only by its magmatic/volcanic production and by its incorporation into vegetation as carbon then into carbonaceous sediments or carbonates, via weathering, that are subsequently buried or recycled .

In summary, climate for the past 540 million years (Phanerozoic) has been a cyclic succession of warm periods when Earth was up to 10C warmer than now, and cool periods three of which resulted in glaciation. CO2 levels have followed a generally decreasing trend from above 5000 ppm during the Cambrian to below 500 ppm, with very low values of <300 ppm only occurring during the two longest ice ages. **Apart from glaciations, there is no positive correlation between Phanerozoic CO2 levels and global temperatures, indeed there are important examples of reverse correlation, so there is clear evidence against CO2 driving past global warming.**

9.1 Plate tectonics and the Pleistocene Glaciation

Plate tectonics has caused island arc formation (Indonesia), continental collision mountain building (Himalayas), the closing (Tethyan) and opening up (Atlantic) of seaways all of which resulted in diversions of ocean and wind current patterns. These processes have changed related heat flow from the lithosphere and oceans to the poles and atmosphere causing local and global climate changes including glaciation events. Mitigating effects that offset short-term biosphere warming include overturning of ocean currents, the hydrological evaporation cycle – cloud development and volcanic eruptions. Sigl et al, (2015) demonstrated that cooling from volcanic sulfate aerosols is also a driver of short-term climate variability.

According to Scher and Martin (2006) **the opening of the Drake passage south of South America 35mya allowed the cold southern circumpolar current to isolate Antarctica and initiate south polar glaciation**. Cold saline and CO2 enriched water from the Southern Ocean gradually moved north as deep currents that helped cool all oceans over millions of years and extend glaciation to the northern hemisphere. At the end of the Pliocene 2.5Mya, plate tectonic subduction-related volcanism closed the Panama seaway. This and the earlier closing of the tropical Tethyan seaway south of Europe and Asia, together with the rise of the Indonesian archipelago, further reduced the effectiveness of Pacific, Indian and Atlantic equatorial currents combining and distributing warm water to the temperate and polar regions.

As global cooling increased glaciers began to form in Antarctica 30 million years ago and in the northern hemisphere in Greenland only about 3 million years ago, thus showing **the difference in climate behaviour between the northern and southern hemispheres that is evident in modern times**.

Thus, **plate tectonics combined with solar and earth orbital variations may have been major factors reducing effective ocean circulation thus initiating and maintaining the recent Ice Ages**. According to Vinós (2022) the modern interpretation of Milankovitch theory says "*glacial inception takes place when summer insolation at 65°N allows more ice to survive the summer every year, thus ice sheet progressively build up*." This process is paced by the 100-kyr eccentricity cycle. Poyet (2021) noted "***Plate tectonics, and orogeneses have major long-term impacts as they change all circulations on Earth**, be they atmospheric or oceanic and as these circulations regulate largely the distribution of energy and heat on the planet, they set the patterns that define the global and regional climate."*

Jiménez-Moreno et al. (2019) rightfully stated that "***The Pliocene is a key period in Earth's climate (and human) evolution, as it records the transition from warm and stable conditions to the colder and more variable glaciated climate of the Pleistocene**."* This resulted in the closing of the Mediterranean Sea at the Strait of Gibraltar, its drying up and deposition of salt deposits, so humans had to migrate elsewhere.

In reference to Figure 19 below Pagani et al, 2005 said *"**There is no evidence for either high pCO_2 during the late early Miocene climatic optimum or a sharp pCO_2 decrease associated with growth of Antarctic ice sheets**. Changes in oceanic circulation driven by plate tectonics (opening of the Drake Passage) and the presence (or lack) of a large polar ice sheet were the primary drivers of Miocene climate change."*

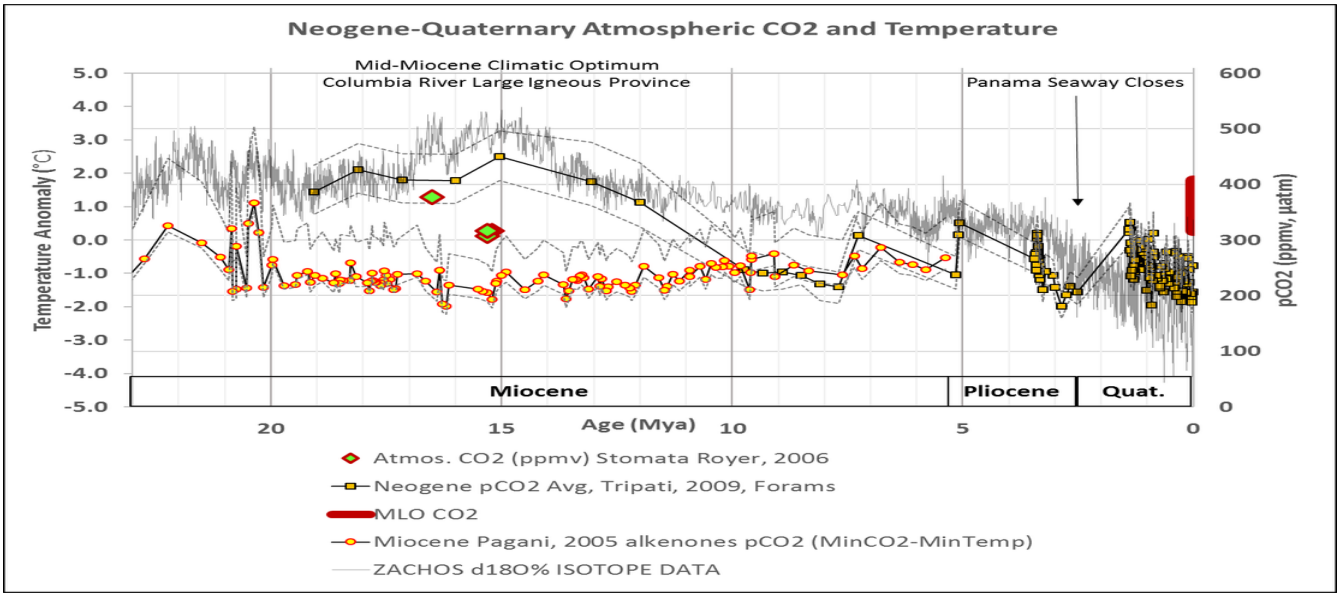


Figure 19b. Miocene-Quaternary Global temperature and carbon dioxide levels.

The last 1.8-million years during the Pleistocene Epoch has been a series of 100,000-year glacial periods punctuated with short 10,000-15,000 interglacial periods like the present one. The early glacial cycles were governed by the 41-kyr obliquity cycle for most of the Quaternary Ice Age prior to the Mid-Pleistocene Transition (MPT), and the later 23-kyr and 100-kyr(eccentricity)cycles were not seen prior to it. We don't know precisely what caused the MPT change in cyclic behavior, but Earth orbital and solar influences are most likely. However, we do know from Figure 18 **that it was not due to CO2 because the**

temperature trends always peak centuries before the correlated CO2 peaks. In addition, the Dansgaard-Oeschger events (D-Os) that mark extremely rapid changes of climate, occurred without human intervention about 20 times during the past 100,000 years, the last of them, the "Younger Dryas," happened 12,800 years ago, refer Figure 20a.

Scotese (2018) stated "*Earth undergoes alternating periods of ice ages and warming whenever a continuous continental landmass extends from one polar region to the other while at the same time there exists a large polar continent capable of supporting thick ice accumulations. These conditions existed 300 million years ago during the Carboniferous glaciation as they do for the Earth today.*" "***The Earth may have never been so cold over its entire geological history as the last 0.2% of its existence (900 kyr), this has seen the most catastrophic succession of glaciations, such that hominids could only survive by mainly being a tropical species and finding refuge essentially in Africa***" **and similar warmer and wet environments.**

10. Holocene - Recent Climate and CO2

As summarized by Javier (2017) "***Holocene climate is characterized by two initial millennia of fast warming followed by four millennia of higher temperatures and humidity, and a progressively accelerating cooling and drying for the past six millennia during the Neoglacial.*** *These changes related to redistributing insolation between different latitudes, are driven by variations in the obliquity (amount of axial tilt which changes over a 41,000-year cycle) and precession (wobbling of the axis over 19,000 to 23,000 years) cycles, as well as the long-term transport of heat by ocean currents.* ***The four millennia of warmer temperatures are called the Holocene Climatic Optimum which was 1-2°C warmer than the little Ice Age,"*** **and about 1°*C* warmer than now.**

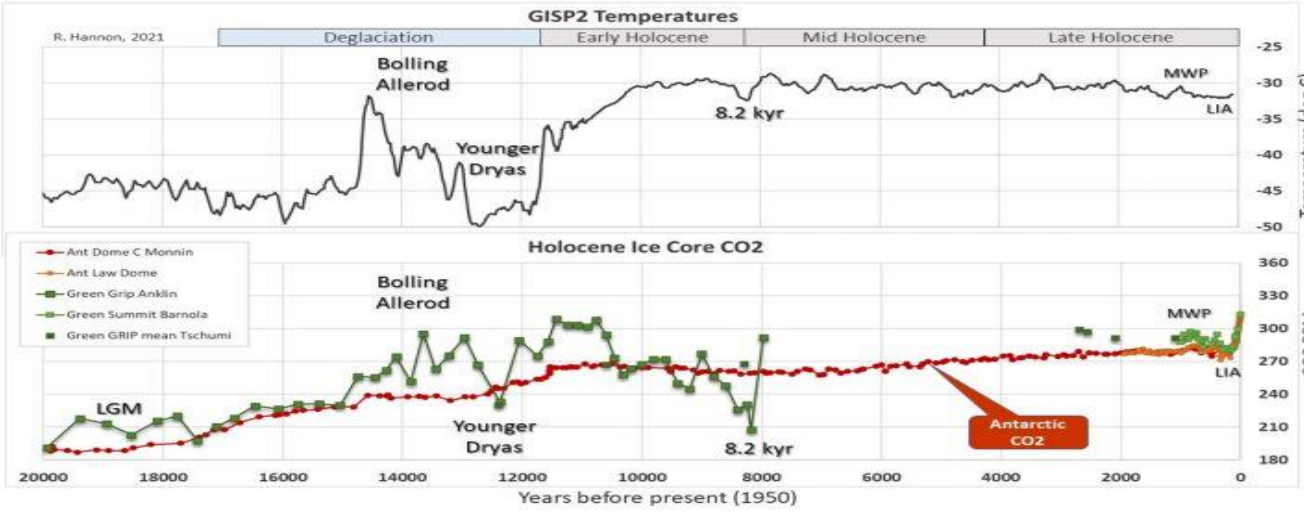


Figure 20a. Greenland ice core T and CO_2 compared to Antarctic ice CO_2 over 20,000 years. From Hannon 2021: *GISP2 ice core temperatures derived from oxygen isotopes by Alley 2004. Greenland ice core CO_2 (green line) compared to the muted Antarctic ice core CO_2 composite (red line).*

Figure 20a shows T/ CO2 data from Greenland and Antarctica during the last glaciation to the present, which importantly indicates the **Greenland CO2 data is far more variable than the composite, possibly naturally homogenized Antarctica CO2 data. It is also generally higher and more closely follows the temperature data until the Holocene climate optima about 10,000 years ago**. This implies that the northern hemisphere behaved differently than Antarctica, and that CO2 levels in the Arctic during the early Holocene were up to 300ppm, comparable to 20th Century levels up to 1960.

Following the last glacial phase about 16,000 years ago when CO2 levels were <250ppm, deglaciation started through the Younger Dryas and transitioned into the Holocene warm period by 11,500 years ago. According to Milankovitch theory, "*as long as the North and South Poles retain their present thermally isolated locations, the polar latitudes will be frigid; and as the Arctic Ocean keeps oscillating between ice-free and ice-covered states, glacial-interglacial climates will continue".*

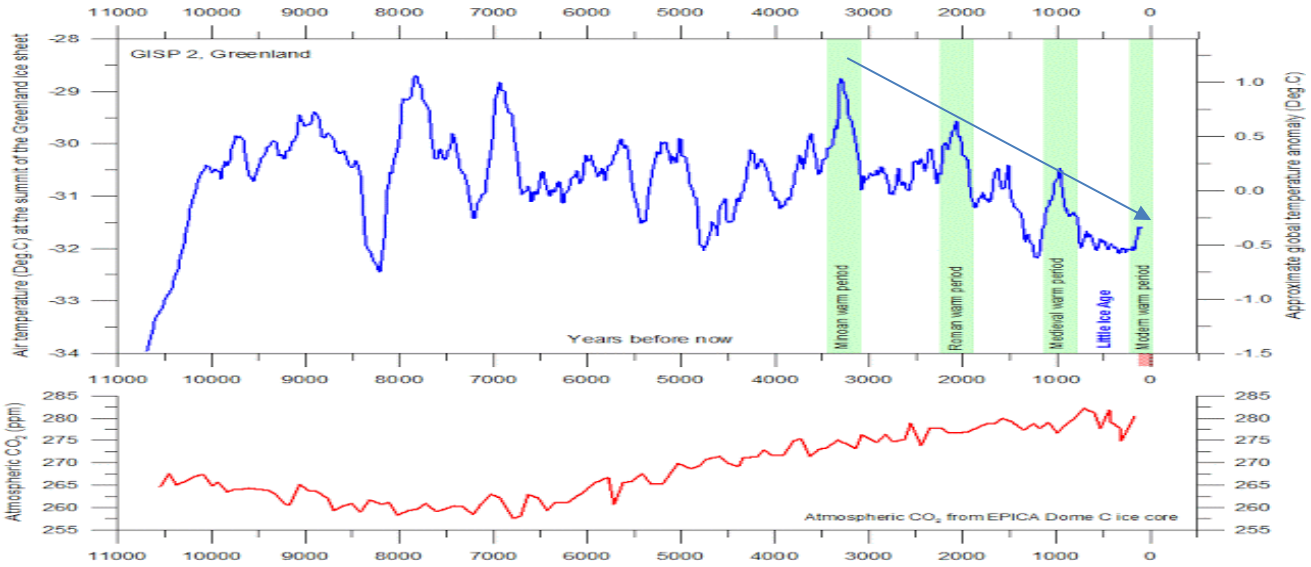


Fig. 20b. Greenland Ice core derived Holocene temperatures and Antarctic CO2 from Humlum 2016

Figure 20b shows that **Earth is past the warm peak of the current Milankovitch interglacial cycle and has been generally cooling (blue arrow) for the last 3,500 years after the Minoan warm period**. This cyclic cooling interval to the Little Ice Age paralleled unsteady solar decline after the 'Super-Grand Maximum' of ~3000BC. **The 3,500-year-long Greenland cooling mocks IPCC computer models that predict warming by the simultaneous (slow) rise in Antarctic CO2 levels**. This general disconnect between temperature and CO2 trends is a clear marker that CO2 was not controlling Holocene climate.

The LIA is not a special period, but part of a series of recurring phenomenon that due to the progressive neoglacial cooling of the planet, it just happens to be the last and more remarkable cooling period we humans have experienced. In fact, according to Wishart (2009) "***tens of millions of people in Europe died of cold, disease and hunger due to climate change and even the English channel froze in 1684***." It

was preceded by the Medieval warm period that was up to 1C higher than peak modern warming with mean sea temperatures 1.5-2C warmer, whilst CO2 levels were apparently below 300ppm from ice cores.

10.1 Antarctic Ice Cores - CO2 data issues

The CO2 level as measured by Dome C Antarctica ice cores has been slowly rising from 260 ppm 8000 years ago after Holocene Climatic Optimum to 285ppm in the LIA, but then rising strongly beyond 410ppm since 1950 together with modern industrialisation, refer Figure 22. This data supports AGW, but is now highly suspect and has been proven by Jaworowski (2009) to give false low CO2 levels due to bubble contamination.

Poyet (2021) reports that **Jaworowski's recent research on the Greenland ice cores has shown that the closed system assumed by the trapped air bubbles in the ice is not valid**, **so that a significant loss of CO2 has occurred during the hundreds of years of snow compression to firn and then ice at depth.** Also, contamination of the ice core occurs in the drilling process or decompression during retrieval. The temperature graph however, is not similarly compromised.

He states "Furthermore, ***the evidence from direct balloon measurements of CO2 in the atmosphere indicates that the 19th century average concentration was 335 ppmv***"(Slocum, 1955). More than **90,000 direct chemical measurements** (by *the Pettenkofer method to 1961, then* by cheaper infrared spectroscopy to 2004) **in the atmosphere at 43 Northern Hemisphere stations, show that CO2 varied very significantly [290-440ppm] over that period** (Beck, 2007, 2008). Finally, and very importantly, "a study of stomatal frequency in fossil leaves from Holocene lake deposits in Denmark, showing that 9,400 years ago CO2 atmospheric level was 333 ppmv, and 9,600 years ago 348ppmv, finishes (sic**) to falsify the concept of low and stable CO2 air concentration previous the advent of the industrial revolution."**

The direct measurements of CO2 imply that the relatively flat Ice Age Antarctica ice core CO2 data shown in Figure 20a is homogenized and incorrect, or not representative of the rest of the world. However, when ice core spectroscopic data was compared with the early chemical readings there was no correlation, so the older data was rejected as ice core researchers opted to believe their data because it supported the AGW concept. Once again, we see researchers ignoring relevant data because it doesn't fit their ideology. Given the fact that a lot of the modern Mauna Loa daily CO2 readings are also rejected according to Plimer (2009), the recent strongly rising CO2 record may be a subjectively managed one, designed to fit the AGW hypothesis.

Thus, Jaworowski (2004) stated, "***the basis of most of the IPCC conclusions on anthropogenic causes and on projections of climatic change is the assumption of low levels of CO2 in the global pre-industrial atmosphere. This assumption, based on (recent) glaciological studies, is false.*** *Therefore, IPCC GHG projections should not be used for national and global economic planning."* **This is a critical blow to the AGW thesis that post-LIA industrial CO2 growth drove modern warming**.

Nova in '**Climate Change the Facts' 2020** noted "**Paleoscience is stuck in an endless loop of circular reasoning and confirmation bias. All other proxies bend to ice cores**." The Antarctic CO2 data had been

generally regarded is the best global record, but Hannon (2021) shows **the higher more variable Greenland data indicate specific northern Hemisphere changes not seen in Antarctica due to its isolation**. Therefore, maybe the Antarctic data record is just representative of this Polar area only. Obviously further research needs to confirm this, but it is clear the Antarctic CO2 data is highly suspect.

Most fossil fuels, like oil and coal, which are ancient plant and animal material, have the same low δ13C isotopic fingerprint as other plants. The overall decrease in atmospheric δ13C– since 1750 is most likely explained by the addition of carbon dioxide to the atmosphere that comes from the terrestrial biosphere and/or fossil fueled industrialization. Plimer (2009) noted "*It has been estimated that annually the atmosphere exchanges 90 billion tonnes of carbon with the surface ocean and 110 billion tonnes with vegetation, showing atmospheric residence time for CO2 is less than four years. A quarter of all human CO2 emissions are naturally sequestered in soil each year***." So, doubt exists about the size of the human imprint in modern CO2 rise. Various authors have provided estimates of human levels between 4% - 15% with <10% being likely, this however needs to be better quantified.**

Apart from minor human sourced CO2, atmospheric CO2 has mainly increased since the end of the Little Ice Age because the tropical oceans are warming and degassing faster than the cold saline oceans such as around Antarctica are absorbing CO2. However, according to Buesseler et al. (2020) "***it seems that the oceans are sequestering up to twice as much carbon dioxide as previously thought***". **This is due to "The Biological Carbon Pump** (BCP) … **the process by which CO2 is absorbed by the phytoplankton in the oceans**. Small changes in the efficiency of the pump can significantly alter ocean carbon sequestration and hence atmospheric CO2 and ecosystem functioning in intermediate waters. "

As Steele (2020) summarizes "***If ocean photosynthesis and marine productivity improves, and all the added CO2 entering the ocean is sequestered into organic matter, there would be no change in ocean pH****. And indeed, marine productivity has increased as the earth warmed. Productivity increased after the last glacial maximum ended, and increasing organic sediments on the sea floor suggest increased carbon sequestration*". Thus**, polar oceans should be experiencing greater marine productivity, which has been confirmed, "*as between 1998 and 2012 the productivity of the Arctic ocean increased by 30%.*"**

Mt Pinatubo erupted in 1992 producing major dust clouds, SO2 and other aerosols in the northern hemisphere that cooled the global trend for several years, and also significant CO2 output that dwarfed human emissions that year. Given that tens of thousands of volcanoes exist under oceans and polar icecaps, mainly over divergent plate boundaries, means that **large amounts of crustal heat, CO2 and volatiles are semi-continuously being released into oceans, and within volcanic arcs** such as the Antarctic peninsula, causing local warming. Elsewhere in Antarctica cyclic warming and cooling trends shown in Figure 22 dominate, but there is a millennia long cooling trend that continues to the present.

In Antarctica, Figure 22 shows no strong temperature trend, despite cyclic fluctuations, is observed in direct response to the significant increase in CO2, over the period 1850-2000, especially after 1970. This

historical evidence shows that CO2 has little or no immediate effect over Antarctic temperatures, and is divergent from the measured close ice core temperature/CO2 correlation over the past 800,000 years. It also raises doubts about the role of CO2 over glacial terminations and during modern warming.

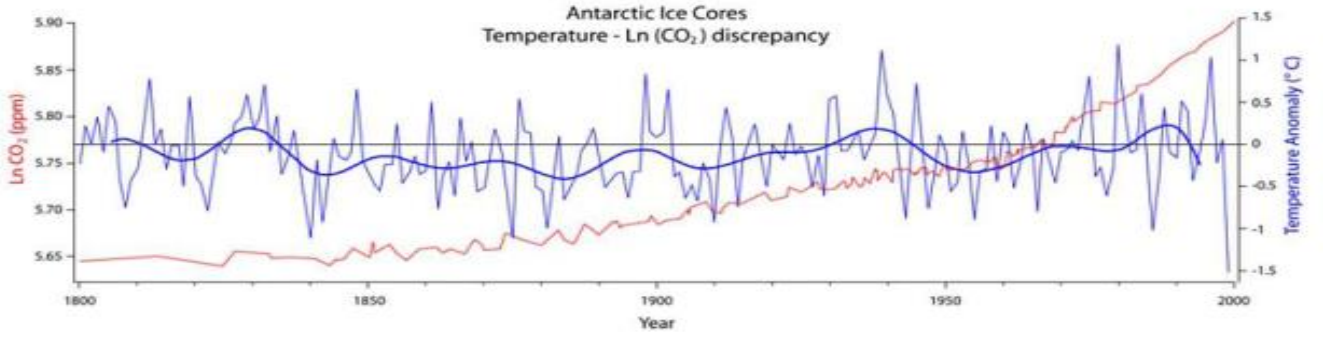


Figure 22. Temperature (blue) and *CO2 trends (red) from Antarctic Ice Cores, 1800-2000.* *Revised 800 kyr CO2 Data (to 2001)**.** Source: NOAA, Bereiter et al., (2015); and from NOAA annual mean CO2 data (2002–2017). T curve for the past 200 years from 5 high resolution Antarctic ice cores. Source: Schneider et al. (2006).*

In modern times, with the notable exception of the 1980-1998 warming period, the CO2 atmospheric trends were contrary or generally independent from the cyclic temperature trends, thus showing they have no close correlation during the Holocene to now.

According to a University of Cambridge press release dated May 13, 2022, "The eastern Antarctic Peninsula Ice Sheet has grown in area over the last 20 years, due to changing wind and sea ice patterns." This occurred *"**In the absence of significant atmosphere and ocean warming over the past 20 years whilst CO2 levels rose strongly,** the dominant control was found to be a change in regional wind patterns over the Weddell Sea, which served to push sea ice against the ice shelves."* This correlation behavior is markedly different to the traditional ice core record during the Ice Ages, but the Antarctic CO2 data as discussed previously is now highly suspect. Thus, **the divergent behavior of CO2 and temperature during geological history plus the Holocene to the present means that other more dominant natural factors were operating** and/or new sources and sinks of CO2 are present. **So, the AGW hypothesis as a dominant process is clearly rejected by both geological and historical data.**

Critically, if humans had not unlocked some of the carbon stored as fossil fuels, which had been in the atmosphere as CO2 before previous sequestration by plants and animals now within sediments, life on Earth may have soon been starved of this essential nutrient and would begin to die, probably during the next glaciation. Patrick Moore (2015) went further "*Human emissions of carbon dioxide have saved life on Earth from inevitable starvation and extinction due to lack of CO2*". The IPCC doesn't want this known because it would weaken a key argument for their demonisation of CO2 and its required reduction.

Interestingly, Cambridge University researchers who examined variations in the Earth's orbit and global climate patterns calculated that **the next ice age should begin within the next 1,500 years:-** Figure 23. Javier (2017) agrees and concludes ***"By orbital considerations alone the Holocene doesn't have more***

than 4500 years left maximum before glacial inception, - but it could have as little as 1,500 years left if it just runs as per the average interglacial of a 13.8 kyr average length."

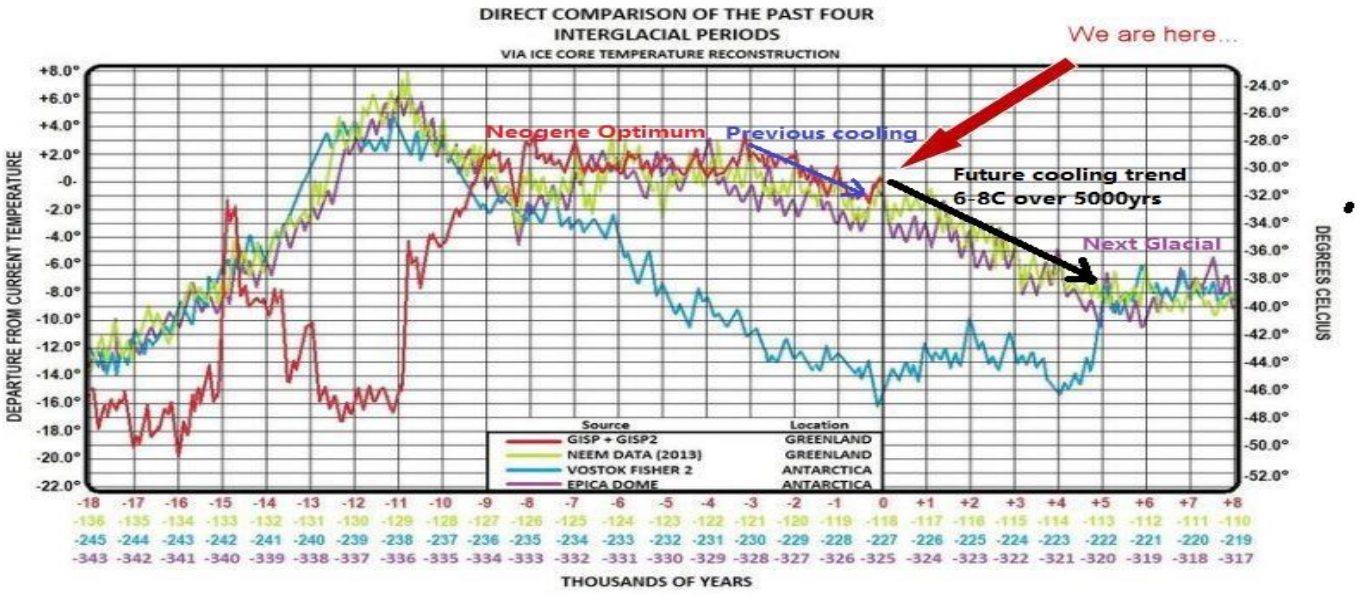


Figure 23. Interglacial temperature trends from Ice Cores, indicating likely future cooling trend. The red line is the Greenland Neogene temperature trend. Will we follow the black arrow trend?

However, given the fact that Antarctica has been cooling for the past 2000 years and Greenland for 3500 years as shown in Figure 20b we may not have that long to wait. For example, the average temperature at the Amundsen–Scott South Pole Station between April and September 2021, was a frigid minus-61 Celsius, the coldest on record, obviously AGW is not happening there!

11. Global Warming Benefits

In Goklany (2018) the late eminent physicist Freeman Dyson said "***The non-climatic effects of rising carbon dioxide particularly on plants are dominant over the climatic effects and are overwhelmingly beneficial for humanity.*** *Second, the climatic effects observed in the real world are much less damaging than the effects predicted by the climate models, and have also been frequently beneficial. "* However, the popular media doesn't recognise the positives of current slow global warming and rising CO2 for plant fertilisation and crop growth.

Record harvests in Australia and worldwide plus the greening of the planet generally and expansion of forests are ignored by alarmists, even though they have a major impact on world population environmental sustainability and the planet's ecological health.

Benefits include the extending range of plant species and duration of growing seasons especially in higher latitudes, as a result of the stronger photosynthesis effect that allows plants to use less water and grow more efficiently; this strengthens agriculture and forestry industries. **It is also expected that**

a further 10% increase in atmospheric CO_2 induces a 14% increase in global water use efficiency by vegetation. Thus, plants can extend their usual topographic range and grow in more difficult climates.

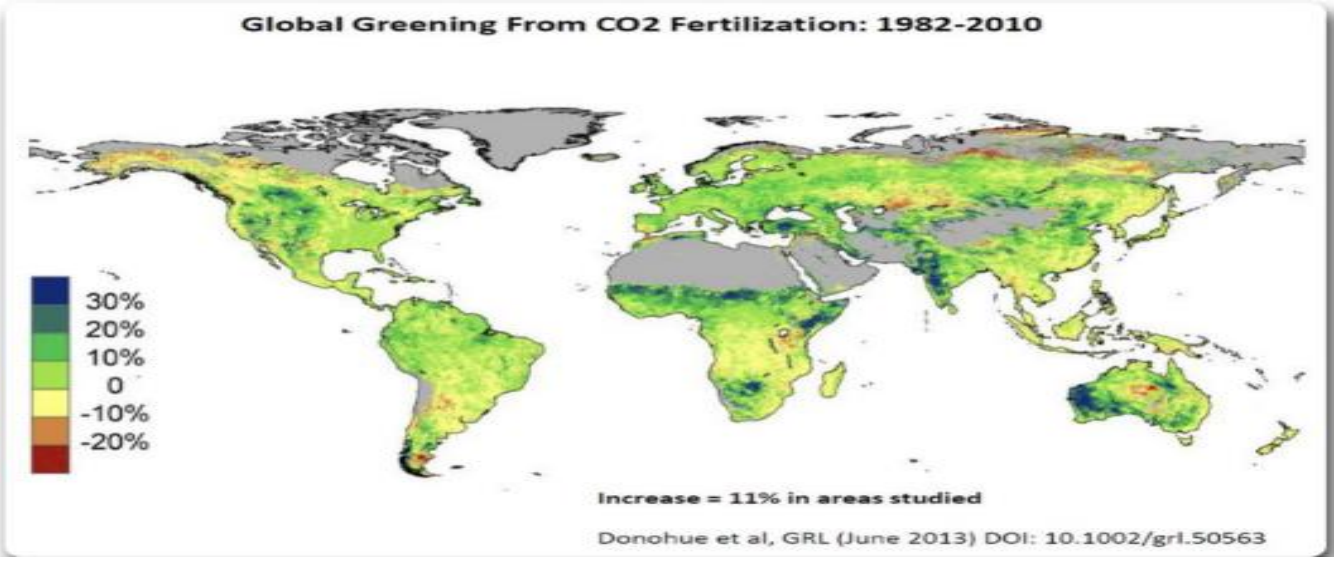


Figure 24. Global greening due to CO2 fertilization 1982 to 2010.

The **improved fertilisation has produced about 15% greening across the planet**, refer Figure 24, and a 50% increase in vegetation in parts of Mali, Mauritania and Chad during 1982-2003. This **plant growth in the Sahara and the Sahel has been caused by an increase in both CO2 and rainfall since the mid-1980s**.Alimonti et al (2022) noted *"Gross Primary Productivity (GPP) from 1900 to 2020 as the result of (a) physiological effect of leaf level changes directly stimulated by carbon dioxide, (b) effect linked to the overall increase in leaf mass and c) effect of climate change.* ***Overall, the increase in GPP from 1900 to 2020 is estimated to be 30%*** *."* "in absence of greening driven by CO_2, we would have a relevant decrease in agricultural production with significant negative impacts on global food security."

Crop productivity and extension to higher latitudes are favored by a warmer environment and since the LIA, the conditions have considerably improved enabling the cultivation more agricultural surfaces in northern latitudes and higher altitudes than previously possible.

The U.S. Department of Agriculture reports, corn, rice, and wheat, the world's three most important crops, set production records again in 2020 follow strong gains in previous years. Most of the increase in agricultural productivity over the last century was enabled through technologies that rely on fossil fuels: nitrogen fertilisers, synthetic pesticides and irrigation. **Increased CO2 fertilisation has also increased crop yields by 10–12%, thereby, reducing the area of habitat required for food production**. Increased CO2 has fertilized the oceans, in particular the cold Southern Ocean where it promotes the growth of organic species, micro- plankton with resultant improved productivity of fisheries.

In 2015 Patrick Moore one of the founders of Greenpeace said in the Annual GWPF lecture: '**Should We Celebrate Carbon Dioxide?** ' that "*there is certainty beyond any doubt that CO2 is the building block for all life on Earth and that without its presence in the global atmosphere at a sufficient concentration for plant food this would be a dead planet." He goes on* **"Even at the today's concentration of 400 ppm plants are relatively starved for nutrition as the optimum level of CO2 for plant growth is estimated about 5 times higher at 2000 ppm**;" **Clearly continued CO2 growth is important for humanity and the planet's environmental future.**

We have fewer weather and climate related problems, agricultural productivity is higher, and there are credible models that ascribe these improvements to rising levels of CO_2 *and* warmer weather. Legates (2019) states "*Warmer conditions, such as what we currently are experiencing, exhibit less climate variability than colder conditions.* Additionally, **global warming produces warmer nights in higher latitudes thus curtailing winter mortality and fuel bills.**" Therefore, increased CO2 can be seen as a good thing from both moderate warming and ecological aspects, as life generally speaking flourishes and adapts in warmer and wetter conditions such as in the tropics, and struggles to survive in colder and dryer i.e., polar environments.

Plimer in '**Climate Change the Facts' 2014** goes further, "***The history of the planet shows that there is a huge increase in biodiversity during warm times and that extinctions are universal in colder times,***

when ecosystems are reduced or changed." "We humans, of course, have evolved and tolerated all manner of temperatures by adapting to the warms and colds of the Holocene and … the Pleistocene." These include 26 major glaciation/interglacial cycles over the past 2.6 million years. Thus, being survivors of such drastic climate changes, **obviously we are extremely adaptable to wide variations in climate. Further improvements through technology will help us adapt to whatever future climate brings.**

In conclusion, CO2 emissions growth and slightly warmer temperatures will improve the planet's environment and ecological sustainability for many species and our adaptable human civilization. Over the past century during which we have experienced 1.1°C of warming, human life expectancy doubled; and the proportion of humans living in extreme poverty dropped from 72% to less than 10%.

12. Australian Climate Science

Management of climate science and observations in Australia is made by the Bureau of Meteorology (BoM) who conduct actual station temperature and SL readings, massage the information for weather and climate forecasts, and then present their final data to the GHCN in the UK for computing global temperatures and models. The **BoM provide their climate data to the CSIRO for use in their climate models and further research leading to presenting regular climate reports and advice to State and Federal governments**.

Australia had an excellent historical network of hundreds of climate stations particularly in the more settled Eastern Australia, that were operating from 1860 and utilised best practice Stevenson screens and daily measurements. **Unfortunately, our BoM** and some other national climate agencies including NOAA, GISS have in recent years **significantly reduced the number of land measuring stations especially in rural areas in favour of more accessible urban positions** that unfortunately are subject to increased local urban warming and therefore are less reliable to measure global warming.

12.1 Temperature data adjustments

The BoM, (NOAA and NIWA in New Zealand) **apply similar homogenization techniques to their temperature datasets to eliminate local climate variations and urban warming, site changes** etc. **These however, also manage to apply a warming bias to rural areas and historical data, whereby older cooling trends are changed to warming trends to suit their agencies AGW narrative**.

This is unethical, and amounts to scientific fraud, **especially when the techniques applied are not made available for independent study, the data is not comparable on a yearly basis and the historical raw database is trashed in the process**.

The Bureau's two most recent temperature remodeling campaigns have been carried out to create what is known as the Australian Climate Observations Reference Network – Surface Air Temperature database (ACORN-SAT). The first revision was in 2012 with the results shown in Figure 25a. Then, in 2018, an updated version increased the apparent rate of warming for the Australian continent by a further 23%, from 1.00°C to 1.23°C per century between 1910 and 2016.

Dr Marohasy editor of '***Climate Change: The Facts 2020***,' has reported extensively about the BoM's data manipulation processes, in particular its homogenization techniques that have resulted in an excessively revised temperature database unrecognizable from the raw original data. Further details of the BoM's mismanagement of climate data are presented in Plimer (2021) '**Green Murder'.** He complained **"There is no QA/QC process in climate science which allows for the fraudulent "homogenisation" of data with no personal consequences…yet the keepers of the data are neither accountable nor release data for independent checking."**

The BOM in recent years **has rejected as "unreliable" the historical best practice thermometer-based temperature data from before 1900, thus discounting the historically high readings before and during the great Federation drought of 1895-1902.** This early data inconveniently had previously held the temperature record of 53C at Cloncurry in 1889 and Bourke in 1877. Marohasy considered the basis for **the data rejection appears spurious and ill- considered as this data is an important and rare consistent record for the southern hemisphere**.

Interestingly, GHCN and HadCRUT have used the old data as a temperature record for Australia back to 1850, so it was good enough for them but not the new activist BoM. **It is understood that the original temperature data for Australia since 1910 showed very little cumulative warming until after 1990**, refer Figure 25b.

The following Figures 25a,b of BoM and GHCN data from Roberts (2016) show the modern adjusted data versus the older historical version of Australia's temperature trends.

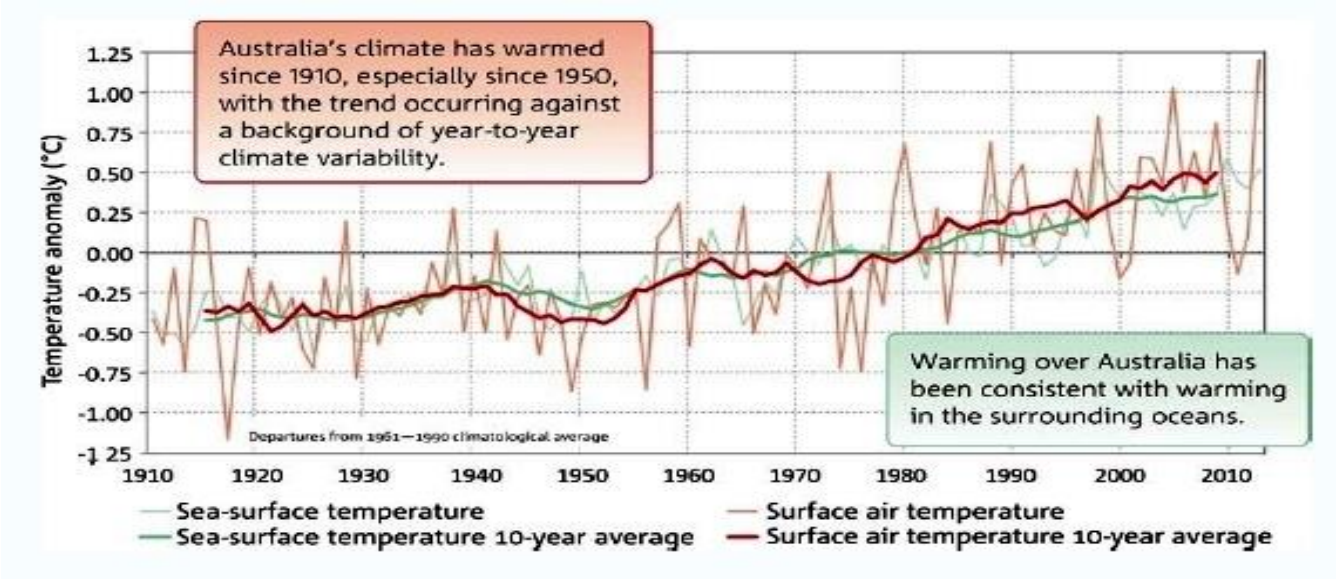


Figure 25a. Australian annual average sea and land temperatures 1910-2013. From the CSIRO 2016.

A trend of 0.9°C per century was stated for this adjusted data which shows a relatively flat trend to 1970 then a modest but steady rise to now, with no marked acceleration in 1980-2000 or strong El Niño effects as indicated in global datasets. It is interesting that the land surface temperature trends match the sea-surface trends reasonably well until 1980, then the land is warmer. This suggests UHIE is happening over the last 40 years exaggerating modern warming.

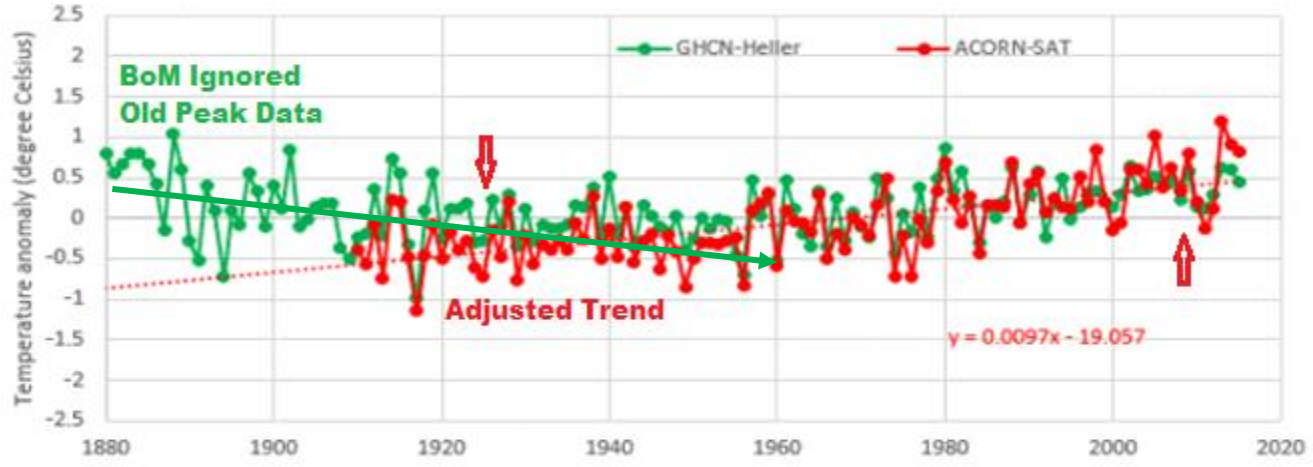


Figure 25b. Heller's reanalysis showing Australian temperature maximums 1880-2015. Roberts (2016)

Tony Heller's reconstruction of Australian temperatures since 1880 using the GHCN original temperature data for Australia (Green) is compared with the BOM's homogenised data (orange) see Figure 25a.

It is evident in the GHCN data that Australia experienced an 80-year cooling trend of about 1°C up to 1970, from high peaks in the 1880s-1890s that were at least similar to current temperatures and more

likely were hotter than today. Both datasets show a post 1970, 0.5C warming trend peaking at the strong 2016 El Nino event. It is understood that this data is weighted to SE Australia, with fewer stations in central and western regions compared to modern BoM sites, nevertheless the cooling trend is impressive and in part matches the global cooling trend from 1880-1910 shown in Figure 4. However, the BoM does not recognize any of this hotter data earlier than 1910 because it would spoil its paramount catastrophic AGW story.

In Roberts (2016) Marohasy advised: "***In reality, the hottest years ever recorded in Australia are probably 1914-15; the hottest January perhaps 1896*** *– when people were evacuated from inland places like Bourke in western NSW.*" "*Of course, the late 1930s and early 1940s were also hot.* ***The summer of 1938-39 at Rutherglen in Victoria (in the Murray Darling Basin) was a full 2°C hotter than the ten most recent summers*** *–including this last 2016 summer*." Therefore, "***There is nothing unprecedented about recent temperatures in Australia***."

In Figure 25b, the weak warming from 1970 - 2016 is contrasted by the UAH satellite data in Figure 28 that records a slight cooling from the El Nino peak in 1998 through the Pause to 2015. Thus, the real Australian climate trend may be moderate cooling to mid-20th Century and then mild warming to the present with no evidence of an acceleration of AGW warming as required in the failing IPCC GCM's the CSIRO and BoM support.

Regionally, **the BoM also have adjusted the remaining historical temperature records throughout Australia so that the original trends and peak records have substantially been changed**, refer Figures 26 & 27. Nova (2015), Marohasy (2016) and Lloyd (2017) have collectively queried the BoM on their dodgy homogenization practice and manipulation of historical data, these issues were discussed further by Plimer (2017) but remain unresolved.

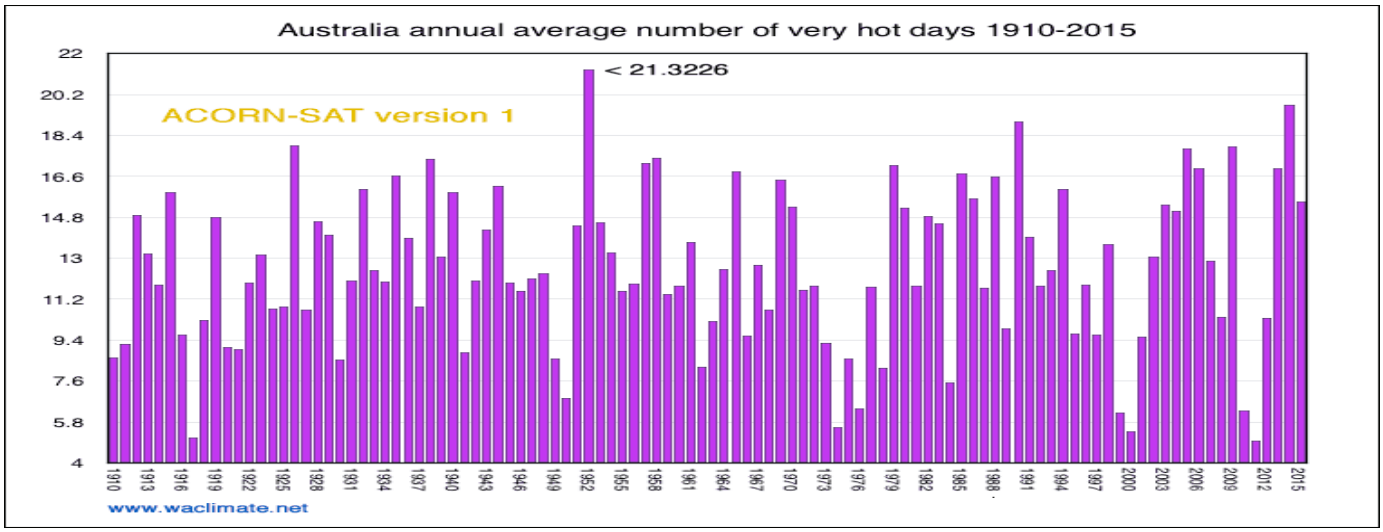


Figure 26. The BoM ACORN 1 & 2 dataset changes to Australia's temperature records 1910-2018
Sweeping changes in record hot days? The Bureau of Meteorology has adjusted historical raw data to make ACORN 1 and has adjusted that further to make ACORN 2, nothing is sacred for the cause!
This animation points at how the record high averaged number of very hot days in 1952 within the

ACORN 1 dataset was reduced by 24.1% in the ACORN 2 dataset, and the ACORN 1 averaged total for 1952 is still more than the ACORN 2 averaged total for 2018.

Their new Acorn network of climate stations has virtual sites spread to cover previously unrecorded central Australia, these warm sites have equal rating to traditional cooler coastal sites and inland towns, so effectively BoM's recent highest ever annual temp trends cannot be compared to historical levels measured with different equipment and locations. Detailed analysis of imputed 'raw' data showed "***in many cases the copied data temperature sequences are strings of duplicates and replicated sequences that bear no resemblance to the original observational temperatures*.**"

Apart from their secretive homogenization practices borrowed from NOAA methodology, they are using new digital thermometers recording at 1 second intervals instead of the average over 5-10 minutes as in previous practice. They also use different reference station sites and vary them annually, so there is no consistent comparable dataset. **In combination, these changes produce hotter modern records, but is hardly proper scientific practice because the new records cannot be properly compared to the older records**! The aggregate effect across all of the 112 remodeled stations comprising ACORN-SAT V2 is a calculated 23% increase in the overall warming rate for the Australian continent, compared with Version 1, which was also strongly adjusted, refer Figure 26.

They have rerated by homogenization many high-quality traditional datasets such as at Burke, Rutherglen, Darwin and Amberley to match other distant regional sites not local sites. This effectively removed their local micro climate trends, which were changed to show more recent or steady warming, and little previous warming such as in the 1880-1900 and 1925-1945 periods before post war industrialisation and CO2 emissions expanded. The temperature graph for Darwin in Figure 27 below is an extreme case, but typical of the standard 1-2C adjustments being made to the temperature data now (blue – unadjusted, red – adjusted). The original 1C cooling trend has been lost and a overall 2C warming trend has been created through these fanciful adjustments.

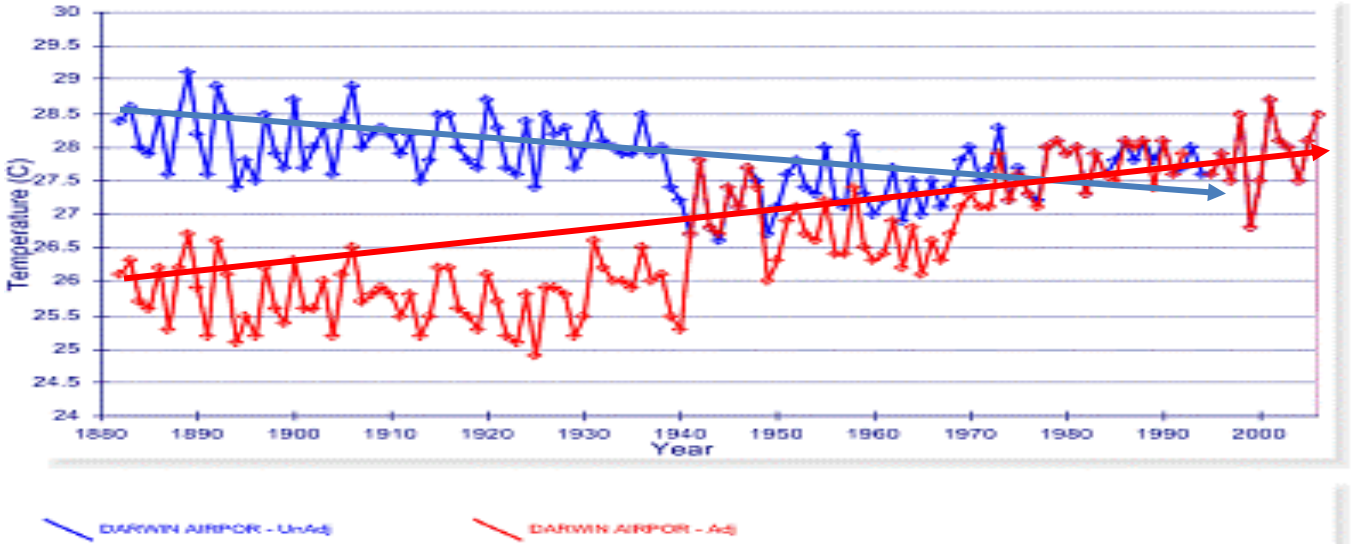


Figure 27. Comparison of Adjusted and Unadjusted (blue) Temperature Data for Darwin, Australia

In June 2013 the Bureau discarded the statistical models that had been used reasonably sucessfully for over 30 years to generate seasonal rainfall forecasts, in favour of an expensive GCM the Predictive Ocean Atmosphere Model for Australia, POAMA. **They claimed that the Australian climate is on a new trajectory and that historical data is therefore of limited value in making forecasts for the future, this is an idealogical position.**

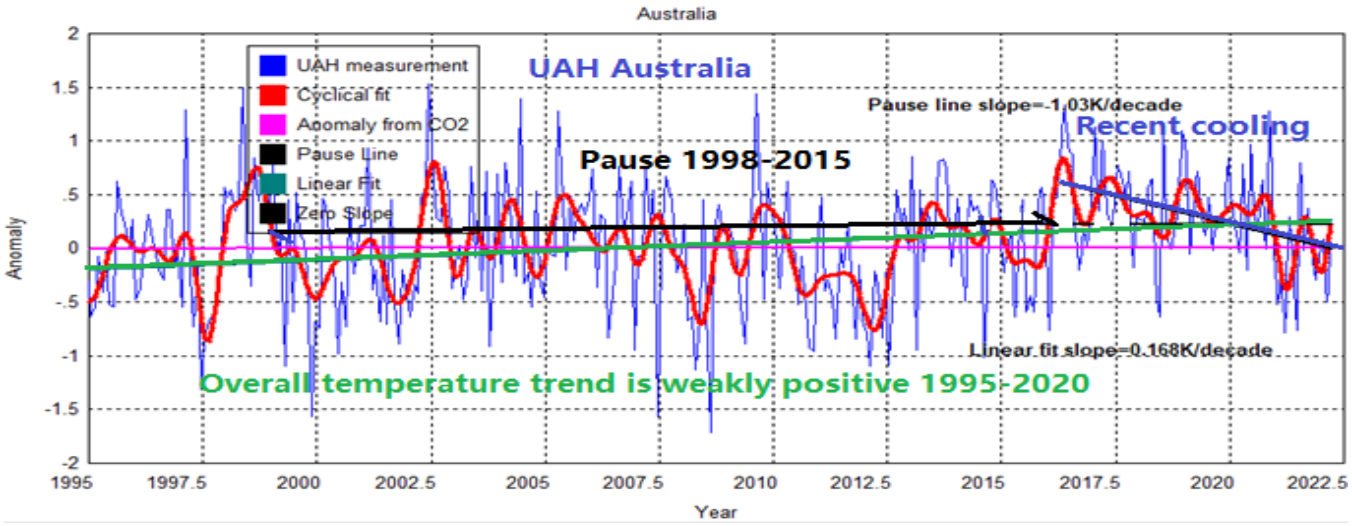


Figure 28. Australian UAH Temperature data 1995-2022 through the pause.

This shows UAH satellite temperatures averaged across Australia since 1995 showing the Pause period with long periods of gradual cooling and short intervals of rapid warming- probably related to the El Nino effect as in 2016. **Whilst the overall period is weakly positive at 0.4C (green line), since 2000 the above satellite data shows little or no cumulative temperature rise compared to the ground station adjusted data in Figures 24-25.** In fact, there is cooling up to 0.4C since the El Nino step change in 2016. This is surely telling us the BoM have miscalculated in their climate models and are wilfully mismanaging climate data to suit their CAGW activist cause.

In summary, the BoM appears to have systematically set out to change the historical and modern raw climate data to fit the trendy dangerous global warming paradigm. The original historical data and modern satellite data show that **their data manipulation has ruined the record and provides a false picture of past and current climate trends**. As a consequence the BoM's climate predictions are unnessarilly alarmist and not fit for policy.

12.2 Climate forecasts

One important aspect of this disgraceful Bureau behavour is the resultant long-medium term dire weather predictions they and the notoriously AGW biased Climate Council headed by Professor Tim Flannery have got consistently wrong over the last 20 years. In order to try and improve forecasting, the ARC Centre of Excellence for Climate Extremes (ARCCECE) setup in 2017, focuses on modelling the processes underlying extreme rainfall, droughts, heatwaves and cold air outbreaks in this driest of continents apart from Antarctica.

The ARCCECE's regional models indicate Australia's rainfall is influenced by several regional weather systems and global modes of climate variability, that may amplify or dampen the effects of La Niña. Wet conditions across southeast Australia during winter and spring typically intensify when La Niña and the negative phase of the Indian Ocean Dipole (IOD) co-occur. Similarly, when La Niña coincides with the positive phase of the Southern Annular Mode (SAM), rainfall tends to intensify across eastern Australia during spring and summer.

In general, La Niña promotes increased moisture, cloud development and rainfall over much of the Australian continent due to the strengthened Walker Circulation and warmer tropical ocean waters to the north of Australia and is usually associated with increased rain and cooler daytime temperatures. It also increases the likelihood of tropical cyclones in the Australian region. Given the preponderance of La Niña events since 2000 and the resultant heavy rainfall in Eastern Australia with lower average temperature trends as seen in Figure 28, **there is no evidence apart from simplistic models, to support one of the BoM's key assertion, that AGW generated warming will bring increased dangerous climate events such as severe droughts and bushfires in SE Australia.**

They blame the 2019-20 bushfires on global warming (Abram et al 2021) when it was obvious the real climate problem was the preceeding 3-year drought with low soil moisture and resultant higher temperatures. This was compounded by innapropriate land / forest management practices that promoted thick low story highly combustable scrub and grass, then insufficient prescribed preventative burning to lower the fire risk.

David Packham, a former CSIRO researcher warned in a 2015 article in the *Age* that "***fire fuel levels had climbed to their most dangerous levels in thousands of years." He noted this was the result of "misguided green ideology and environmental policies,*"** **that have become dominent in Eastern Australian States over the past three decades.**

Alimonti et al (2022) contended ***"From a disasters analysis point of view, population growth and patterns of economic development are more important than climate change or cyclical variations in weather. Today, not only are more people in harm's way than there were 50 years ago, but building in flood plains, earthquakes zones and other high-risk areas has increased the likelihood that a routine natural hazard will become a major catastrophe".***

In summary, BoM predictions over decades of immanent catastrophic climate change above and beyond natural climate variability, seem somewhat premature, if not grossly exaggerated and unprofessional. Simply put, the 'government science' process appears to be wrong, therefore their forecasts are proving to be wrong. From this weak base they push policies that are antithetic to the evolving and future conditions.

For the sake of the integrety of science, and in order to produce best practice forecasting to assist business and the public, it is time this organisation was properly scrutinised and brought to account by government.

13. Summary of climate Change Facts

Poyet (2021) in his excellent '**The Rational Climate e-Book'** summarised various aspects of truth relevant to climate physics, I have edited and added to these to outline the salient facts reached in this review of climate science:

• Arrhenius's calculations were wrong and his **conjecture about the greenhouse process is flawed: CO2 only plays a marginal role in the climate system**, due to its IR absorbing ability being near saturation levels at <300ppm CO2;

• **Henry's law, dictates CO2 follows temperature and not the other way round**, effect cannot precede cause, **therefore the AGW theory is based on a fundamentally erroneous causation**;

• T**he IPCC conclusions on anthropogenic causes and dire projections of climatic change are based on the probable false assumption of low levels <300ppm of CO2 in the pre-industrial atmosphere.** Recent glaciological studies refuting this need checking, however modern CO2 rise is real and mostly natural.

• **Anthropic CO2 may only be a tiny 6% of the rising atmospheric level, as most of the modern increase comes from natural processes**, i.e., plants, volcanoes and out-gassing of oceans due to temperature rise;

• **The residency time in the atmosphere of each CO2 molecule is <6 years**; this is disputed by the IPCC;

• **99.96% of the CO2 ever present in the atmosphere has been removed by various natural processes** (mainly weathering) over geological eons, **then sequestered in ocean carbonate sediments and organic fossil fuels**;

• **Anthropogenic global warming has been proved to be a minor effect, the longer-term climate risk is the lack of sufficient CO2 to support and enhance all life on Earth,** therefore emissions growth is positive for humanity;

• **Atmospheric sensitivity to CO2 is exaggerated by IPCC and ECS may be <1**, the role of water vapor, the is underestimated and clouds have overall negative feedback, so runaway AGW is impossible;

• The Greenhouse effect (absorption of IR radiation by some gases) is badly defined and intentionally kept confusing; however, **a doubling of CO2 from 410ppmv should result in a temperature increase of only 0.35°C (after 100yr), because the warming capability of CO2 is now so close to saturation**;

• **In climate models, CO2-related warming relies on enhancement by water vapor the main GHG**, but it resists modeling, meaning that climate can't yet forecast beyond what meteorology achieves, 15 days;

• **IPCC GCMs are not validated and have no true predictive value,** because they do not hindcast well, they assume high ECS, ignore negative cloud feedbacks and dismiss natural climate and solar variability;

• **Many of the world's surface temperature datasets are affected by the urban heat island effect or corrupted by inappropriate homogenization techniques,** designed to show human global warming;

• **The historical temperature datasets from UK, USA and Australia exhibit non-AGW warming peaks in the 1880's, 1930's and 1940's that are equal to or higher than the modern 1998-2016 warming peak**.

• **In Australia high temperature peaks in the 1880s-1890s were at least similar to and more likely were hotter than today**. Unfortunately, this data is no longer available from the BoM's ACORN-SAT datasets.

• **The global satellite datasets particularly the UAH troposphere temperature measurements are considered more reliable than the subjectively adjusted ground datasets** homogenised to reduce UHIE;

• **The satellite data is a more uniform global measurement than current ground and Argo buoy data**, additionally the balloon data supports the satellite temperature trends;

• **Rising CO2 is beneficial for plant and crop growth and human sustainability**. Record harvests in Australia and worldwide plus forest growth testifies to improved photosynthesis and plant fertilisation;

• **Progressive acidification of open oceans is a myth**; they have always been alkaline, minor Ph changes are normal and do not threaten carbonate shell and reef development;

• **Sea Level changes since 1907 show no acceleration (1-2mm y-1) and are unrelated to CO2 levels**;

• **Solar and Earth orbital variations are among the main factors that drive long and short-term climate change**, including the seasons, hydrological cycle, storms, oceanic oscillations and the Ice Ages;

• **Solar flux changes during weak magnetic cycles cause** stronger cosmic ray bombardment and ionized particles forming water droplets and **cooling cloud development, thus reducing AGW;**

• **Plate tectonics impact climate through mountain building, continent and ocean realignment, changing wind and currents** that move heat and H2O vapour from the tropics towards the poles;

•**The last 1.8-million years of the Pleistocene has been a series of 100,000-year glacial periods and short 10,000-15,000yr interglacial periods, the present one is due to end in 1500-3000 yrs;**

• **The Mid-Holocene Transition, caused by orbital variations, brought a change in climatic mode, from solar to oceanic dominated forcing.** This displaced the climatic equator south, ended the African Humid Period causing populations to move to more climate resilient locations along major rivers and oceans;

• **Natural oceanic oscillations ENSO (El Niño-La Niña), AMO, NAO, PDO are more relevant to modern climate than AGW**. High-capacity ocean heat and CO2 sinks moderate atmospheric effects and climate;

•**The globe's hydrologic cycle is a key factor regulating weather and short-term climate**; the stronger the hydrologic cycle, the more solar ocean heating, evaporation-cloud development and cooling occurs;

• **The temperature of the oceans controls the temperature and CO2 content of the atmosphere**, particularly the troposphere through the hydrologic cycle and winds that distribute heat from the tropics towards the poles via the Walker circulation, Hadley and Ferrel cells;

• **Major volcanic eruptions can be globally disruptive and cause local cooling by sulphureous emissions and ejecta**, **they are also the ultimate source of most GHGs CO2 and water vapour recycled from the mantle during common tectonic processes.** Volcanoes are largely dismissed as local events in GCMs;

• **Increased atmospheric CO2 can be seen as a good thing from both environmental and ecological aspects**, as life and civilization generally speaking flourishes in warmer, CO2 enriched and wetter conditions;

• **There is no convincing relationship between modern warming and increases in extreme weather events**; globally there no increasing frequency or severity of droughts, hurricanes, tornadoes, or floods.

• **No empirical evidence supports the IPCC assertion that warming of 2°C from pre-industrial times would be ecologically or economically damaging**. In contrast, current moderate warming is proving beneficial to humanity;

• **A warmer environment will reduce many diseases that thrive during cold conditions**, e.g., influenza and other respiratory afflictions like Covid;

• **Forward projections of solar cyclicity and other climate variables imply the next few decades may be marked by global cooling rather than warming**, despite continuing CO2 emissions and higher CO2 levels.

13.1 Assessment of Climate Science

These statements are of course subject to modification as further relevant data is gathered, but their overall impact regarding climate issues is clear and unambiguous, the IPCC has many of these facts wrong, so its consensus science is misleading and is in no way 'settled'.

Modern solar and ocean-driven cyclical global warming at the rate of 0.13C/ decade over the last 42 years, is not a threat but a boon to humanity. Our industrialization, whilst having a strong environmental impact in various regions particularly in cities with UHIE, it has not yet caused any significant accumulated global climate change. We can fix modern industrial environmental issues with better technology as we have in the past.

Nobody has a problem with active environmentalism that looks to protect sensitive environments from actual physical destruction/pollution. It's the nonsense belief that a trace gas, that is essential to all life on earth is a pollutant, that people particularly sceptics have a problem with. Abundant evidence shows the mostly natural (95%?) rising CO2 is not only harmless but is proving beneficial to the planet, so we should not seek to minimize its positive influence on plant and human sustainability. The CAGW hypothesis has been rejected by evidence from atmospheric physics, the modern temperature record and global history. The tipping point concept regarding global warming is moot.

Climatologists cannot derive scary climate predictions from current validated scientifically measured and non-homogenised temperature and CO2 datasets, only from their expensive but inherently flawed GCMs. These models are invalidated mostly due to the complexity of natural climate factors including solar variance, and then due to tuned inputs, particularly related to high ECS - climate sensitivity to CO2 built into them. Empirical data suggests ECS is low, possibly below 1 and there is overall negative feedback from water vapor/clouds to counteract any minor greenhouse gas warming.

Despite CO2 levels 50% higher than the Late Pleistocene average of 280ppm, the modern climatic response is subdued, with temperatures still within Holocene variability, below the Holocene Climatic Optimum and below warmer previous interglacials. There is no convincing evidence of a modern dangerous acceleration of global warming via AGW, or for significant modern increases in extreme weather events, be they droughts, bushfires, hurricanes or floods. A slightly warmer world has the benefit of receding tundra allowing more accessible arable land and forests in higher latitudes, and reduced risk of cold related diseases.

Of more general importance is gradual steady sea level rise that will eventually impact vulnerable low-level atolls, coastlines and cities. However, that threat can be managed by technology as the Dutch have shown over centuries. Whereas, ocean warming and acidification are not serious short-term issues that justify any immediate concern or action.

Key issues that need to be better quantified are the importance of solar and cosmic irradiation variance, the actual level of modern ECS, the real amount of human generated CO2 as a percentage of natural CO2 variance, and levels of CO2 in the pre-industrial atmosphere. A better understanding is also required of the risk level of post-1900 warming in future that could be dangerous to humanity, as the IPCC's present 1.5-2C threat level is obviously not going to be a huge problem post 2050.

In relation to the scientific methodology employed by climatologists, knowledge is not determined by government-controlled opinions, consensus, peer review, or theoretical models that do not work. Theoretical predictions are only validated or rejected by observations, which are paramount. Currently in the research field, there are serious issues related to how climate science is being funded, problems with ideological input and methodology used, plus the way data is managed, and how results are massaged to suit political correctness, peer reviewed and then reported to governments.

In general, international and local climate reports have a systematic bias to AGW alarmism, without sufficient balancing criteria of uncertainties or support for alternative natural reasons for climate change. Considering the IPCC is not mandated to evaluate all natural climate change variables, therefore it is not the source of all wisdom related to climate, so its resultant policy options need to be reassessed.

Trying to scare people all the time, to achieve policy goals is fundamentally wrong, anti-democratic and poor long term scientific practice. A better scientific approach to all these issues with less ideological and political input must be found for a more prosperous and sustainable future.

Climate Politics

14. Climate Scepticism

People may wonder **why is it that commonly older geoscientists, engineers and retired climate scientists don't agree with the IPCC mandated human related warming hypothesis.** Or support the economy destroying, climate ineffective industrial emissions controlling proposals in the Paris Agreement. Well, obviously we don't subscribe to the climate orthodoxy because we are trained as sceptics to thoroughly analyze complex scientific data, and know spin and bullshit when we see it. We understand historical climate change together with many of its natural causes, and because we are older and travel, **we do not observe modern climate to be unusual, dangerous or requiring huge human intervention, which in itself is a selfish 'progressive' anti-scientific fantasy.**

In this section discussion will be related to various climate and environmental topics to air the range of views of scientists, researchers, environmentalists, philosophers, economists and the media.

14.1 Environmentalism and Post-normal science

Traditional environmental/ecological worries about overpopulation, rare species extinction, despoilation of nature and ecology by land use issues, dams, urban ugliness, industrial pollution and human waste Etc are legitimate and have warranted appropriate mitigation efforts using appropriate technology. However, they are not particularly relevant to this discussion of climate change science, so it is critical here to differentiate them from AGW alarmists concerns over human influence in global climate change. **Scientific evidence has shown AGW is essentially bogus or doesn't constitute a threat, so there is no justification for immediate action on climate change**. Unfortunately, alarmists conflate AGW and traditional concerns about 'saving the planet', in order to galvanize emotional public and political support for harsh remedial action on climate change.

Carter in '**Climate Change the Facts: 2014'** noted "***Science should not be about emotion or politics****, yet there is so much emotion and unsound belief in climate science and related environmental practice, and* ***not enough reproducible or unadjusted evidence to support the anthropogenic climate cause***." **In effect, legitimate historical environmentalism has been highjacked by a 'semi-religious' clique of politically motivated climate activists who appear immune to contrary scientific evidence.** Hulme (2009) Professor of Climate Change at UEA, calls climate change "*a classic example of 'post-normal science*,'" which he defines as "*the application of science to public issues where 'facts are uncertain, values in dispute, stakes high and decisions urgent.' He says "****Scientific truth is discernible by measuring a consensus brought about by deliberation among experts determines what is true, or at least true enough for the time being to direct public policy decisions****."* As further explained by Peter Lee in The Australian Dec 2014 "*climate policy incorporates subjective dimensions, individual and collective special*

interests, and ideological environmental elements. ***Facts would be combined with values in driving social change for the common good*****". This is blatant PC politics, nothing to do with normal science**!

James Delingpole in "**The little green book of Eco-Fascism**' **considered the AGW theory unscientific and just ideology because it "*cannot be falsified through experiment or observations.*"** He quoted Hulme *who* said *"dangerous climate change will not emerge from a normal scientific process of truth seeking … science will gain some insights into the question if it recognises the socially contingent dimensions of a post-normal science." Delingpole responded "* ***'Climate Change' is unlikely ever to be proved with hard evidence. It's much more akin to a convenient sociological theory invented to advance a political agenda****." "To a Post-Normal scientist…the noble lie is sometimes preferable to the inconvenient truth." Delingpole summarised his views with "****the whole warming scam is all about environmental politics, not science. The highly politicized IPCC practices 'policy-based evidence-making'****. What's far more interesting…is how hard the science establishment tried to prevent the truth getting out."*

Crichton (2009) stated "*In my view, our approach to global warming exemplifies everything that is wrong* ***with our approach to the environment. We are basing our decisions on unfounded speculation, not evidence. Societies are morally unjustified in spending vast sums on a speculative issue when people around the world are dying of starvation and disease*****"**

14.2 The Precautionary principle and Propaganda

Another major issue with IPCC propaganda has been "***Climate Policy has been steered by the fiction that action is desperately urgent;*** *that decisions must be taken at breakneck speed; that doing anything is better than doing nothing; and that* ***there is no time for debate; no time to plan; no time for normal prudent analysis****.*" Thus, the public and politicians have not been given sufficient time or evidence to study the issues properly, before being forced to make policy decisions on the run.

Due to unceasing climate propaganda we seem to be prioritizing ideological ideas about environmentalism and the precautionary principle over scientific reality and common sense, thus we have made unwise panicked decisions. In 2009, sceptic Willis Eschenbach discussed the application of the Precautionary Principle (PP) to climate science issues and proposed remedies. The UN has defined PP as *"In order to protect the environment, the precautionary approach shall be widely* he *applied by States according to their capability. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."* **The requirement to take protective action is reasonable if serious threats emerge, "*but one shouldn't act without determining the consequences***." The benefits of taking action must greatly outweigh the costs of negative impacts on society and general prosperity. To date, governments have not conducted proper cost/benefit analyses on climate mitigation policies.

Naomi Oreskes (2021) in '**Why trust science?**' suggests as a type of no-regrets option "*that* ***ambitious climate policy would be beneficial even if the science supporting anthropogenic climate change turned***

out to be wrong", which she considered extremely unlikely being a dedicated catastrophist. However, she considered "Discussions must include an examination of the specific risks and the pros and cons of different policy pathways." **So, she advocates exploration of the best mitigation policies to minimise societal damage.** This is superficially a more reasonable approach, but again does not allow for non-mitigation policies or adaption.

Eschenbach noted *"**We have no evidence that a warmer world is a worse world, it might be a better world. The proposed (decarbonization) remedies are estimated to cost on the order of a trillion dollars a year, and have been totally ineffective to date**… hardly cost effective under any analysis**. Nor do we have any certainty whether the proposed remedies will prevent the projected (AGW) problem.** Therefore, I do not advocate inaction. I advocate the use of "no-regrets" actions in response to this kind of possible danger. The … approach is very simple **do things that will provide real, immediate, low-cost, tangible benefits whether or not the threat is real. That way you won't regret your actions**, whether or not the doomsayers are right about what will happen in fifty years, both then and now people will be better prepared and more able to confront the problems caused by the unpleasant vagaries of climate**."***

Fighting to reduce CO2 is hugely expensive and will be very damaging to the lives of the poorest people, and those employed in vital fossil fuel revenue generating industries, mainly due to resultant higher costs of electricity, fuel, food and transport. **In effect utilising the Precautionary principle we are valuing the future living environment above peoples' current well-being and their high living standards.** Environmental elites, alarmist academics and politicians need to understand this key PP issue as the current Net Zero policies begin to bite into the social fabric and prosperity of the public in the USA, UK, EU and Australia.

Carter (2014) explained this "***Since 1988, a wide ranging and worldwide propaganda campaign has been conducted to raise public alarm about global warming***. *Though initially promulgated by environmental organisations, commercial lobbyists…and the financial markets; ... the bandwagon soon attracted the attention of politicians because of the electoral advantage that it promised, and has all the while been egged on by a ceaselessly alarmist press corps."*

This is understandable, "*given the profit motive and the lucrative nature of the current pernicious political cycle. It works like this, climate alarmists lobby Governments to advance their moral doomsday narrative, ignorant and fearful politicians acquiesce, so scientists and research institutions get grants, the green lobby secures investments and subsidies for uneconomic and ineffective technologies, and political candidates embrace the hysteria in exchange for campaign contributions*." At some point, this facade will collapse because of the lack of reality behind it, but not before a lot of global economic damage is done and poor people will suffer.

However, **we oldies are able and morally obliged to openly contest this post-modern environmental inspired climate alarmism.** This is mainly because we had a better more rounded education, don't have

to seek government funding or publish papers approved by peer pal pressure reviews. **We don't ignorantly accept political propaganda dressed up as science by the self-interested renewable energy industry, financially hungry environmental NGOs, the UN globalist agencies and leftist media**. Agencies responsible include the IPCC, Climate Council, National Academy of Science, CSIRO, BoM, Getup, Greenpeace as well as the ABC and The Guardian.

Big technology platforms like Google, Facebook, Twitter and Wikipedia also seem to have lost their way, they are increasingly limiting public information access to narrative-approved "climate facts", rather than allowing free discussion & research. However, we have other sources of gathering relevant information such as respected scientific journals & public affairs groups, The Heartline Institute, The Global Warming Policy Forum, Institute of Public Affairs, Saltbush Club, The CO2 Coalition and other international internet blogs such as WUWT, Climate Etc, Jo Nova and open publishing like The Australian.

Modern sceptic leaders in Australia have followed on from Prof Ian Plimer and Prof Bob Carter's prodigious output of Climate informative books and presentations. These climate heroes include, Dr Peter Ridd, Joanne Nova, Peta Credlin, Dr David Evans, Jennifer Marohasy, Tony Abbott, Alan Jones, Andrew Bolt, Chris Kenny, Nick Cater, Grahame Lloyd, David Whitehouse, Viv Forbes, Senators Matt Canavan and Malcolm Roberts.

Dr Marohasy editor of '***Climate Change: The Facts 2020***,' said "*It is better to have questions that cannot be answered, than answers that cannot be questioned****. Far too frequently climate science has demonstrated noble cause corruption – where the ends justify the means.*"** A science columnist for '*Time' remarked "****I would freely admit that on global warming we have crossed the boundary from news reporting to advocacy,"*** thus it is difficult to get the sceptics view published, and most like myself resort to the internet. Marohasy concluded "*In effect,* ***what the media, politicians and activists say about climate science has drifted so far out of touch with the actual scientific literature and empirical data as to be absurdly and demonstrably misleading*****."**

14.3 AGW Ideology

Advocates for AGW or 'The Science' commonly behave as ideologists. *"It is generally understood that* ***those who hold a principled position in science welcome arguments; they welcome having their position tested and possibly corrected.*** *A principled position always has room for increased subtlety and greater complexity.* ***Whereas, holders of an "ideology," on the other hand, will tend to eschew argument or any examination of the ideology's underlying presuppositions or premises****. If evidence supporting a theory is trumpeted loudly and repeatedly, and evidence that may refute it is ignored repeatedly, then it's an ideology, not a principled position****. If every bit of data, no matter how contrary, is taken as evidence of the truth of the theory, then it's ideology, not science****."*

An example of the problems of ideology is the US government climate entity USGCRP, the late Patrick Michaels a past president of the American Association of State Climatologists said, "*If the USGCRP*

continues to use results based on speculative assumptions made over forty years ago and continues to ignore that these ***(AGW) assumptions are contradicted by over fifty years of data from observations and experiments from validated databases, it will betray the trust the public and the Supreme Court has placed in government-funded science****."* Thus, this kind of climate science puts in jeopardy the public trust in scientific truth and in the authority of science in general.

Ideological issues with climate science may be compared to cosmology, where Peter Woit (2006) in '**I'm Not even wrong**' claimed the "*ossified ideology of supersymmetry and superstring theory* (that has dominated the past two decades of cosmology), *may have to be abandoned* as unworkable" due to our inability to confirm or disprove it. Thus, the consensus view in various scientific fields needs to be torn down before progress can be made with a better understanding based on new facts or ideas.

14.4 Sceptics null hypothesis

In assessment of climate issues, **sceptic's null hypothesis is that the global climate changes, the cyclic warming and cooling periods that have occurred over the last 150 years (and continue today) are dominantly natural in origin**, refer Figure 29. **Mankind's environmental effect on climate is generally local or regional not global**, such as dam water storage and irrigation, land use changes-forest removal-cropping and the Urban Heat Island effect, plus genuine industrial pollution, these are mostly unrelated to CO2 emissions warming.

As summarised in the reports of the Nongovernmental International Panel on Climate Change (NIPCC), thousands of papers published in refereed journals contain facts or writings consistent with this. **Plausible natural explanations exist for all the post-1850 climatic changes that have occurred, none of which could be considered unusual or remotely dangerous**. The major warming events during this period have all had the same warming rates as shown in Figure 29 followed by mild cooling. However, they had different levels of CO2 growth, but the only significant change is the post-1950 exceptional CO2 rise, that has many sources including human. Biological science has shown that CO2's climate effects are benign or beneficial to humanity due to its boosting of plant photosynthesis and crop yields.

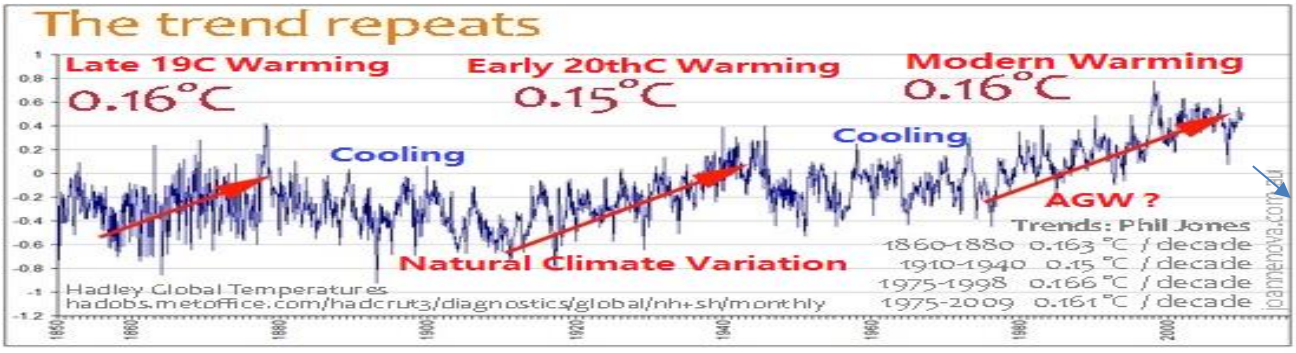


Figure 29. Global Temperature's repeating trends post 1850. After HadCRUT and Jones 2015.

Overall, The empirical data shows that, apart from obviously manipulated records**, no dangerous or**

unusual temperature trends have actually occurred over the past 150 years and since the 'Millennial Pause' we are looking at slower warming or cooling coming into the grand solar minimum.

In a recent blog on NASA data, William Kininmonth stated the "*Earth's surface temperature is constrained by the rate of increase of surface energy loss.* ***Water vapour and its back radiation to the surface is the primary (97%) contributor to the enhanced greenhouse effect; however, it is it is the latent heat loss from the surface with evaporation of water vapour that constrains global surface temperature rise from any small CO2 forcing***." Methane can be shown to be a similarly innocuous contributor to the greenhouse effect and climate change. Thus, AGW has little credibility, and nature rules in support of the sceptics view on climate.

14.5 Climate Science credibility and debate

After 40 years of research there still remains no compelling evidence of the role that man-made CO2 emissions has on modern climate. Most of the scientific evidence to date refutes any significant AGW and the greenhouse process is essentially benign, being moderated by the solar-driven hydrological cycle. **In this review of climate science, natural variables including solar, galactic, Earth orbitals, plate tectonics, ocean oscillations and currents, plus the hydrological cycle all have inputs to changing climate over time.**

The IPCC have used flawed computer models, hype, hysteria, headlines and zealotry to partially achieve their political aims, but these **political abstractions do not comprise a substitute for honest fact-based replicable science, if they are to convince a sceptical scientifically literate public that AGW is legitimate**. **Given that there is abundant evidence now refuting AGW, the fact that climate alarmism is still rampant only means that the 'climate' problem is not driven by empirical scientific data, but by environmentally inspired 'religious' emotions, economic ideology and anti-fossil fuel energy politics. None of which can have any beneficial or measurable effect on future climate**.

Judith Curry (2015) an eminent climate scientist says in her Blog **Climate Etc** "*Encroachment of politics into socially-relevant science is unavoidable. Problems arise from many sources, and scientists, policy makers and the media are all culpable.* ***The issue of greatest concern to me is when scientists filter research results and their public statements of facts with an eye to downstream political use. Governments exacerbate this by funding a narrow range of* (****'renewable'****) projects that support their preferred policies***." "*While I regard manmade climate change as a cause for concern, I do not view this as a crisis or an apocalypse. This perspective has placed me at odds with the activist branch of the climate science community, who regard my perspective as inconvenient."*

"The academic political pressures from activist scientists and even politicians caused me to retire prematurely from my tenured faculty position…four years ago. In short, ***the climate science establishment has become intolerant to disagreement and debate, and is attempting to marginalize and de-legitimize dissent as corrupt or ignorant". This political approach has been a great disservice***

to efforts needed to truly understand our complex climate system and also greatly mislead policy makers."

Jeff Bennet (2012) said in '**Little Green Lies'** "***One reason for the climate change debate being so divisive … is that the issues involved are both complex and encompass numerous areas of expertise****, none of which any single person is likely to have the capacity to understand completely*." Secondly, "the issue involves many people with strong vested interests." **The IPCC asserts that *"its position that humans are responsible for climate change represents a 'consensus' amongst the scientific community***." Also, that humans are capable of changing their behaviour to mitigate global warming, and this is justified *"if the costs involved are small compared to the costs that people will have to bear if no policy action is taken*." **Whereas sceptics refute this hypothesis based on various lines of observational evidence, and the requirement for any related costly mitigation policy, especially when the costs are enormous**.

Bennet understands that any mitigation policy is likely to have some impact over the long term, but is clearly not ideal and would not stand up to any rigorous cost/benefit analysis. He believes "***it is unclear that these policies are in the best interests of society***" at the national and global scale, "***given the benefits are uncertain and results attained well into the future****."* **Thus, he recommended adaption policies would be more appropriate and cost effective.** However, the IPCC have pushed ahead with their divisive policies through the 2015 Paris Agreement and subsequent COP forums.

Unfortunately**, the public is generally ignorant about recent progress in climate science debunking AGW, because alarmists are generally unwilling to debate contentious issues**, saying the matter is already settled. However, in 2007, a rare high-profile climate debate between prominent climate scientists ended with global warming skeptics being voted the clear winner by a tough New York City audience. Apparently, the result so demoralized Gavin Schmidt the head of NOAA-NASA, a true believer, that he realized that debating skeptical scientists was not something he would ever want to do again. Accordingly, in 2013, Schmidt refused to even appear on TV alongside skeptical climatologist Roy Spencer.

Recently, a debate on the resolution **"Climate science compels us to make large and rapid reductions in greenhouse gas emissions"** conducted by alarmist climatologist Andrew Dessler in the affirmative, against engineer Steven Koonin, resulted in another important win for AGW sceptics. Thus, the tide is slowly turning against the climate scare campaign. Richard Lindzen famously said "***It will be remembered as the greatest mass delusion in the history of the world – that carbon dioxide, the life of plants, was considered for a time to be a deadly poison."***

Sceptics don't subscribe to a moral Green crusade to save the planet from human overdevelopment, by using a confected future dangerous warming event to justify deindustrialization with resultant loss of our current prosperous lifestyles. We understand that if there are real problems, we can apply relevant technology or adapt to them as we have throughout history. We particularly object to the blatant political pressure for climate reparations demanded by globalist bureaucrats. This process aims

to impoverish Western capitalist economies in the name of climate justice for our supposed collective guilt about all the poor underdeveloped countries exploited by colonial greed and past industrialization. These 'climate' payments remained a major contentious issue in the recent COP27 meeting in Egypt because many G20 nations cannot now afford the largesse required.

We are also strongly concerned about the lack of scientific credibility about climate data and interpretation of scientific data, by academics and government organisations responsible for advising politicians about climate change and related energy policy. "*When an issue becomes a vital part of a political agenda, as with climate, then the politically desired position becomes the main goal rather than a consequence of scientific research*" for truth in the matter. This problem was reinforced twenty years ago when many of the world's major national academies of science issued reports supporting the AGW conclusions of the IPCC.

But then, since 2010 when evidence against AGW became stronger, these organisations representing the scientific community in general became reluctant to discuss AGW issues of uncertainty about forecasts of climate disaster. This was because they could no longer blame the environmental movement when, not if AGW became no longer a serious 'threat' or climate mitigation policy turned out to be the costliest and socially disruptive scientific mistake ever, as is likely the case.

The current political situation for the climate science community is problematical, because their main thesis AGW cannot be proven with current data, and proposed mitigation costs for a probable climate non-event, appear astronomical, threatening the global economy. Climate science hubris will take a fall, this science has to look for a respectable exit from this self-imposed ideological mess and the reliance on models not data.

14.6 Australian perspective

This issue is especially true in Australia **where alarmist academic and misplaced environmental elitism about CO2 'pollution' has led scientifically ignorant and fearful governments to enact irrational climate policies.** These are resulting in effective energy poverty, growing unreliability and divestment in critical resource industries thus weakening our economy and national well-being. All this ridiculous political drama for no climate benefit. **The present overblown political panic to save humanity from climate change is pure nonsense, because there is no scientific justification for the declaration of a current or impending climate emergency.**

Sceptics object to the dictation of our national energy policies by unelected globalist political groups like the UN and related international treaties. Especially when these policies have produced regressive legislation expanding renewable power generation by restricting fossil fuel energy use, and related social media freedom to discuss or disagree with the AGW paradigm.

15. Global Climate Politics and Environmentalism

It is well known that *the GDP* and economic prosperity of a country is directly proportional to its energy consumption and its energy price. Thus, the IPCC and related organisations have always had a primary aim to use climate science alarmism about AGW to push for social justice for Developing nations by initiating a global economic and political reset managed by the UN. This reset is based on removal of fossil fuel energy with subsequent reduced prosperity and political power in G20 Developed nations.

15.1 Historical background to AGW politics

The founder of the UN IPCC, Maurice Strong a dedicated socialist politician and godfather of the global environmental movement said in 1990 "*What if a small group of world leaders were to conclude that the principal risk to the Earth comes from the actions of the rich countries? In order to save the planet, the group decides: Isn't the only hope for the planet that the industrialized civilizations collapse? Isn't it our responsibility to bring that about*?" This misanthropic ideology professed by Strong continued In relation to the perceived global overpopulation problem, whereby he said *"We have been the most successful species ever;* ***we are now a species out of control. Population must be stabilized, and rapidly."*** Thus, Jaworowski (2009) commented ***"climate was politicized decades ago and lost its purely scientific character, in the service of ideological, political, and economic aims. Involved in this game are the interests of scientists, whose professional integrity clashes with prospects of lavish projects and esteem."***

Norman Page (2019) in '**The CO2 Derangement Syndrome – a historical overview of Climate hysteria'** discusses its origins from concerned ecologists and environmentalists in particular Ehrlich's 1968 book "**The Population Bomb**", transitioning through Strong's role in creating an action plan designed to give the UN input and even control over individual Government environmental policies worldwide. This led to the IPCC and then the United Nations Framework Convention on Climate Change **(UNFCCC) which produced in 1992 a politically driven action plan called Agenda 21, designed to produce a UN centrally managed global society which would control every aspect of the life of everyone on Earth.**

The plan called for: "*The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects." and "apocalyptic forecasts are used as the main drivers of demands for action and for enormous investments"* to support their socialist goals. This process has evolved since through the Kyoto Treaty to the Paris agreement and now net zero emissions, all designed to cripple fossil fuel energy generation, the basis for modern capitalist industrialisation and human prosperity. **So, the current emotive political furore over environment issues and climate change is being used as cover for other non-scientific globalist sociological motives including population control**.

These are readily admitted by various UN and EU luminaries such as Christiana Figueres, and also Ottmar Edenhoffer who in November 2010 candidly said **"*One must say clearly that we redistribute de facto***

the world's wealth by climate policy … One has to free oneself from the illusion that international climate policy is environmental policy." He also candidly admitted "*countries who don't sign up to the UN agenda will be better off economically.*" **Critically these include Brazil, Russia, China, India and Turkey, the BRICS or BASIC nations- combined about half the global economy**, who are expanding their industrialisation at the expense of the rest of us.

In '**The Deliberate Corruption of Climate Science'** (2014), the late geophysicist Dr Tim Ball did an excellent job explaining "*how and why the massive deception behind catastrophic man-made global warming (climate change) alarmism was conceived and achieved by the UN IPCC, with help from climate professors at the grant-funded universities and major meteorological agencies worldwide.*" He said "***Essentially science has been corrupted to serve a political agenda and all attempts by physical scientists to expose the fraudulent nature of this anthropogenic global warming (AGW) have been foiled by a rather vicious well-funded environmentalist propaganda campaign of misinformation and intimidation.***"

*"**This has left the public and our political leaders with the false impression that AGW is scientifically valid and backed up by scientific evidence, when there is not a single piece of evidence in support** of the ludicrous notion that CO2 emissions from the increased use of fossil fuels is causing catastrophic global warming. **Climate change is an environmentalist fabricated fraud claiming to save the planet from dangerous climate, but in reality, to suit their ideologically driven self-serving political agenda**."* Lindzen agrees "There's little doubt that the IPCC process has become politicized to the point of uselessness."

Rupert Darwell (2013) in '**The age of Global Warming'** details how *"global environmentalism concentrated itself into the global warming scare. Here we take up a group of activist climate scientists, tracing how they entered this political game, how the greater politics of the UN quickly overwhelmed and corrupted their science, and finally, how the academies of science were soon dragged down with them."*

It must be recognised "***If a theory, AGW in this case, is not able to make predictions, it is protected against any attempts at refutation. It is therefore not a scientific theory***." **AGW is therefore a political edifice of the socialist environmental lobby, that is not well supported by empirical science**. So, they rely on flawed GCM's to generate fear and climate action with their objectives of equalizing power and opportunity in poorer nations, by reducing the GDP and influence of western capitalism through the destruction of its fossil fuel-based industry.

15.2 Modern industrialization reality

It needs to be understood, that the industrial revolution was a major advance humanity should treasure, not regret or stop other less developed countries from benefiting from in future. Many mistakes were made but most have been learned from, so human progress is a positive factor we

should all embrace, not demonize or marginalize as do the apocalyptic environmentalists and deluded XR anti-human cult. Converting to coal energy two centuries ago (Figure 30) saved the European forests from denudation, therefore for the EU and UK to use forest biomass as low-emissions 'renewable energy' now instead of coal, is scientific and political hypocrisy.

Prior to the mid-17th century, British society spent between 50 and 80% or more of GDP to obtain basic energy to survive. The advent of abundant fossil fuels, automation and use of electricity over the past century as shown in Figure 30, released workers to be more productive in modern society and to achieve more prosperity. This resulted in energy expenditure in the UK reduced to a minimum of about 7% of GDP in the late twentieth century even though energy consumed per person was 10x more than 400 years ago, that's real progress.

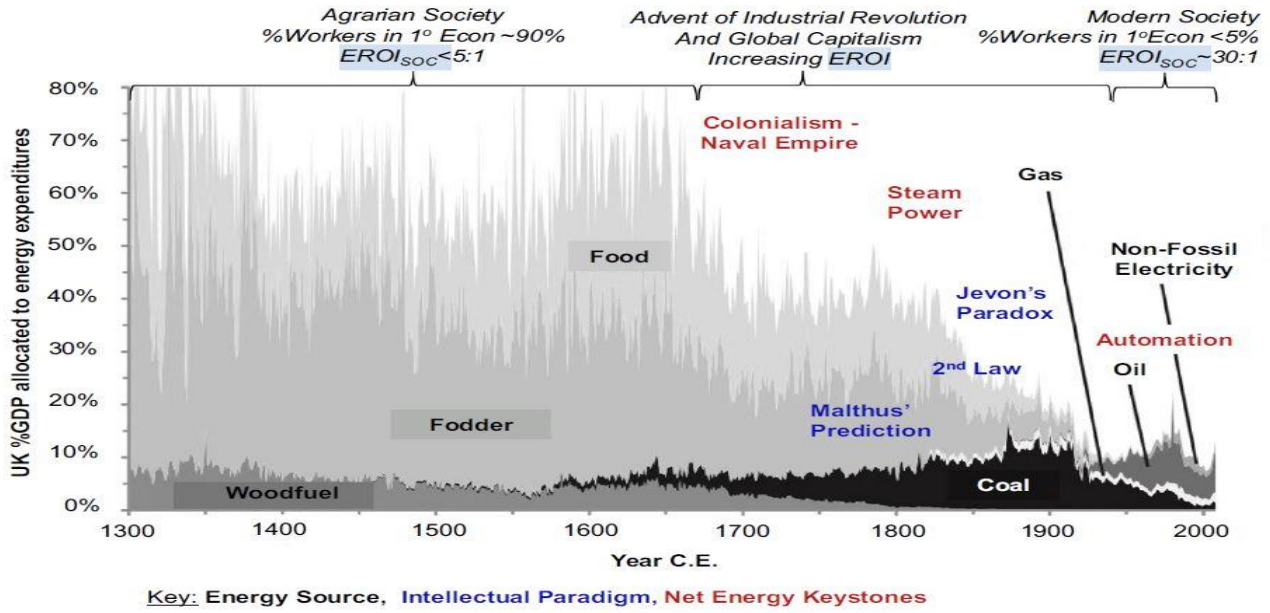


Figure 30. Percent of GDP allocated to energy expenditure in the United Kingdom from 1300 to 2008. (From Mark Mills 2022. The Energy Transition Delusion, Reproduced from Fizaine and Court 2016).

The previous Glasgow climate gabfest came to a predicted meaningless conclusion, with **China and India - the BRICS group plus African nations, deciding to continue to use coal and industrialize as best they can to reduce poverty, boost their economies and global power base.** Thus, for the latest COP27 in Egypt they have again rejected and negated any UN/EU climate inspired costly decarbonizing emissions controls, and renewable energy policies the UN and EU tries to impose on them. After all, China and India have between them brought modern prosperity to 700-800M of their citizens through fossil fuel industrialization, so the rest of the developing nations want to do the same, as is their right. **The Asian led global modern industrialization process is inevitable, so the UN & EU should let them make their own choices**.

In fact, the BRICS group of Developing nations overtook the Developed world CO2 emissions in 2005, and by 2020 controlled 61% of all global energy use and 2/3rds of all CO2 emissions. They are now ~10,000 million tonnes higher as shown in Figure 31. To provide historical perspective on the Industrial Revolution between 1750 and 2020, the UK emitted 78 billion tonnes of carbon dioxide into the atmosphere, compared with China's recent emissions of 80 billion tonnes since 2013. Thus, in any climate reparations funding the UN/EU/US want China to contribute its share.

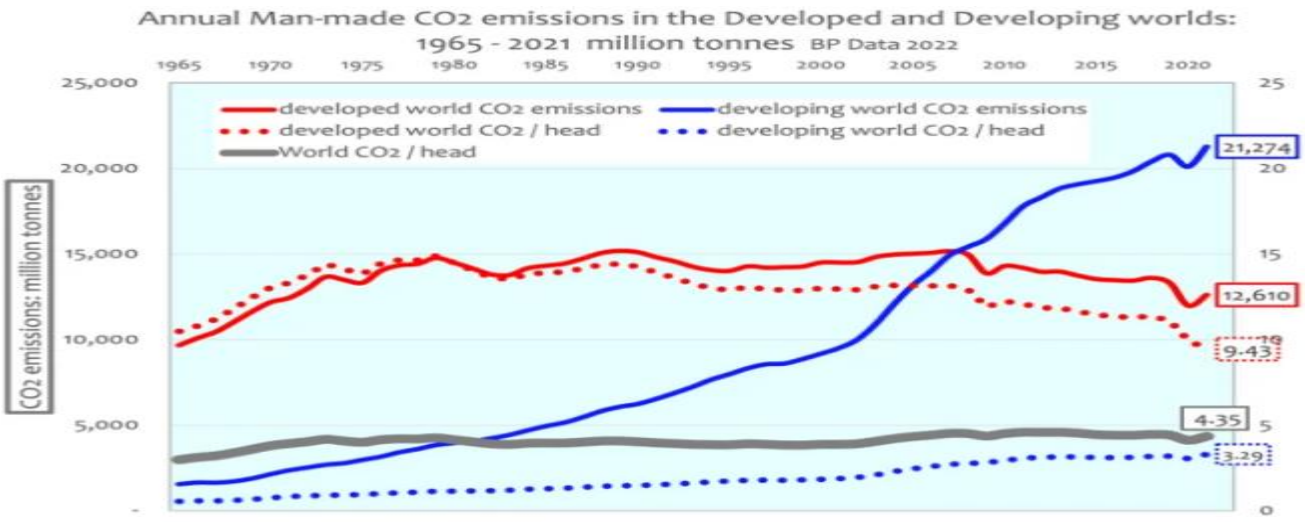


Figure 31. CO2 Emissions trends in Developed and Undeveloped Nations, from BP data 2022.
(Note the dip in emissions in 2020 due to covid restrictions.)

These nations will further increase these levels at the expense of the Developed West in coming decades to represent over 90% of future increases in energy consumption. So, in reality global climate mitigation control no longer lies within the power of the affluent OECD countries.

15.3 Environmental politics

Viscount Monckton noted in 2021 ***, "many of the leading environmental groups active in the West such as Greenpeace",*** **Sierra Club, Friends of the Earth, Conservation International and the 350.org group "have been infiltrated and surreptitiously funded for decades by the Russians**." The latter's interests lie in **weakening the capitalist system "*by destroying its cheap reliable energy supplied by fossil fuels, hydro and nuclear***.** *These well-funded groups have been highly effective in pursuing their 'virtuous' goals, in the name of saving the planet from human related ecological and environmental destruction, but in doing so they are also serving the foreign policy goals of socialist states, particularly the Chinese and Russians."* Of course, these environmental groups are also funded heavily by private corporations and subscriptions, to the extent that Greenpeace has an annual budget of more than $200 million.

Despite the overwhelming historical evidence that socialist systems have worse environmental outcomes, including industrial pollution and CO2 reduction, normal market mechanisms are thought to

be inadequate to accomplish the IPCC climate goals, hence the 2015 UN Paris Agreement. Due to this UN NGOs goals, we are suffering the insidious effects of twenty years of a totally unrealistic and uncosted global approach to climate mitigation and energy policy. As economist Dieter Helm notes "***net zero does require an economic transformation analogous to that from a peacetime to a wartime economy***". **However, there is no evidence national Governments or populations understand the real costs**, the energy security issues or steep decline in prosperity this process involves. Otherwise, they wouldn't support it, and would remove governments that continued the harsh measures required.

Traditional environmental concerns about human despoilation of nature and growing pollution due to industry, urban development and over population are legitimate and warrant local and global remedial action. Whereas, climate change environmental issues are long-term and largely concocted for political purposes, so do not required urgent action.

In 2019, Bill McKibben perhaps America's leading alarmist environmental writer, published ***'Falter**' that **argues climate change is "the greatest challenge that humans have ever faced".** This absurd statement follows a long history* of his leftist emotional twaddle over nature and nuclear issues; thus, he considers "***climate as a spiritual problem whereby through capitalist industrialisation humankind has lost its connection to nature***." This belief system and moral framework are akin to a secular religion whereby God is replaced by nature, and **scientific evidence contrary to their ideas are dismissed as irrelevant compared to human-caused lost natural harmony.** They believe that society should slow down, use a lot less energy, preserve nature and everyone (except the elites) should live much simpler, more rewarding lives. This could only work if there were far fewer people on the planet; however, the genies of technology, cheap energy and prosperity are out of the bottle, most people don't want them put back.

Fundamentally, **these environmentalists believe that western style societies are amoral because they consume too many finite resources, and so population growth and industrial development are ruining nature and the planets future**. McKibben's 350.org group that has led the US environmental catastrophism movement against nuclear power and fossil fuel capitalism, has actually harmed the development of more efficient and sustainable energy technology to drive human future prosperity. The battle of values continues apace. Pierre Desrochers and Joanna Szurmak (2018) authors of '**Population Bombed! : Exploding the Link Between Overpopulation and Climate Change'** suggest alternatively, "*an increasing population with longer average lifespans only improves humanities rate of discovering new resources to use and technologies to improve lives. Plus, environmental stewardship will improve as a result.*"

Bennett (2012) in '**Little Green Lies'** agrees, he discussed the alarmist proposition that economic grown and trade are bad for the environment because they put more pressure on scarce resources. He argued that "***trade and growth bring wealth to people and governments, fueling demands for environmental***

protection and the ability for society to provide protection, especially through technological development." However, vested interests resisting change align themselves with environmentalists to block growth projects, thus the requirement for proper cost-benefit assessments in policy determinations on development projects. Risk analysis should compare policy impacts and unintended consequences with the doing nothing option, this applies particularly to the current fraught IPCC Net Zero emissions policy in Australia.

Australian environmentalists represented by Muir et al, (2020) in "**Living with the Anthropocene'** contend that "***many concerned people believe humans are causing profound environmental damage across the planet, particularly since the industrial revolution*****," and currently with the climate change crisis** . They worry that "***the pace of change is overwhelming our society to the benefit of privileged groups of people*****.**" Thus, "We must take up the responsibility to provide our descendants with the resemblance of the world we now enjoy." **This issue is less about science than values and "cultural problems** of building more ecologically and culturally sustainable enjoyable places to live and work for a positive future, enabling us to adapt to current changes. We must learn how to survive in our dear country of extremes."

I consider they have valid concerns about the human environmental custodianship of the planet, and the speed of the technological revolution leaving some traditional values behind. However, perceived climate change problems are at a much higher strategic level because they have been vastly exaggerated by alarmists for political purposes. Stephen Schneider, a top global warming guru admitted **they made the climate story scary to get people's attention "Each of us has to decide what the right balance is between being effective and being honest".**

Alternatively, arguing for realistic environmentalism, Michael Shellenberger (2020) in '**Apocalypse Never'** said "*The picture promoted by apocalyptic environmentalists* (such as McKibben) *is inaccurate and dehumanising.* ***Humans are not unthinkingly destroying nature. Climate change, deforestation, plastic waste and species extinction are not fundamentally, consequences of greed and hubris but side effects of economic development motivated by humanistic desire to improve people's lives***. ***The core element of environmental humanism is that rich nations must support, not deny, development to poor nations;"*** *and "Environmental humanism will triumph … because* ***the vast majority of people … want prosperity and nature, not nature without prosperity***."

*Kunzig and Broecker (2008) in '****Fixing Climate'*** *agree with* Schellenberger's *sentiments, they said "****the greatest challenge of man's future is to provide the energy needed to lift the world's population out of poverty without imposing a cost on the planet that neither humans nor the rest of its inhabitants can bear****." "The answer to the challenge is in part political and in part technological, but none of the possible technologies are ready."* Further, ***"Our problem with carbon dioxide is an unintended consequence of a long series of fantastic inventions … that have collectively liberated and enriched***

humanity by utilising modern technology. ***If there is a moral stain in burning fossil fuels; it lies in not taking responsibility for the* (environmental*) consequences***."
Thus, they believe the AGW story that growing atmospheric CO2 is a burden for humanity, due to its potentially serious warming effects and these override the benefits to plant fertilization. They reject geoengineering as a temperature fix as being too dangerous with unknown consequences, so advocate the solution of removing CO2 from the atmosphere and sequestering it in carbonates or secure rock repositories such as depleted oilfields.

Alimonti et al (2022) concluded in '**A critical assessment of extreme events trends in times of global warming'** that *"Since its origins, the human species has been confronted with the negative effects of the climate;* ***historical climatology has repeatedly used the concept of climate deterioration in order to explain negative effect of extreme events (mainly drought, diluvial phases and cold periods) on civilization****. Today, we are facing a warm phase and, for the first time, we have monitoring capabilities that enable us to objectively evaluate its effects."*

"From the Second World War, our societies have progressed enormously, reaching levels of well-being *(health, nutrition, healthiness of the places of life and work, etc.)* ***that previous generations had not even remotely imagined. Today, we are called to continue on the path of progress respecting the constraints of economic, social and environmental sustainability*** *with the severity dictated by the fact that the planet is about to reach 10 billion inhabitants in 2050, increasingly urbanized*."
"***We should work to minimize our impact on the planet and to minimize air and water pollution****. Whether or not we manage to drastically curtail our carbon dioxide emissions in the coming decades,* ***we need to reduce our vulnerability to extreme weather and climate events." "****How the climate of the twenty-first century will play out is a topic of deep uncertainty…but it is not the only problem that the world is facing****. The objective should be to improve human well-being in the twenty-first century, while protecting the environment as much as we can."***

15.4 Climate science and Policy effectiveness

Curry (2017) in a presentation '**Climate Change Science, Fact, Fiction and the Unsettled**.' summarised the state of climate science and the effectiveness of various policies to reduce AGW. Basically, she said that "***emissions policy would have no significant effect on temperature or climate change, whether ECS was high, as claimed by the IPCC, or low*" (<1.5) as indicated by recent research in Figure 9c and the Pause. This is a damming indictment of current US and UN climate science and mitigation policies.**

It is clear global warming scientific activists are continuously altering their climate models and/or adjusting their observational data to fit their evolving scientific evidence towards anthropogenic causes, rather than simply admitting what's obvious to sceptics: **Earth's climate and ocean currents are always changing and always will, due almost entirely to natural causes with minimal input from humanity.**

Humlum (2021) professor emeritus of physical geology and hydrology, in his latest annual review on climate, **'T H E S T A T E O F T H E C L I M A T E'** believes that **much of the "climate change" we see is the result of poorly understood but very natural cycles.** In this annual review he said "*A year ago, I warned that there was great risk in using computer modeling and immature science to make extraordinary claims.* ***The empirical observations I have reviewed show very gentle warming and no evidence of a climate crisis***."

William Happer agrees "***As a scientist who knows a lot about climate, I can assure you that there is no climate emergency… policies to address this phoney climate emergency will cause great damage****."* Dr. Benny Peiser, Director of the U.K. based Global Warming Policy Foundation (GWPF), went further: *"**It's extraordinary that anyone should (still) think there is a climate crisis,** … little has been changing over the last 30 years.* ***The habitual climate alarmism is mainly driven by scientists' computer modelling, rather than observational evidence****."*

Richard Lindzen (2012) noted "*What historians will definitely wonder about in future centuries is how deeply flawed logic, obscured by shrewd and unrelenting propaganda, actually enabled a coalition of powerful special interests to convince nearly everyone in the world that CO2 from human industry was a dangerous, planet-destroying toxin.* ***It will be remembered as the greatest mass delusion in the history of the world - that CO2, the life of plants, was considered for a time to be a deadly poison***." In a recent presentation "**Honest Science**", he said "***Global warming from the beginning has been more about politics and power than about science*****," and "*****the role of (IPCC) models is not to predict but rather to justify the claim that catastrophe is possible*****".**

Many respected scientists particularly geoscientists, concerned professionals and academics have fought against climate catastrophism and its political ramifications with great zeal and purpose but mixed results since 1980. Lindzen noted "***CAGW thinking is a simplistic copout; it flies in the face of global climate history and is a derogation of the scientific method which appears lost on many researchers in this field unfortunately****."* Fellow scientists are appalled how "*science has lost its lustre with the general public as a direct result of the disingenuous antics carried out by supposedly reputable climate researchers who appear desperate to foist on us AGW at any cost - mainly to their reputations*."

Doug Hoffman (2015) in his blog says "***If a supposed scientist uses the word "consensus" or the phrase "settled science" all it means is they have no good argument to support their opinion*****. And that truly is what AGW is, an opinion.**" This is especially the case when they refer to extreme IPCC climate models that have little basis in scientific reality, but are designed to scare the public into voting for hugely expensive climate action policies that have a moral imperative, but no ultimate climate benefit upside. ***"CO2 is being used as a convenient scapegoat by those green influenced academics, businessmen and politicians who are profiting from its vilification***. "

In Steve Koonin's 2021 book, '**Unsettled: what climate science tells us, what it doesn't, and why it matters'**, he says "*What the general media and politicians plus climate activists say about climate*

science, has drifted so far out of touch with the actual science and common sense as to be absurdly demonstrably false 90% of the time". Koonin also says "***Public funding may be justified for balanced assessment of the costs and benefits of alternative climate policies. But it is not justified for one-sided, biased advocacy climate science produced not to help choose policy, but to justify an already predetermined policy response as advocated by the climate alarmist clique****. The moralization of scientific disagreement, the branding as 'deniers' of those who dispute the science advocacy produced by government-funded climate science organisations, can only end when such funding ends*."

Climate Intelligence (CLINTEL), a European independent foundation active in the field of climate change and energy transition, was initiated by emeritus professor of geophysics Guus Berkhout in 2019. **His objective is to make the many sceptical climate organizations around the world combine forces and work closely together against one-sided alarmist information and false conclusions promoted in the news media.** CLINTEL formulated the World Climate Declaration (WCD), a one-page summary of what scientific climate realists agree www.clintel.org. This declaration has received huge support throughout Europe and worldwide. "***WCD states that global warming is a fact but not a crisis, the cause of global warming has large natural components … more CO_2 in the atmosphere is a blessing, and climate measures must be focused on adaptation*.**"

CLINTEL understands "*Today's huge technological investments that try to stop climate change are a historical mistake.*" "*Today, we see that undemocratic, unelected supranational organizations – such as the WEF, IMF, World Bank, IPCC, UNFCCC, WHO, FAO, etc. – bring global regulations that overrule national laws, this will bring poor outcomes.* ***False scientific models have given these (supra)national organizations a license to experiment with the global energy and food system. As expected, the outcome is catastrophic***."

15.5 Renewable Energy transition issues and Policy outcomes

CLINTEL also blames the EU "*Look also at the current energy shortage. That is not (only) the fault of the Ukraine-Russian war, but it is (entirely) the fault of incompetent governments who banned investments in fossil fuels*." Currently, **Germany is the poster child for the dangers of ideological pursuit of low-carbon energy polices and ramping up investment in 'renewable' energy systems, without considering how they put reliable energy supplies at risk and consequently raise energy prices to politically damaging levels that hurt the poor disproportionally**. There is hope however, as coal and (nuclear) plants are being put back on line to reduce the dubious reliance on gas and renewable energy, but this is tantamount to tearing up the EU's sacrosanct net zero emissions policy, difficult times all round.

Importantly, there is growing recognition that these UN inspired policies supposed to address the asserted "existential threat" of climate change, are themselves the true existential threat to modern civilization, and western democracies in particular.

Smil (2020), in his study of **'Energy, A beginners Guide'** discussed its possible future trends and technologies. He stated "***We are a fossil-fueled civilization whose technical and scientific advances, quality of life, and prosperity rest on the combustion of huge quantities of fossil carbon****, and we cannot simply walk away from this critical determinant of our fortunes in a few decades, never mind years.*"

Despite the overwhelming evidence that socialist systems have worse environmental outcomes, including CO2 reduction, normal market mechanisms are thought inadequate to accomplish climate goals. "*Energy is needed for everything that is fabricated, grown, operated, or moved, digital devices and complex modern hardware take huge amounts of energy to make.* ***Deluded advocates for a carbon-free world…underestimate not only how much energy the world already uses, but how much more … the world will yet demand to maintain or increase its current prosperity***."

While 'Net Zero by 2050' (NZ50) sounds promising, it is the antithesis of a rational, fit-for-purpose Government policy to take us all into an uncertain future. Smil agreed the "***NZ50 target is 'delusional' everywhere*****;" his books amply demonstrate that its achievement is both physically and politically impossible**. Even climate alarmist James Hansen surprisingly agrees "***Most environmental groups lived in fairyland, never working with utility experts — who must keep the lights on — and not understanding that most nations will always give priority to their immediate development and economic well-being over the long-term global warming issue*****.**"

However, environmentalist Patrick Moore recent chair of **'The CO2 Coalition' advocacy group, supports reliable energy sources, whereas "*Solar and wind power are both very expensive and very unreliable****. It is almost like a mental illness that so many people have been brainwashed to think entire countries can be supported with these technologies.*" Renewables can only have a small role to play in support of dedicated baseload power.

The US has played a central, and occasionally positive role in climate negotiations; unfortunately, the **Biden's administration climate change environmental policies are sensationalizing the potential threats while ignoring all the real benefits, as they try to push forward the "Progressive's Green New Deal**". Their reliance on speculative climate models is pathetic, as they are unable even to reproduce the measured temperature changes of the 20th century, never mind this century. **Biden's and Trudeau's campaigns against U.S. and Canadian coal, oil production and pipelines are not just economically and morally harmful to their nations—they amount to environmental and social fraud against humanity's progress, future prosperity and common sense.**

Global energy consumption since 1800 shown in Figure 32 compiled by Smil, has been characterised by the expansion of all power sources and is dominated by the overwhelming expansion of thermodynamically competent sources of energy, such as coal, oil, natural gas and fissile uranium over recent decades.

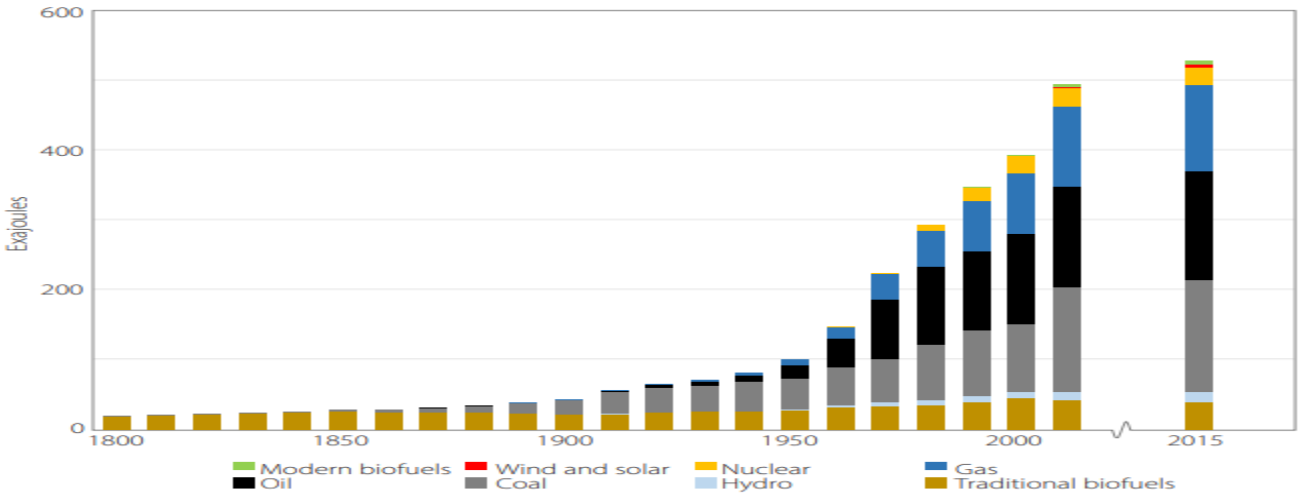


Figure 32. Composition of World total Primary Energy 1800 – 2015 ***After Smil 2020***

*Smil noted "**all renewables combined, that is modern (wind, solar) and traditional (biofuels and waste, hydro), constituted about 13% of global supply in 1971 and only 14% in 2019***" despite all the promotional hype and expense. **Even in China "*all renewables constituted 24% of China's energy in 1990 but only 9% in 2018**, even though the absolute quantity of renewable energy has increased."* **Again, there is no real transition happening in Asia due to the lack of tangible benefits over other more reliable energy sources in a growing economy**.

Smil further noted "**During the next half century … the basic nature of global energy supply will not drastically change, and the world will remain highly dependent on fossil fuels**." **Effectively, "*The transition to an energy system based predominantly on non-fossil resources is in only its earliest phase. Given the knowledge and resources at our command the challenge should be manageable, but the shift will not be extraordinarily rapid.*"** To put this in context, the pre-pandemic decade of shale expansion added 800% more energy supply to the U.S. than did the heavily subsidized expansion of solar, wind and battery (SWB) technologies.

Constable's (2022) GWPF report '**Europe's Green Experiment: A Costly Failure in Unilateral Climate Policy'** noted "***The very small contribution from wind and solar renewables that are low-productivity energy generation assets,*** *shown above the red line just visible in the 2015 data,* ***does not justify the UN-EU claim of an energy transition****."* He also noted "***carbon dioxide abatement costs in the EU are on average several times greater than even high-end estimates of the social cost of carbon***". **The economic harm of the EU's mitigation policies "*is greater than the climate change it aims to prevent*"**. There is "*clear evidence that* ***climate policies have resulted in falling productivity in the energy sector in the European region***." *"Thus, the (AGW) policies are succeeding in a higher and moral sense. The pain is proof of virtue*." In relation to this virtue signaling, Mann (2018) said "**If, as most economists believe, people tomorrow will be more affluent than people today, the hazard is that we end up valuing tomorrow's rich more than today's poor**."

Judith Curry (2016) in https://judithcurry.com/2016/01/06/renewables-and-grid-reliability/ reported that "***Conventional power generation has characteristics that support the stability (*reliability*) and operation of the grid. They have inertial mass and spin in synchronism with the wave forms powering the system while readily providing voltage and frequency support.***" However, *"As wind and solar make up a larger percentage of the generation resource base we see an erosion of these desirable characteristics … the economics can degrade*" and performance is compromised. "**Increasing the penetration levels of renewables** (beyond say 10%) **will lead to rapidly increasing costs as well as rapidly decreasing reliability**." In addition, adequate backup and power storage is necessary when these systems are not operating effectively.

We are now more alert to the failure of the green energy transition from fossil fuels over the past 20 years, and even **more alarming for genuine environmentalists is that their "decarbonization" policies are wreaking more financial and environmental havoc on the planet and our society now, than the imputed global warming could possibly achieve in future.** This process includes power unreliability, failing heavy industry, slowing fossil fuel development and primary industry disinvestment, thus increasing unemployment and poverty. Also relevant are sourcing required minerals, supply chain issues, unsustainable batteries, forest destruction for biomass fuel and ethanol producing crops, disposal of toxic material from short life windmills and solar panels, bird kills and noise/visual/space pollution.

Mark Mills (2022) in '**The Energy Transition Delusion**' goes further into the costs involved, "Even though wind/solar machines don't have fuel costs and have lower maintenance costs than combustion machines, **grid-scale battery costs would have to drop at least 20-fold to match the reliability economics of conventional dispatchable power. There is no physics, never mind engineering or economies of scale, that points to such a possibility**." "Replacing hydrocarbons with solar and wind facilities also uses at least 1,000% more steel, concrete, and glass to produce the same amount of energy. Including EV's and battery development, "The aggregate impact on mineral demands is far greater than both existing and planned global mining capacities."

These "*renewables are limited as they only gather intermittent and dilute sources of energy, Wind and Solar. As such they are not capable of producing the major increases in excess power needed by modern civilisation, they are parasitic on all other conventional* (base load) *power generation technologies*." However, globally "*Wind and solar now employ as many workers as the oil sector.*" *But a*s a measure of their low efficiency, **"*renewables require 300,000 more employees (>50x) per exajoule of output than the oil & gas industry does.*"**

Fundamentally, economic growth and wealth creation is about getting more done with fewer workers, the primary goal should not be to create jobs but more wealth and general prosperity – as more jobs are created as a side benefit of a growing economy. Figure 33 shows the 10-year low productivity record for European Weather-Dependent "Renewables":- that is the annual power output divided by the nominal installation rating of the installations; compared to conventional power generation.

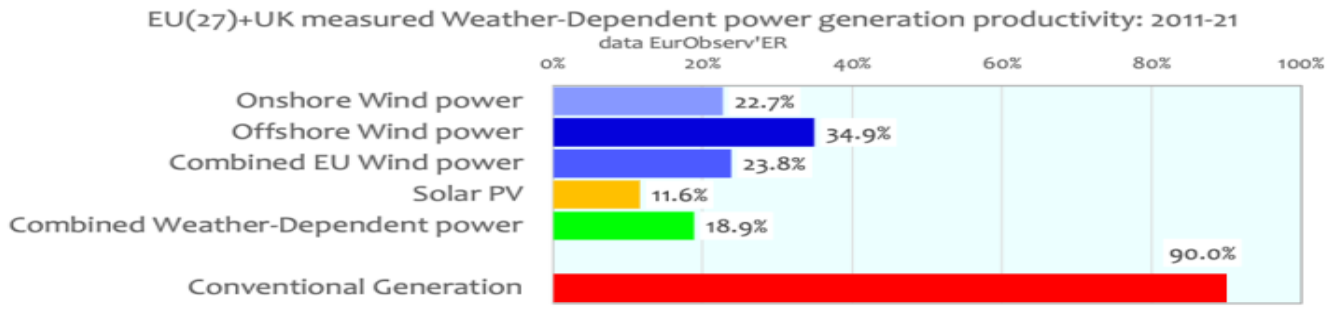


Figure 33. The productivity of European Weather-Dependent "Renewables" generation from 2011-21. After WUWT 5/10/22 From edmhdotme WordPress.com site.
Hydro, Gas-firing, Coal or Nuclear technologies are used for necessary backup when this unreliable 'renewable' power regularly fails to deliver its demand quota.

In summary, "*the EU finds its hopes for an energy transition to be an illusion, the claim that renewables would diversify supply and increase security has been falsified; the appearance of fuel diversity was a mirage concealing a fragile natural gas policy*." Meanwhile, as a measure the vibrancy of an economy, **the EU's energy consumption has now fallen by over 10% on its 2006 peak and the UK by 30%, this is very bad news for their industries and jobs.**

The EU's commitment of subsidies to the renewable energy sector is nearly 70% of the total across all major economies. **Between 2008 and 2021, renewable energy subsidies have cost consumers in the EU about $746 billion.** When Spain could no longer afford to subsidize its solar generation system, related investment collapsed and the industry withered. **Effectively, the EU paid €770 billion to export its carbon emissions and jobs to China and import nearly everything else particularly renewable energy technology**, a Faustian bargain indeed.

Judith Curry (2022) in '**Energy transition: The land use conundrum'** said "It is viable and affordable to take wind and solar to about 30 percent of a power system, but unless there is hydropower backup, energy storage or remote transmission capability, the cost profile for additional wind and solar becomes increasingly unfavorable, and there are increasingly adverse consequences for electric power system reliability and performance." "**Wind and solar will probably become less competitive as new and better technologies become available in the coming decades**. I don't see a role for biofuels in the future, **I suspect that land use issues will become more important than CO_2 emissions in determining the sources of electric power**."

Thus, **we need more time, money and research into new technologies before we can peacefully transition to other reliable energy sources**, this activity should be the prioritized over the current unfortunate political focus on ephemeral and mostly benign climate issues. Attempts to speed up the transition away from fossil fuels by restricting the production of fossil fuels and new generating plants has backfired by making European countries less energy resilient and reliant on Russia's fossil fuels and

OPEC oil. **The prosperity generated from a modest increase in domestic fossil fuel production in Western Europe could be the basis for a short or long-term reversal of their current foolish energy policy. Only dire economic and political pain will end this climate fear-energy deprivation process**.

Lord Martin Rees an astronomer, climate catastrophist and former president of the Royal Society said in '**On the Future'** 2021 that "***Science and ever more powerful technologies – can open up a benign future, if they are deployed wisely and humanely***". He agrees with Smil about slow energy transition, "*The planning horizons for infrastructure, (power) and environmental policies needs to stretch for fifty or more years into the future*. *Solar energy is already competitive*, but … ***Renewable energy is still expensive to generate." "My pessimistic guess is that political efforts to decarbonize energy production won't gain traction****. CO2 will increase…through the next twenty years, but by then we will know … just how strong the feedback from water vapour actually is. If the 'climate sensitivity'(ECS) is low, we'll relax. "* In summary, Rees expects the worst-case climate scenario due to the AGW theory, but admits **given time new technology can mitigate climate issues, and there won't be a future warming problem if ECS is proved to be about 1 or less** (see Figure 10).

Scafetta (2022) agrees, on review of recent GCMs she suggested "*ECS could be 1.2–2.0C. Therefore,* ***only the 21st century climate projections produced by the low ECS GCMs should be used for policy.*** *Furthermore, the global warming expected for the next few decades may be even more moderate than predicted by the low-ECS GCMs and could easily fall within a safe temperature range where climate adaptation policies will suffice." Therefore,* ***aggressive mitigation policies aimed at rapidly and drastically reducing GHG emissions in order to avoid a too rapid rise in temperature do not seem justified, also because their costs seem to outweigh any realistic benefits****."* **Clearly the cure is worse than the disease, so the precautionary principle is being misused here by the environmental lobby.**

Climate 'Luke warmers' such as environmentalist Michael Shellenberger and economist Bjorn Lomborg – both obviously intelligent and thoughtful – have come to the same conclusion as Rees, that **so-called 'renewables' are useless for base load and horrendously expensive, so nuclear, hydro and fossil fuels remain the best bet for the near future.** Yet they still believe that "**Climate change" is a serious future problem, but will be readily manageable by allowing developing nations to utilize the benefits of industrialisation via cheap reliable energy to achieve prosperity and human growth, thus they can afford to adapt. Morally, they don't want to deny poor nations their chance at modern development and prosperity due to illogical and ineffective climate policies**.

15.6 Climate Economics and Adaption

In relation to 'Net Zero by 2050' there is yet no verifiable feasibility study or costed business case, and there may never be one in the absence of major technology change that can engineer the gradual phase-out of fossil fuels. One recent 'guestimate' was for >"*$5 trillion a year for 30 years",* a political and economically unaffordable amount, as if the UN officials responsible really cared, what a COP-out!

William Nordhaus won the 2018 Nobel prize for work on the economics of climate change that showed, among other things, "*both that* ***aggressive emission reductions were costlier than doing nothing, and that the optimal course of action would be to reduce emissions to only slightly below the business-as-usual case****. Nordhaus's analysis does not support the 1.5°C policy [of CO2 mitigation] or anything close to it*." Lomborg (2021) commented "*Across the world, politicians are going out of their way to promise fantastically expensive climate policies. President Biden has promised to spend $500 billion each year on climate — about 13% of the entire federal revenue.* ***The European Union is planning to spend 25% of its budget on climate.*****" These figures are obscene and a totally unrealistic spend on a virtual non problem!**

Furthermore, Lomborg says*" most voters aren't willing to pay for these extravagant climate policies." "Climate policies could end up hurting much more by dramatically cutting growth****. For rich countries, lower growth means higher risks of protests and political breakdown."*** He goes on to say" The *UN Climate Panel finds that if we do nothing, the total impact of climate in the 2070s will be equivalent to reducing incomes by 0.2-2 percent*." This is hardly the end of the world, and **by not wasting money on climate now we can afford to adapt to future problems.**

The UN estimated **the average person (worldwide) in 2100 would be 450% better off than today**. But, under a worst-case scenario for Climate Change, the UN fears that people might only be 434% richer. That is far from being an "emergency", on the contrary, it is great news for our grandchildren.

However,In Lomborg's *2020 book '****False Alarm'*** *he said "****It turns out that the theoretical cost to lift everyone on the planet out of extreme poverty would be less than $100 billion per year****. Compare this to our current trajectory: we've committed to spending $1 trillion to $2 trillion a year just on the almost entirely ineffective Paris Accord." Overspending on bad climate policies doesn't just waste money, it means underspending on effective climate policies and underspending on the opportunities we have to improve life for billions of people, now and into the future. That's not just inefficient. It's morally wrong."* Lomborg pointed out "***Contrary to the current alarmist narrative, human's adaptive capacity is vastly***

larger than any conceivable changing climate risks, it would be a whole lot easier and cheaper to just let climate happen and adjust to the conditions if and when they become threatening."

It appears from Lomborg's analysis that we simply cannot afford to enact the Paris Agreement emissions zero policies currently in vogue led by the UN, EU, UK and now the Biden administration, especially as they will have no measurable impact on future climate. The only obvious effect of these policies in the short term will be to ruin or emasculate western economies and political influence to the ultimate benefit of Asian "Developing" economies such as China, India, Vietnam and Indonesia. **Given China is now the no 2 global economic power and alone produces ~25% of global emissions, why should it not pay its share of the mitigation burden? Is it still justified to still classify China as a Developing nation, when it supplies and materially supports a large chunk of the global economy?**

European climate realists CLINTEL rejects current mitigation policies and advocates the world should:

1) accept climate change as an unavoidable natural phenomenon,

2) better understand the climate system with truthful science and

***3) adapt to its continuous changes by developing effective adaptation technologies*.**"

*Montford (2022) agrees and advocates "**Adapting to even the largest impacts of predicted climate change, is orders of magnitude cheaper than trying to change the weather in 2050**. For two decades, mitigation has been ascendant. It has led us to the ecological and economic illiteracy of Net Zero, and to the energy crisis in which we find ourselves today.* **Adaptation spending addresses real and immediate threats of actual changes in the world directly, therefore it *is the only rational policy option for climate change action today*."**

What is plainly evident is that **the Paris Agreement's attempt to dictate political terms to the world based on the dubious assumption that we can control our eco-fate in 20-50 years hence; is scientifically illiterate, politically impossible, economically ruinous and critically also morally bogus**. Therefore, this dubious agreement and net zero emissions manifesto with its non-binding protocols are doomed to fail miserably. Thus, the EU are starting to hedge their climate bets on a Net Zero future.

Even Germany the wealthiest entity in the EU cannot possibly meet its climate goals and survive as a credible economic or political entity. This is especially true due to recent military aggression in Europe by Russia who supply critical fossil fuel energy to key member states. Consequently, Germany is revising its energy system and upgrading its nuclear and military capability to be more self-reliant like France; whilst **the UK must step back from its disastrous net zero energy policies, re-embrace fossil fuels and nuclear to keep its economy functional until better alternatives exist**.

16. Australian Climate and Energy Policies

Political decisions in Canberra related to climate and energy policy over the past three decades have been based on unreliable climate data, dubious sustainability criteria and earlier failed predictions from uncertain global and local climate models **provided by the IPCC, CSIRO and BoM**. **These decisions are therefore in error and need to be revised - not endlessly justified or needlessly acted upon, as in the ongoing zero net emissions nonsense**.

Carter et al 2012, in an analysis of climate reports to the Australian government stated "*History demonstrates that climate will continue to change regardless of human activity.* ***The ability of societies to adapt, preserving their prosperity, health, stability and way of life, is linked to their resilience and overall economic strength. Wantonly destroying the energy security that has been Australia's main source of economic strength can only decrease resilience and increase vulnerability to climate hazards***." This process is virtually economic suicide.

On emissions controls they said "***reducing carbon emissions and encouraging "clean" energy sources is extremely costly, and will do little that is measurable to reduce climate hazard in Australia. Thus, even a massive 50% emissions reduction by 2050 would only result in a 0.10°C reduction in global temperature****. This hardly seems worth the price of inhibiting modern development in third-world countries, as well as deliberately lowering the living standards of all those who, more fortunately, inhabit the industrially advanced western countries*."

The previous Carbon Tax and the current net zero emissions policy being classic examples of inappropriate solutions to an unjustifiable problem, too many heads in the sand here and not enough knowledge, common sense or statesmanship by our leaders**. Due to our fossil fuel resource-based economy, with limited hydro and lack of nuclear power, Australia has more at risk here than most developed nations, so we need to push back from the international pressure to conform to inappropriate policies that will impoverish us for no climate benefit**. **Current energy policies risk Australia's hard-won reputation as a reliable energy superpower.**

For too long Australian climate science and related public service disciplines have paid lip service to radical environmentalism, scientists understood their role to be about fostering public alarm about climate issues, rather than creating public understanding of a young and uncertain science. Australian academia and peak government funded scientific organisations such as the CSIRO and BOM, as well as **State bureaucracies appear to have been increasingly captured by leftist (Green) environmentalism since the 1970's and now by its modern equivalent AGW alarmism**.

Carter et al, (2012) commented "***The practice of informed scepticism is the essence of scientific endeavour in all fields,*** *yet* ***to publicly query climate science issues in Australia's current stultifying***

climate of political correctness and sustainability dogma too often triggers denunciation, ostracization or alarmist group think."

We urgently need to reject this intellectually suffocating dogma, challenge the absurd economic narratives of climate advocates, and not allow our politicians to continue promoting heavily subsidized, expensive renewable energy, that will result in energy poverty and lower national GDP growth.

According to Lomborg (2009) in '**Cool It**' "*Current technology is so inefficient that we will have to blanket most countries with wind turbines to power everyone's needs, and even then, we have the problem of storage when the wind doesn't blow.* ***Policy makers should abandon fraught carbon reduction negotiations and instead make agreements to invest in research and development to get this technology to the level at which it needs to be." and "towards the middle of this century we could make "green" energy so cheap that everyone would use it."***

In addition, **not only will the current weather-dependent solar and wind technologies have no effect on climate, they may never even save any net CO2 emissions**. This is because the savings during their service life will likely be less than required for their materials sourcing, manufacture, installation, maintenance and eventual demolition. Thus**, unreliable so called low-carbon 'renewable' energy represents a net positive CO2 process, just the same as fossil fuels.**

Dependent on how one defines 'Net Zero' Australia and NZ have already over-achieved their Net Zero targets. Right now, we are net carbon sinks, as the vegetation in our National/Regional Parks alone absorbs more than our annual human-related emissions. Nevertheless, newer and better energy technologies are required replace or upgrade fossil and nuclear fuels to guarantee reliable, low-cost environmentally sustainable production worldwide, irrespective of any potential climate change issues. **As for climate science, it needs a new unifying theory to replace the failed hypothesis of anthropogenic global warming, and new tools to replace the current extravagant GCMs.**

16.1 CSIRO climate correctness

Without providing any of their own due diligence evidence of CO2's supposed dominant greenhouse gas role in today's atmosphere, CSIRO management appears committed to the anthropogenic global warming concept. They apply the post-modern precautionary principle that **we should act now to prevent potential future dangerous warming despite no supporting data for it in Australia, as shown in Figure 28**. Accordingly, they provide biased advice to government that effectively promotes the IPCC, Paris agreement and related zero emissions policies, without proper rigorous assessment of climate uncertainties, or the huge costs and long-term negative impacts on the economy, business or people's livelihoods. **CSIRO management appear to be more concerned with protecting their past good reputation and cosy grant funding schemes, than looking for climate science truth or solving real climate problems**.

McKenzie (2012) in '**LOSS OF INDEPENDENCE AND INTEGRITY' provides an excellent review of CSIRO climate science.** Summarizing his findings, he says "***The result has been a disturbing loss of professional and public confidence in the CSIRO's objectivity when contributing to the climate change debate, and its 'official' contributions continue to be biased, unreliable and deceitful,*** *perpetuating the politicised corrupted and exaggerated claims of the discredited IPCC."* "***Why, at enormous social and political cost to the entire Australian community, is the CSIRO promoting a policy as being scientific, which has NOT been shown to be based upon science?"*** He also suggested "*Clearly there should be more accountability and transparency here in the national interest.* ***The CSIRO deserves nothing less than the benefits of a full Royal Commission to restore its ailing reputation, and this should be extended to cover political or management interference in science generally."***

Former Chief Research Scientist with the CSIRO Division of Atmospheric Research Dr. Garth Paltridge said of the CSIRO: "They have been so successful with their message of greenhouse doom that, should one of them prove tomorrow that it is nonsense, the discovery would have to be suppressed for the sake of the overall reputation of science." His 2009 book '**The Climate Caper - Facts and Falsies of Global Warming'** suggested the collegiate PC at CSIRO would have the result that "*Public policy could itself become the captive of scientific-technological elite*." **Other retired senior researchers at CSIRO have similarly criticized the quality of climate science and overt political management of data and publications**, indicating there is an atmosphere of intimidation if one expresses dissenting views or evidence against the consensus alarmist view dictated by the administration.

Dr Art Raiche, former Chief Research Scientist at the CSIRO, says **the organization's fear-mongering over climate change can't be trusted: "*It is my strong belief that CSIRO has passed its use-by date****. The organisation that bears the name of CSIRO has very little in common with the organisation that I joined in 1971, one that produced so much of value for Australia during its first seven decades*." "***Since management consultants were introduced in the late 1980's, we were punished for publishing anything or public discussion of any research that could be seen as critical of government policy.***" "***They don't even understand the basic physics of drought, whereby lower evapotranspiration leads to warmer soils and higher air temperatures***."

Dr Kevin Trenberth who played a leading role in the development of IPCC / CSIRO science, promoted the idea in **'Framing the way to relate climate extremes to climate change' that any climate extreme represents the impact of anthropogenic climate change**. **This is not proper science, merely advocacy** for a catastrophic future outlook, fortunately this proposition has been rejected in several IPCC AR's and in a 2012 *Nature* editorial. In general, though **when it comes to politicised climate science a much lower standard of evidence is required, particularly related to accepting and disguising uncertainties, than is acceptable in other branches of science.**

One Nation Senator Malcolm Roberts an engineer and climate sceptic prepared a senate report in 2015 titled '**FALSE CLAIMS REVEAL HIDDEN OPPORTUNITIES'** in response to Senator Birmingham's apparent

reliance on false claims by the BOM about climate science. In this report he details the BoM's lack of evidence for AGW and its subservience to the IPCC's globalist political and environmental agenda. Roberts (2016) then conducted an excellent detailed evaluation of CSIRO climate science in '**ON CLIMATE, CSIRO LACKS EMPIRICAL PROOF'**. This showed that **they blindly accept the BoM datasets and IPCC science including their failing models, without any proper independent due diligence or robust research on natural climate change related to Australia**.

In reference to the CSIRO climate advice, Roberts stated that "*seventeen internationally respected climate scientists from Australia and five other nations verified our conclusions about CSIRO.* ***In effect, the BoM and CSIRO's science on the matter of climate for policy making is shamefully inadequate, obviously distorted or ideological in nature and amounts to a gross misleading of Federal Parliament***." He noted, "***It is the duty and responsibility of politicians to base costly policies and economic structural change on robust scientific evidence, not discredited papers and deficient models***." **He then called for "*a halt to all climate policies and spending until credible empirical evidence is provided to justify the spend, and for an Office of Scientific Integrity to scrutinize science used for policy.*" Such a review is even more important now.**

Robert's report on **CSIRO's climate science created a scandal that ultimately resulted in the sacking or redeployment of many of these scientists** by the Abbott government. Unfortunately, Turnbull then replaced Tony Abbott as PM and put greenie-friendly Greg Hunt in charge of the environment. Minister Hunt, vetoed a Royal Commission into climate science because it was going to be too politically damaging, and so the equally culpable BoM got away unscathed. Nevertheless, a chastened **CSIRO subsequently admitted that CO2 is only a minor driver of the greenhouse effect they rely on for rapidly increasing temperature in their climate models**.

Australian Dr David Evans, one of the world's top computer modellers, states in 2015, "***CSIRO climate models should not be used for policy as they are not right yet. The performance of all climate models, including CSIRO's, are not sufficiently validated and consistently overestimate warming***." There is no empirical evidence that rising CO2 will raise temperatures as fast as the UN's (IPCC) predicts. "***Yes, CO2 has an effect, but it's about a fifth or tenth of what the IPCC says it is. CO2 is not driving the climate****; it caused less than 20% of warming in the last few decades*. *The model architecture was wrong*." "***The climate is largely driven by factors outside our control***

Evans concluded "*So* ***rather than admit they were wrong, governments, and their tame climate scientists, now cheat and lie outrageously to maintain the fiction that carbon dioxide is a dangerous pollutant***." **These are damming criticisms of the IPCC and CSIRO's attitudes and performance in relation to climate change.**

16.2 Bureau of Meteorology climate policy issues

Marohasy (2014) wrote a public letter to the Environment Minister Greg Hunt about **the trashing of historical temperature data and current data manipulations by the BoM**. She provided evidence from

satellite data and historical records refuting the Bureau's changed approach to recording climate data with their ACORN network. She also requested that, "*Given potential and actual conflicts of interest, could the Australian Bureau of Statistics, (ABS) rather than the Bureau of Meteorology, be tasked with the job of leading the high quality and objective interpretation of the historical temperature record for Australia*?"

Unfortunately she was fobbed off by a bureaucratic reply, so no effective Government action has been undertaken to officially review the BoM's climate datasets and its methodology. They remain a protected elite species, but their time of reckoning will come soon. She summed up the BoM's performance "*For many years management at the Australian Bureau of Meteorology have been **more interested in output from their simulation models**, attending Intergovernmental Panel on Climate Change (IPCC) meetings, and warning of endless drought whereby dams will never fill again, rather **than considering how to improve the skill of their rainfall forecasts. Never mind accurate record keeping***."

Neil Plummer, who left the bureau in 2018 after 33 years working on climate and forecasting, said the agency had become cautious and "risk averse" over climate change during successive Coalition governments. Prof Scott Power, a climate scientist who left the BoM in 2020 after more than 25 years, said under the leadership of the chief executive, Andrew Johnson, the agency was "*trying to keep the lowest profile it can get away with on climate change. As a result, the Australia public has been far less informed on climate change than they should have been*." **There is apparently a toxic culture at the BoM, with staff not allowed to talk about climate change, perhaps this is because of their poor prediction record, blatant data manipulation and resultant bogus climate alarmism**.

According to Jo Nova the BoM are now limiting the number of balloons sent up to regularly measure atmospheric trends. A consequence of this incompetence is that they are not meeting our WMO obligations on upper atmosphere observations, that are also crucial for their numerical weather prediction models. Thus, BoM's forecasting ability will decline and predictions worsen. Clearly federal intervention is urgently required to reset the malpractice rampant in this organisation.

Eminent Australian climatologist William Kininmonth said in "**A natural limit to Anthropogenic Global Warming' "***surface temperature rise from CO2 forcing is grossly exaggerated, …increased evaporation constrains the surface temperature rise. **The extensive oceans and the Hydrological cycle are a natural constraint on global temperature, and dangerous Anthropological global warming is not a feasibly outcome". A doubling of CO2 concentration … will cause a modest … rise not exceeding 1C."***

This is further proof that the BoM and CSIRO are working with a failed climate hypothesis and need to admit they do not understand the climate system well enough to make viable predictions, **especially with their flawed and expensive new models**. **Above all they need to stop mismanaging the climate data with their 'ad hoc' homogenization process and** put their historical records in proper perspective.

They urgently need to get back to tried and true statistical climate predictions and behave like etheical scientists. They should report the real facts not parrot politically biased environmental opinions.

16.3 Climate Ideology and alarmists

Climate reports to government have traditionally presented unwarranted alarmism from the CSIRO/BoM, Climate Council and the Chief Scientist. Key players are ecologist climate commissioner Tim Flannery, scientists Will Steffen, David Karoly, Pitman and others such as economist Garnaut. Misusing the precautionary principle, these entities have caused major political divisions, economic turmoil and forced browbeaten weak governments and 'PC' States like Victoria and South Australia to act in seemingly irrational ways. This has resulted in major divestment of 'hated' dispatchable coal and gas power, ramped energy costs and investment of $billions of scarce public funds in remote, unreliable 'renewable' energy projects, plus seawater desalination plants that now sit idle.

Flannery has disgraced himself with sceptics and the public by making many unfounded statements and false predictions about climate change and future weather conditions in Australia, based on his fervent alarmist belief in AGW. In his book '**The Weather Watchers'** (2005**) he frankly discusses the climate change issues, but simply accepts the IPCC consensus view** that industrial CO2 is to blame for modern warming, and "***future tipping points will lead to climate disaster, if decarbonization of the world's economy is not taken seriously***."

He does however, admit to nuclear power is an option to keep the lights on, after all "*the sun is nuclear energy at a safe distance.*" and "*all power grids need reliable 'baseload' generation …there remains a big question mark over the capacity of renewable technologies to provide it*." "There is no silver bullet for decarbonizing the grid: rather we will see a multiplicity of technologies used wherever favourable conditions prevail." **Thus, he is more rational about climate mitigation and the need for new technology. But due to his well-intentioned environmental and ecological history of 'saving the planet', won't accept the possibility that his understanding of climate science or its environmental consequences is biased. As Plimer (2021) says, "By not abandoning computer models, Flannery allowed ideology to over-rule real world data that underpins science",** what a shame for his many erstwhile admirers, but he does not deserve to hold the position of Climate Commissioner.

Clearly, **something is very wrong with the way in which scientific policy advice regarding climate change, our fossil fuel energy economy and other environmental issues such as the Great Barrier Reef (GBR) is being delivered to Australian governments**. As the IPA recently put it "*Ministers and policy bureaucrats do not have the capacity or the time to assess the scientific evidence, so they rely on the authority of scientific institutions* such as the CSIRO, ARCCECE, AAC and BoM. *It is a matter of trust and if this trust is based on a self-interested (ARC) funding methodology, it is a trust misplaced*."

Andy Pitman, director of the ARC Centre of Excellence for Climate System Science (ARCCECE), told *The Weekend Australian recently*: **"Climate models are very valuable tools for many applications but they**

are not something I want used to decide investment strategies for my superannuation." This led to Jo Nova (30.9.22) commenting "*So climate models are not good enough for his superannuation but it's fine to bet the national economy on?"*

I suggest that **some of the ARC government funded climate academics, BoM and CSIRO scientists or their leaders are practicing post-normal science.** The attraction of this philosophical approach for some climate scientists is obvious: "*the old restrictions of the scientific method could be set aside, fractionally or completely, in the pursuit of moral and ideologically ''higher'' goals such as saving the planet*". This is essentially noble cause corruption and appears to be a key part of the politization of CSIRO and BoM management, who have heavily restricted the scientific output of its climate scientists to conform with government, ideological or collegiate requirements.

This leads to the disgraceful cancel culture behavior of James Cook University (JCU) against Prof Peter Ridd over climate issues and his truthful exposure of the Great Barrier Reef's good health and JCU's poor reef research practices leading to false reports of its demise. Previously it was Prof Bob Carter who got ostracized by JCU due to his sceptic views on climate issues. As Jennifer Marohasy (2020) said "***It is not Peter Ridd's personal opinion that the corals are alive, and the Great Barrier Reef resilient to climate change. It is fact****. I've seen the coral reefs whose health is contested with my own eyes: they are very much alive. What is dead is academic freedom in Australia*".

Federal Minister for the Environment, Tanya Plibersek, has recently given Clive Palmer's Central Queensland Coal Project the thumbs down because of alleged direct impacts on the Reef and also impacts on 'the values of the Great Barrier Reef World Heritage Area'. This is arrant nonsense as the project is more then 100km inland, beside Adana's currently operating environmentally approved mine; it's just revenge leftist politics by this arrogant new socialist government. It's also a continuation of inner- city elitist climate environmentalism whereby **the most productive parts of our economy such as our mining and agriculture industries are under the threat of ever-increasing green tape and climate policy restrictions.**

It seems that **only Queensland senators Roberts and Canavan are prepared to stand up and contest consensus climate science and related critical energy matters in parliament, whilst the Liberal opposition has lost its climate mojo.** It is a national disgrace, that their rational climate sceptic views are regarded as extreme or worse un-Australian by the majority of their scientifically ignorant fellow parliamentarians.

Almost equally disturbing is that **mainstream Australian media sources except Sky News and The Australian, now display an almost complete incapacity to assess environmental and climate matters objectively or professionally. They all have an alarmist lens**, particularly the ABC, and no scientific balance based on facts or logical evidence. Regarding alarmism, the Director of ANU's Centre for the Public Awareness of Science, Dr Sue Stocklmayer, said "*that she was not a climate-change sceptic*", but was nonetheless worried that "***too much time was spent presenting scary scenarios, especially to young people. Global warming is being portrayed as a Doomsday scenario with no way out***. " As Wishart

(2009) noted "The media and 'global warming' believers have been too quick to blame everything under the sun, but not the sun itself, on or for global warming."

It is evident in Australia that continuing to focus on CO2 and other "greenhouse gases," as the primary or sole cause of climate changes and weather events, will ensure that we never get beyond the politically driven, totally wasteful and expensive climate and energy battles in which we are now engaged.

16.4 Natural disaster management

As recent bushfires, drought, floods and previous cyclone disasters show, the risks of these dangerous but natural weather events and longer-term cooling remain by far Australia's greatest local hazards. Global warming paranoia can wait.

In Australia there is a link between hazardous fuel loads, a positive Indian Ocean Dipole and forest fire intensity, as the Australian bush has evolved through fire and eucalypts require fire for propagation. **However, the BoM, climate related NGOs and greenie environmentalism denies this link between proper forest management and (aboriginal style) cold fire reduction in fuel loads, towards reducing future fire intensity**. They blame anthropogenic climate change for dangerous fires in eastern Australia in 2020, without empirical evidence showing any clear relationship, nor can they show that atmospheric CO2 levels play any part in bushfire numbers or intensity. Despite media hype, natural disasters here or globally have not increased in scale or intensity during modern climate change!

Every enquiry after catastrophic bushfires in Australia have recommended that rigorous proscribed fuel reduction burning is necessary to minimize bushfire damage, but is strongly opposed by the environmental lobby because it creates CO2 and disturbs the ecology of National Parks and other protected areas. Green activists prove by their inaction to prevent dangerous hot fires, that they are not traditional environmentalists. Their influence needs reducing either by logic or shaming and indirectly blaming them for disastrous but preventable fire outcomes such as in 2020. As Plimer (2021) implied "*Given the majority of these fires were initiated by arsonists or lightening, how can they blame climate change*?"

Former CSIRO fire expert Dr. Phil Cheney pointed to: "***Decades of failure to manage forests, including a failure to implement prescribed burns*** *recommended by the 2009 Bushfire Royal Commission*." Cheney also slammed **local district council's red (green) tape, which prevents landowners from conducting controlled burns or tree removal on their own properties for their own security**. **In summary, drought and mismanagement of forestry / national parks due to green ideology and bureaucracy was responsible for the severity of the 2020 wild fires.**

Another related environmental issue in Australia is the reluctance of State governments to build new dams or scale up existing water storages, to help secure adequate water resources for our growing urban centers and intensive farming regions when droughts occur. These dams would also act to

minimize irregular flooding events and resultant property damage, if managed properly**. Environmental and climate activists in public services, the BoM and government have for decades prevented Australia from having proper water security**, due to spurious biodiversity, ecological or climate issues.

16.5 Remedial climate measures

Australia urgently needs to re-energize and drought proof our cities and key industrial-agricultural regions, by building more dams, dispatchable power stations, grids, pipelines, and getting more value from desalination plants**.**

Canberra should ignore the globalist pressure from the UN & EU to de-industrialize, then Australia can modernize our aging power base and infrastructure, whilst continuing to supply high-quality resources to the world and conducting R&D on better energy technology. This will create jobs and wealth and so be capable of supporting and defending ourselves plus helping our needy Pacific regional neighbor's.

The real current enemy of mankind is not climate but scientific ignorance, moral weakness and opportunistic carpetbaggers extoling totalitarian ideology dressed up as well-meaning environmentalism, sustainability and post-normal science claptrap.

This undesirable situation is not going to improve unless the government directs the BoM and CSIRO to change its 'modus operanda' in relation to AGW advocacy and corrects the mistakes inherent in its homogenization processes. This can only happen in response to a Royal Commission or similar enquiry into due dililigence of global climate science in general, and its specific applications to meteorology and energy policy in Australia in particular managed by the BoM and CSIRO. However, this will be resisted by political inertia, leftist academia and vested interests in a renewables-led economy.

Alternatively, Australia should cease all government funding for CSIRO and BOM global warming "research" with carbon-centric climate models, and direct the B0M to focus on the more useful business of weather forecasting using more traditional methods.

Currently, we have this ridiculous and totally unjustified and uncosted political charge into the unknown world of unreliable energy, hydrogen power and a non-carbon future brought on by idealistic and power-hungry climate ecowarriors. In this case as in any divisive political situation, it is always pragmatic to follow the money. **The entities who are lobbying hardest for net zero and renewable energy at the expense of cheaper reliable power; are banks, insurances, suppliers of renewable technology and very wealthy entrepreneurs or venture capitalists such as** Simon Holmes à Court, Mike Cannon-Brookes and Turnbull who take advantage of government subsidized schemes. **If they are bent on renewables then logically, they need to invest in much better technology for batteries, grids and perhaps fusion energy**.

In reality, **it's time to stop listening to the spin merchants of the environmental/renewable energy lobby,** and get a proper global perspective before we condemn our people to an uncertain and high-cost power future with related lower economic and lifestyle expectations.

17. Final Comments, Practical Solutions

Scientific evidence has overwhelmingly shown AGW-climate change does not constitute a tangible environmental threat and shouldn't therefore be prioritized for the massive mitigation spend now being undertaken. **The highly beneficial warming over the past 170 years since the LIA, the use of fossil fuels for industrialization plus enhanced atmospheric CO2, have been major wins for world society. The current stultifying climate fear campaign risks ruining this progress.**

17.1 Climate Summary

Climate science as discussed in this personal analysis, has shown from many forms of empirical evidence that **atmospheric CO2 does not and has not driven global warming since the dawn of life on Earth**. **Thus, CO2 is a minor greenhouse gas (GHG) compared to water vapor (WV) in the modern enhanced greenhouse effect, with atmospheric climate being modulated through clouds in the hydrologic cycle**.

Historically, the absorption of Earth's infra-red longwave emissions by greenhouse gases particularly water vapour has supplemented solar radiation, raising the global average surface temperature such that the energy exchange processes are generally in balance. This has resulted in an equable average sea surface temperature of about 15°C. **However, recent increasing CO2 and methane will have a minimal effect in GHG absorption of heat radiation, because their physical capacity to do so now is virtually saturated. So, Equilibrium climate sensitivity - ECS has a low value, and CO2 cannot cause further significant or dangerous warming as advocated by the IPCC.**

Physical evidence suggests that the dominant solar effect on climate works not directly through TSI, but changes in atmospheric circulation, with water vapor (WV) generally moderating natural solar and any CO2 related global warming. Therefore, WV through clouds has overall negative feedbacks to GHG warming, which means that the runaway CAGW hypothesis is rejected by physics, logic and Earth's long-term history.

Solar-generated tropical heat is transferred towards the poles by the ocean thermohaline circulation system and atmospheric wind circulation (see frontispiece), with particularly effect in the northern hemisphere where modern warming has been greatest in higher latitudes mainly during winters. In contrast, Antarctica being cut off by the cold Southern Ocean has been cooling for millennia. According to **Kininmonth (2022) "the oceans are the vital inertial and thermal flywheels of the climate system … if one wants to control climate, it will be necessary to control the oceans,"** thus, **"Efforts to decarbonize in the hope of affecting global temperatures will be in vain."**

Chemically carbon (C) is the basic building block of all hydrocarbon life forms, so current rising CO2 is proving highly beneficial to plant fertilisation and thus food for humanity. During the ice ages CO2 was at a critically low level to sustain life, thus**, the Holocene temperature peak and resultant CO2 rise was**

a boon for human civilization; no competent scientist should ever have vilified CO2 as a dangerous pollutant, this is purely a political ploy by Green activists to further their socialist agenda.

Simply put, current cyclic global warming is natural and benign, it is not a result of modern industrialization, because temperature in the hydrosphere controls CO2 not vice versa, **and human-caused CO2 is a minor (5%?) component of total rising CO2 in the atmosphere. UN climate models based on the AGW political theory are therefore inherently flawed. So, no wonder they have failed to match empirical observational reality over three decades, and cannot be relied upon for predictions or to base energy or environmental policy on,** as alarmists desperately require to further their agendas.

Recent attempts in Australia and the UK to tune new climate models for seasonal forecasts, have also failed to inspire confidence in their data and systems. **Climatologists should go back to using real empirical data and reliable statistical methodology, otherwise the credibility of their science is at further risk. In reality, climate scientists just do not know what the climate will be next month or year**, never mind guessing what could happen 10-50 years ahead based on very expensive but unreliable or poorly tuned models. Models have their uses in research to study physical systems, but results are dependent on the quality of their inputs, so have limited predictive capacity.

Key issues that need to be better quantified are the importance of solar and cosmic irradiation variance, the actual levels of modern ECS variance, the real amount of human generated CO2 as a percentage of natural CO2 variance and levels of CO2 in the pre-industrial atmosphere.

However, what is most important now, is that we are not experiencing any dangerous or unprecedented climate in this modern warming era, with its modest sea rise, a solar induced cyclic rebound from the previous Little Ice Age. Warming creates diversity, a thriving of live, civilization, species migration and adaption, humans are used to this and can afford to use technology to remediate issues.

After 40 years of expensive global research none of the alarmist's dire climate predictions have come remotely true, so their credibility is now waning with the public and the rest of science. Eventually, Governments and the public will recognise common-sense truths about natural climate variation, then this political-academic scam will end, together with the ineffective and costly climate mitigation policies. Hopefully, there will still be a reasonable global society and robust local economies left when they do.

17.2 Current Politics

Possibly the most sophisticated totalitarian autocracy in history, **the Chinese Communist Party, sees what is at stake in the climate game. Its leaders will only start to decarbonize their economy in the 2030's or at all, after the West has virtually committed climate-related economic and political suicide; with their desperate and foolhardy rush away from fossil fuels and nuclear, into 'clean and renewable' but unreliable energy systems. Current 'renewable' energy systems have already been proved not to be a viable or economic replacement for conventional base load power, but politicians are slow to**

recognise this process is causing unwanted social and economic discord.

No 'Developed' country except perhaps Australia was on track to meet its nationally determined contribution to the voluntary Paris-2050 and Glasgow-2030 emissions goals, however our new idealistic government has recently toughened the targets, thereby created more energy mayhem.

Perhaps, Western Nations will come to their collective senses shortly, about the uselessness and obscene costs of their net zero energy polices. They should stop their ongoing de-industrialization self-harm, if only because these policies will have no measurable sociological or economic benefits, nor have any effect on climate. The current Russian - Ukraine + NATO confrontation that is exacerbating the current inflation/cost of living and energy issues globally, may help achieve this realization. So that **fossil fuels and nuclear will likely remain a vital part of the global economy for at least the next 30 years or until better more efficient technologies emerge and take over**.

Basically, most responsible governments want cheap, abundant, reliable, secure and 'clean', energy, how this can be achieved with least cost to the environment and humanity is the problem. Today, if nuclear power isn't an option, 'High Efficiency Low Emissions' (HELE) coal-fired power plants, combined with closed cycle natural gas turbines will provide the required relatively clean on-demand baseload power. **It is poor strategy to support current "clean-green" technologies, then retire or prohibit conventional generation hoping that a technical miracle will occur when we need it. The top-down CO2 mitigation solutions pushed by the IPCC are not working, and are causing more harm and economic chaos than warranted. It should now be axiomatic that, countries which don't have energy security don't have any security at all.**

Currently, as the costs and delusions of climate and environmental policies are finally hitting home with the public, a wave of civil unrest and disobedience is spreading globally. This includes riots in Holland, Sri Lanka, Spain, South Africa and protests elsewhere; governments are being forced to reassess their culpable climate-related policies. Many are reopening nuclear, coal and gas generation projects in order to secure the reliable energy supplies necessary to ensure economic growth, people's comfort and their respective governments' ability to remain in power.

After all, **the 'progressive' inner city wealthy elites who are dictating the climate policy terms, are the ones who will suffer least from them; but they must somehow share the responsibility for the failures and the economic damage their advocacy cause**. These 'would be' leaders of our future socialist green utopia always seem to find reasons why they must, however reluctantly, continue to enjoy the modern benefits, technology and privileges which they demand ordinary folk be denied, this hypocrisy must stop.

17.3 Solutions

It is important for governments to begin to listen to the sceptic 'voice' of reason and evidence in climate science, instead of the ideologically driven AGW alarmist models prevalent in recent decades.

This could happen through reasoned debates about climate issues. But more likely, in response to a Royal Commission or similar enquiry into due diligence of climate science methodology. This would include its applications to meteorology, the dubious homogenization process conducted by the BoM, and model projections used by them, the CSIRO and ARC to fool governments and scare the public.

The UK and Australia now have a timely opportunity to reconsider climate science advice and step back from their socially divisive, unnecessary and under-costed Net Zero agenda. Let's hope they do so intelligently and pragmatically to prevent a lot more financial, physical and mental public suffering.

Sound and ethical governance regarding climate and energy matters requires repealing all Australian legislation based on, and in any way connected with, unfounded climate alarm; because it endorses corruption of science, damages our economy, reduces our national security and hurts ordinary people. In recognising the importance of science and scientists**, effective safeguards must be put in place to ensure scientific freedom, independence and protection from political interference**.

After forty years of climate research, there is still no demonstrable uniquely modern climate problem facing mankind, it's just more of the same type of threats we always had, but more hyped up by the BoM and media. Most of the $billions spent on climate issues globally and in Australia has been wasted on this UN political-environmental nonsense.

Australia needs to learn to be more sceptical of global political ambitions masked by the climate agenda, reject the Paris agreement protocols and the divisive net zero emissions policies. **Instead, we should rely on our own vast mineral resources and technical expertise, build new reliable infrastructure, look to our own interests and create smart solutions to suit our unique conditions and market these to the world**.

We have ample time to recalibrate and spend research money more rationally in new and better energy technologies to improve prosperity in the national and global interest. Australia being an energy source superpower is uniquely placed to help developing nations in our region achieve their modernization, environmental/ecological goals, whilst keeping its economy intact. But it cannot do so if it goes down the zero-emissions path to powerless oblivion, effective national poverty and defense insecurity. A weaker Australia will not be able to defend itself against modern Chinese imperialism, or UN/EU inspired globalism.

As Bob Carter said in 2012 "***Wantonly destroying the energy security that has been Australia's main source of economic strength can only decrease resilience and increase vulnerability to climate hazards***." This is a real crime against our prosperity; therefore**, we need to urgently reinvest in and upgrade our coal and gas generation to stabilize lower cost dispatchable energy to the grid,** or everyone will suffer from the resultant energy poverty as renewables continue to fail as replacement baseload power. **Given Australia's huge uranium resources, we should also consider building modular**

nuclear power plants as strategic assets. Apart from energy security, this will help us build up our dormant nuclear technology for environmentally secure waste storage and also maritime defence.

Improvements in global prosperity, security, the environment and population control can be achieved if we help third world nations out of poverty and generate higher living standards through industrialization and fossil/nuclear/renewable energy use. To do this Western and Asian Developed Nations need to have strong energy-reliable economies, good governance including science and benevolent foreign policies. This can't happen in a poorer Australia under a climate inspired zero emissions economy.

Therefore, Australia should proactively plot its own pragmatic course together with our friendly defense and trading partners who face similar energy problems. **After all China, India and Russia have effectively neutered the Paris agreement and flagrantly use fossil fuel power to drive their way towards economic dominance or at least a measure of independence from the West**.

Finally, I repeat that **empirical science has shown us that there is no obvious impending manmade climate crisis, we should accept this good news, and move on to more important traditional regional environmental and economic energy issues. We still need research to improve our knowledge of how the various natural climate forces work together and where human influence has created issues related to the environment. This will enable us to better predict any real threats, prepare for and adapt to future climate change threats.**

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