

Climate Change: Ebb and Flow of the Tide

Emotional, Agenda-Driven Politics Confronts Sound Science

by Dr. Kelvin Kemm

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The topic of global warming and climate change is far more scientifically complex than the public is led to believe.

Myriads of newspaper, magazine and TV items over decades have tended to simplify the science to the point at which the general public believes that it is all so simple that any fool can see what is happening. Public groups often accuse world leaders and scientists of being fools, if they do not instantly act on simple messages projected by individuals or public groups.



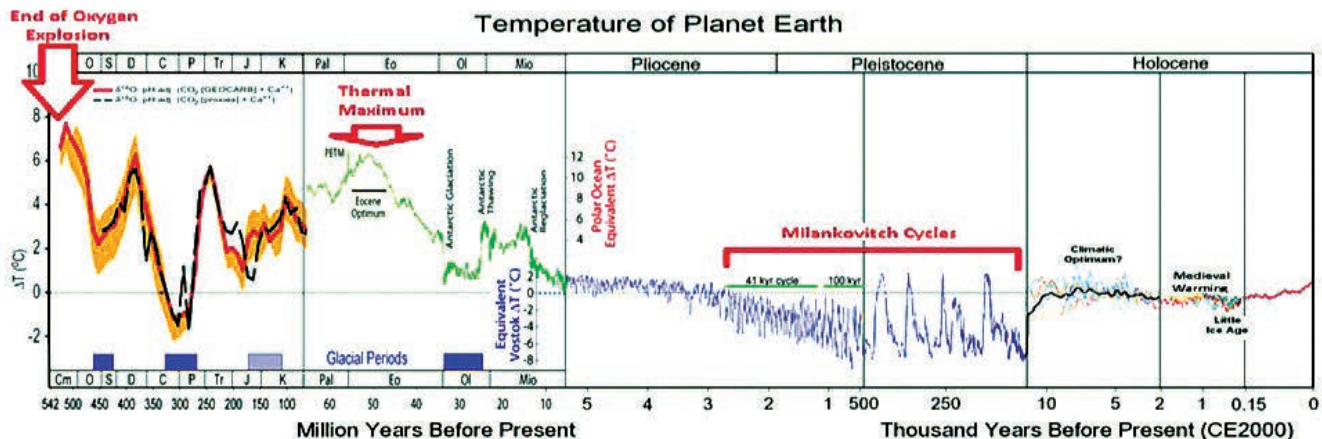
The COP15 UN Framework Convention on Climate Change, Copenhagen, Denmark, December 7, 2009.

One often hears phrases like: “The science is settled.” It is not. Even more worrying is that the reality of the correct science is actually very different than much of the simple public perception.

An additional complicating factor is that there are political groupings wanting to change the world social order and who are using the climate change issue as a vehicle to achieve these objectives. They want the “science” to say what they want it to say, and are not interested in the truth. Sections of the public, with noble good intentions, then frequently do not realize that they are being induced by such elements unwittingly to support a political agenda, which in reality is unrelated to the climate issue.

I found myself in an informal social debate on these topics, with some people getting rather heated. Attempts to cool the conversation temperature were not so successful. The political aspects of the climate change issue, as always, entered into the discussion. Points like: “saving mankind from disaster” were made with much emotion, and UN and various government political

Temperature History of Planet Earth



Wikimedia Commons/Glen Fergus

Global average temperature estimates for the last 540 million years. Note the changes of time scale.

votes on the science were referred to, as if a political vote settled the scientific facts.

Sadly, so much of the climate debate is the result of votes and not of sound science, as determined by scientific methodology and protocol which has been developed over centuries.

From the day when Archimedes ran down the street shouting “Eureka,” scientific method has evolved along strict lines, highly conscious of the fact that bad mistakes can be made if the correct methodology and protocols are not followed.

The heated social debate, which I referred to, jumped and jolted from point to point. One moment it was science, then politics, then economics, all generating a rather random, “Brownian motion” of comment. People with no scientific qualifications of any sort were claiming equal right to a scientific opinion, in competition to the opinions of those of the qualified scientists present.

A result of all this was that a few days later, I wrote a numbered list of points which were touched on during the discussion. The numbered list contained science, politics, and economics points, and I listed them in some logical sequence, to my mind. I e-mailed the list to a number of the people who were present that evening, and also to a number of other people who were interested, and it was well received. So I later enhanced the list, and the expanded list is presented here.

It is not intended to be totally complete, and it does not contain all the scientific references that would have been inserted for a scientific paper. I wanted to make it easy reading. It is also not written as a unified flowing single article, but I believe that it presents a useful guideline to the nature of the current worldwide climate

debates. These debates have huge economic consequences for all people.

Politicians, bankers, and business people have significant power with respect to the national and international outcomes, but tend to be exposed largely to the daily “street science” on the topic. So, we really do need to get the facts and the real science into the various debates, in their correct perspective.

The Wander List: To Lead You Somewhere

1. Global warming and cooling have always taken place throughout the history of the planet. It is nothing new. Our planet has passed through major events like the Ice Ages and subsequent warmings, which we know were caused by astronomical events and by major geological factors, such as periods of great volcanic activity.

However, the planet has also experienced lesser warmings and coolings such as the Minoan Warming, Roman Warming, Medieval Warm Period (MWP) and the Little Ice Age (LIA).

2. All of these warmings and coolings are well documented in the scientific record. There is no argument about that.

3. These warmings and coolings are also documented in the historical record to varying degrees. The Minoan, Roman and MWP are documented. It is also a historical fact that past warm periods in history coincided with periods of health, welfare, and general prosperity, whereas cold periods coincided with crop failure, starvation, and disease.

The LIA is well documented with writings and paintings. There are numbers of paintings preserved of ice fairs on a frozen River Thames during the LIA. The

ice was so thick that paintings show horse-drawn carriages riding down the river. One record even speaks of an elephant walking across the Thames. There is no doubt about this.

4. The MWP and LIA temperatures are known. Not with the accuracy of modern-day electronic means, but well recorded. There is no doubt about the magnitude, up and down, of the MWP and LIA. The clear indications are that the MWP was warmer than today. There is total proof that the LIA was much colder than modern times.

5. Research work carried out in Greenland, near the ancient Norse settlements outside Narsaq, by Yarrow Axford and Everett Lasher of Northwestern University in the United States, found that the temperatures experienced by the Vikings, when they farmed the area—after Erik the Red with a fleet of twelve longboats led a Viking group which settled there in 985 AD—were very similar to the temperatures experienced in Greenland today.

Axford and Lasher were able to construct a climate change pattern over the short period of hundreds of years or less, making it the first study to quantify past temperature change in the so-called Norse Eastern Settlement. The researchers were able to measure oxygen isotopes from a trapped mix of fly species preserved in the sediment layers in lakes. They were able to link the oxygen isotopes to precipitation and to link this to temperature variation over time.

Many ancient Viking farms are well preserved today with walls of 1 m to 1.5 m still standing, so evidence of a thriving community exists. The last written records of Viking settlements in Greenland date from 1408 AD after which the settlements died out, apparently as result of a steep decline in temperature which led to the LIA.

Further evidence from Greenland is that archeobotanist Peter Steen Henriksen of the Danish National Museum in Copenhagen found grains of barley in a Viking rubbish heap. From this evidence Henriksen was able to prove that Vikings were growing grain. The barley was used to make a type of porridge and to brew beer, indicating a stable self-sufficient farming community.

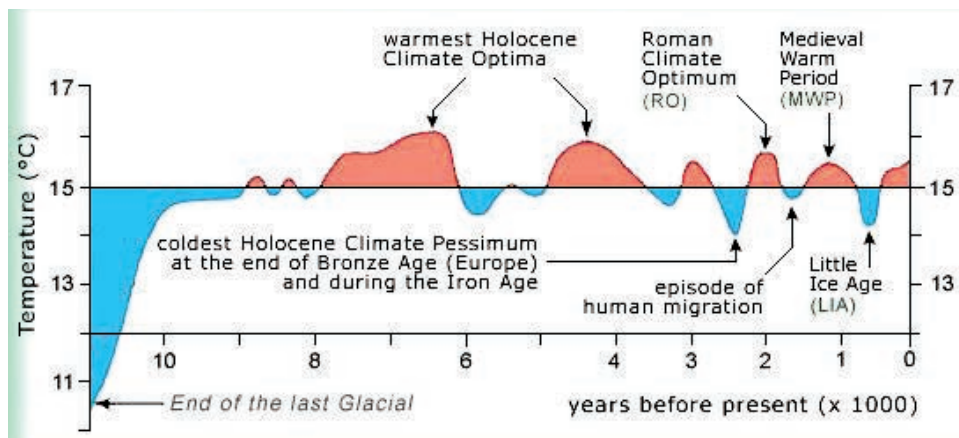


During the Little Ice Age (roughly 1450-1850), even major rivers such as the Thames were often frozen solid. Social life on the ice in Europe was captured in paintings by Hendrick Avercamp, such as in this detail from one circa 1615, “A Scene on the Ice Near a Town.”

6. The MWP and LIA were global. There is no logic to some claims that only Europe warmed during the MWP. What conceivable scientific mechanism could explain a localized warming which existed only over Europe for some hundreds of years?

A research team led by George Brook examined a large ancient cave, the Wonderwerk Cave in South Africa which is 140 meters in extent. Examining stalactite formation, using oxygen isotopes, they were able to determine past temperatures which showed not only the

Average Near-surface Temperatures of the Northern Hemisphere During the Past 11,000 Years



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MWP but also the Roman Warming and the Minoan Warming periods. The LIA was also evident. This cave is in a dry area near the town of Kuruman and contains centuries of undisturbed historical and geological evidence. (G. Brook, et al., *African Archaeological Review* Vol. 32, No. 4, December 2015, pp. 669-700.)

Another research team, led by Sharon Nicholson, studied temperatures for the past 2,000 years over a large area of Southern Africa, including Lake Tanganyika in Central Africa, the Ethiopian Highlands, the large Cango Caves system in South Africa, and also found evidence of the MWP and the LIA over these regions. (Nicholson, et al., *The Holocene*, Vol. 23, No. 8, April 2013, pp. 1085-1094.)

7. All these warmings and coolings took place without any contribution from industrially produced CO₂, or man-induced anything. So, what caused them?

8. There is some global warming that has happened over the last 150 years. Some people like to say: “Since the start of the Industrial Age.” However, there is no reason to believe that the cause of the current warming is any different from the cause for the MWP and other previous warmings in the historical record.

9. It is interesting that so frequently the phrase, “since the industrial age” is used when referring to global warming. That is the same time that Alexander II became Tsar of Russia and when Abraham Lincoln became President of the United States. That was also the time of the Crimean War and the U.S. Civil War, which is also the time that Charles Darwin published his famous book *On the Origin of Species*. So why reference the industrial age, why not rather say, “since the time of Tsar Alexander II”? Clearly, “industrial age” is intended to imply cause and blame, directed at industry.

10. Science proposals are either right or wrong. They are not the result of a popular vote, or consensus, as so eloquently articulated by Dr. Michael Crichton, the author of great novels and movies such as *Jurassic Park*, which were acclaimed for their degree of scientific accuracy.

Note that Crichton was a qualified medical doctor who carried out research work at the Salk Institute for Biological Studies and was also a visiting lecturer in anthropology at Cambridge University. So, he knew about science and science accuracy. All his famous novels are characterized by a foundation of sound scientific research, and a factual basis.

He wrote an excellent novel on the climate change scare, called *State of Fear*. The novel even contains genuine scientific references. As a result of his ability to

explain science to the public, Crichton was invited to give evidence on the climate change issue to a Senate hearing in Washington, D.C. But there he was insulted by former Senators Hillary Clinton and Barbara Boxer. Hillary Clinton said that he should not “muddy the issues around sound science” (*The New York Times*, Sept. 28, 2005) and Barbara Boxer said, “I think that we have to focus on facts, not fiction.”

This pattern has been seen internationally—when serious scientists challenge popular dogma on anthropogenic climate change, then character assassination and derision frequently follows. This in itself is a sign that the scientist has a valid point, and some say that insult at such a point is actually a compliment, because it means that that is all that the attacker has left.

Michael Crichton wrote:

In science, consensus is irrelevant. What is relevant is reproducible results. The greatest scientists in history are great precisely because they broke with the consensus. There is no such thing as consensus science. If it's consensus, it isn't science. If it's science, it isn't consensus. Period.

Incorrect “popular consensus” was directed against such people as Galileo, Darwin, and Einstein.

Speeches by Dr. Crichton [here](#) and [here](#) are illuminating.

[Here](#) are some of the comments on Crichton's speech.

Greenhouse Warming Does Exist

11. There is an effect called “greenhouse warming.” The name comes from a greenhouse, the interior of which is warmer than the surroundings. However, a greenhouse is mainly warmer than the surroundings because it is sealed up, and minimal air circulation passes through it. The “heat trapping” effect, due to altered infrared frequencies upon re-radiation, is actually minimal.

12. A greenhouse effect does occur in the Earth's atmosphere and has always been present. If it were not for this effect, the Earth would have remained so cold that life probably would not have evolved. The first person to realize that the atmosphere of the Earth probably acted as an insulator, was French physicist and mathematician Jean-Baptiste Fourier, when he mathematically showed that by his theory of heat transfer, the Earth should be far colder than it was, unless something like the atmosphere was acting as an insulator. Fourier had published a book in 1822 on his mathematical

theory of heat transfer, which was controversial at the time.

Then a century and a half ago, physicist John Tyndall (c. 1822-1893) proved that heat is absorbed by water vapor and carbon dioxide. He realized that the actual molecular structure of gases was the major factor in the heat absorption effects. It was not just a case of the more gas, the more heat trapping.

He made particular mention of the overwhelming heat absorption characteristics of water vapor. He also mentioned that this heat absorption could influence climatic effects, although the first person to publish the base concept that atmospheric CO₂ could influence ground temperature, was Swedish scientist Svante Arrhenius in 1896.

13. The case of whether an enhanced greenhouse effect is manifesting itself now, leading to global warming, is a totally different matter.

14. Carbon dioxide does have a heat-trapping effect, due to the altered frequencies of the re-radiated infrared (IR), as required by the laws of physics. Physics states that when IR strikes the ground or anything else, some of it will be re-radiated back, but that the radiation emitted from the warmed-up object has to be at a different wavelength [than the incoming IR —ed.]. Certain wavelengths will pass through certain frequency “windows” in the atmosphere and not through others. So, some IR frequencies being re-radiated upwards will get out back to space, and some don’t.

Atmospheric transparency to IR is extremely well understood in physics, mainly due to the military development of heat seeking missiles and military IR detection.

The IR “windows” in the atmosphere are well known. Exactly how CO₂ interacts with IR is also very well understood, due to the study and development of devices such as carbon dioxide lasers. The heat-trapping mechanism of CO₂ at the molecular level is far more complex than simple public interest articles lead the public to believe.

15. Also extremely well known, are the light and IR reflecting properties of clouds, both from the top down and the bottom up.

Here in the Pretoria and Johannesburg area of South Africa, where I live, there is generally no rain and no cloud cover throughout the Winter. This is due to the high inland plateau on which both cities are situated. The plateau is known as the Highveld. Because of the great altitude of both cities, the diurnal temperature range in the Winter is great. Temperature can be over

20°C [68°F] max on a Winter’s day, but then drop to 0°C [32°F] at night.

However, on the few Winter occasions when cloudiness does occur at night, the minimum temperature reached is dramatically higher, by half a dozen degrees. It is common public knowledge that cloudiness at night in Winter results in a warm night and a warm breakfast time. It is common public knowledge that Winter night cloud-cover “keeps the heat in.”

16. Although the physics of light and IR interaction with clouds is well understood, the cloud effects are not at all well accommodated in climate computer models. The reason for this is the dynamic nature of cloud cover. It is difficult to accurately project the amount of cloud cover, cloud density and height, and also factors like what terrain is underneath clouds, such as water, flat dry land, mountains, wet jungle, and so on.

The nature of the terrain will determine how much IR is reflected and absorbed. At any moment a substantial proportion of the Earth is covered by cloud, so even small variations in cloud screening will make a substantial difference to ground and atmospheric heating.

17. One frequently hears in the popular media of computer models predicting the state of the global climate a century into the future. But what is not brought to public attention is that the computer models are extremely complex and predict outcomes based solely on what information the researchers choose to put into the model. It is well known that minor variations in the input data can produce dramatic differences in the output scenario. Slight differences in cloud data fed in can completely change the resulting predictions.

It is also on the basis of such computer predictions that the now well-known prediction that a 2°C rise in temperature, above the atmospheric temperature that existed at the time of Tsar Alexander II, may be reached by the year 2100. Further computer predictions then project that this 2°C rise may then induce some computer-predicted “tipping point,” past which there will then be some runaway rapid temperature rise leading to disaster. This potential 2°C rise has come to be regarded by some groups as a highly accurate and reliable figure. It is not.

18. Another fact which is well known, is that “global warming” and “climate change” issues are highly politicized. Therefore, the general public debate does not take place between scientists qualified in the field, but largely between people who just voice an opinion.

19. A clear indication of this trend is a Swedish schoolgirl who gathers crowds of marching, chanting

schoolchildren to demonstrate in the streets. How many of these children have any idea what a water vapor or carbon dioxide molecule looks like, or for that matter what a molecule is? Or, how a molecule absorbs heat?

What is even more astounding is that the schoolgirl is invited to address national assemblies and even the UN. Imagine a schoolgirl being invited to address the UN on international trade or disarmament. One then has to ask the question: What is the psychology driving the UN and other august bodies who will listen, enraptured, to a schoolgirl lecture them, with rather firm tone of voice, on a complex scientific topic? The phenomenon is most strange.

Every man is a creature of the age in which he lives, and few are able to raise themselves above the ideas of the time. —Voltaire

What about Enhanced Greenhouse Effect?

20. It has been claimed by numbers of groups of people that an enhanced greenhouse effect is taking place, due to man-induced CO₂ production, leading to Anthropogenic Global Warming (AGW). The real evidence for this is suspect and circumstantial.

21. What is generally meant by “man-induced” or “anthropogenic” CO₂, by those opposing CO₂ production, is the CO₂ that is produced by modern industry. What is particularly targeted is the CO₂ produced by fossil fuels used to produce electricity. What are overlooked are the millions of low-income human beings who are daily cooking and heating using wood, dung, and charcoal fires, which produce considerable pollution and CO₂.

22. The modern Swedish schoolgirl phenomenon is a direct descendant of this sentiment, that only modern mankind is to blame. One can see in many groups, such as the radical movement Extinction Rebellion, that they



UN/Ariana Lindquist

Greta Thunberg (seated at right and on screen) denounces the world at the UN Climate Action Summit in New York City in 2019.

carry posters demanding political reorientation. The concept of an “environmental crisis” is a powerful platform for other political objectives.

It is therefore not surprising that many people do not want to establish the scientific truth about climate change, CO₂, methane, or any of the factors in the climate debate. They don’t want to find a solution, because a solution would destroy their political platform for demanding their political objectives for a reorganized world order.

23. What is scientifically accurate, is that there has been a planetary temperature rise of less than 1°C since the Crimean War and U.S. Civil War. That has been measured to be a figure something like 0.8°C. Today, temperatures are measured on the ground, using highly accurate electronic thermometers accurate to a few decimal places.

Temperatures are also measured from satellites, with a great degree of accuracy. But what was the level of sophistication of temperature measurement at the time of the Crimean War? The really accurate thermometers at that time were mercury-in-glass handheld thermometers. Any accuracy of measurement, better than one degree, depended very



CC/Charles Edward

Sunrise Movement rallies for a Green New Deal, Chicago, Illinois, February 27, 2019.



CC Jörg Farys / WWF

The concept of an “environmental crisis” is a powerful platform for other political objectives. Here, a Fridays for Future demo in Germany in 2019.

much on the skill and experience of the person holding the thermometer.

24. At the time there were some very skilled physicists and meteorologists who could reliably measure temperature to about a quarter of a degree, but there were not very many of them. Also, there were no automatic temperature measuring devices, which could be left far out in the countryside to measure daily temperatures for months, to produce a continuous representative record of a region.

Furthermore, temperatures would have been measured where the person happened to be, or where the person was prepared to travel to, which would most probably have been near buildings or in a town. So, one must wonder just how representative those Crimean War-era temperature records are, when wanting to compare them to modern electronic measurements of large areas. So, how confident are we, really, that the reported 0.8°C rise since Darwin published his ground-breaking book, is accurate? If that figure is being fed into highly complex modern computer models, how confident are we about the computer output scenarios?

Even with the accurate modern ground-based thermometers, there are potential problems related to the heat-island effect. Many temperature measuring sites have not been moved in decades, during which time buildings, roads, or other activities have developed

around them, which have increased the localized temperatures which have been reported. This is known as the heat-island effect.

25. In 1992 the great Rio Earth Summit took place, to much fanfare. It was officially named the United Nations Conference on Environment and Development (UNCED) and was the greatest gathering of world leaders seen in the history of the planet. It was not possible to get so many world leaders together for disarmament or world trade, but it was possible to gather them for the environment and to “save the Planet.” An impressive 172 nations were represented, with 108 heads of state arriving.

Also in attendance were nearly 10,000 journalists and, interestingly, 2,400 NGOs were represented. An additional 17,000 NGO representatives attended a parallel NGO forum that provided “recommendations” to the Earth Summit. On June 4, 1992, journalist Paul Brown reported from Rio, in *The Guardian*, that during the opening ceremony of the day before, the conference Secretary-General, Maurice Strong, had said:

One part of the world cannot live in an orgy of unrestrained consumption where the rest destroys its environment just to survive. No one is immune from the effects of the other.



UN/Michos Tzovaras

The UN Conference on Environment and Development, Rio de Janeiro, Brazil, 1992—the greatest gathering of world leaders in history, not for disarmament or world trade, but to “save the planet” from mankind.

Strong added that rich countries must provide more money to the developing world and cancel Third World debt. Over years, Strong has also been frequently quoted for his sentiment:

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?

26. So all this shows clearly that the Rio Summit, along with many subsequent offshoot meetings, did not only have the environment as a concern—but also had the objective of rearranging structures of world power and finances.

Reliable, Affordable Energy: Foundation of Civilization

27. A major fundamental in world political and industrial power is energy. There is a well-known graph in economics which shows that the GDP and economic prosperity of a country is directly proportional to its energy consumption. Thus, one can see that the Green political objective to control CO₂

emissions means controlling economic growth. More economic growth means more industrial output and therefore more CO₂. So clearly, from a Green political perspective, it is good to limit energy supply.

28. A way to control and limit energy supply is to advocate solar and wind power, and to go even further and advocate a system of every household having solar panels on their roof, so that “everybody contributes collectively.” This also has the effect of aiming to remove large central power stations where big power resides—big power electrically speaking, and big power politically speaking.

The sentiment also explains why there are many groups who advocate moving away from fossil fuels and adopting “clean energy” like solar and wind, but who so frequently are also opposed to nuclear power, which emits no CO₂. Nuclear power represents centers of large, centralized power which they don't want.

However, large nuclear power stations can be sited anywhere where there is adequate water cooling, whereas economic reality dictates that large wind and solar generating points have to be sited where the wind and solar conditions are ideal. These wind and solar sites can be far from where the consumers are, particularly in large African countries. So, the dream of decentralized citizen-controlled wind and solar power production is not as easy as that may at first seem.

29. A very influential philosopher of the 20th Century was the German, Martin Heidegger. One of his intellectual

positions was that he condemned the view of nature being considered as a mere resource for human exploitation. He described this position in his 1954 essay “The Question Concerning Technology.” In this essay he wrote:



Courtesy of Earth Negotiations Bulletin

*“Isn't the only hope for the planet that the industrialized civilizations collapse, and isn't it our responsibility to bring that about?”
—Maurice Strong, former UN Under-Secretary General, member of the Queen's Privy Council for Canada, and a millionaire a hundred times over.*

Modern technology puts to nature the unreasonable demand that it supply energy which can be extracted and stored as such. . . . Air is now set upon to yield nitrogen, the earth to yield ore, ore to yield uranium . . . to yield atomic energy.

Heidegger then argued that the solution was to link human society to unreliable energy flows, and he praised windmills because they “do not unlock energy in order to store it.”

In a 1962 book, *Our Synthetic Environment*, author Murray Bookchin agreed with Heidegger and said that the goal of renewables was to turn modern industrial societies back into agrarian ones. He said that his view

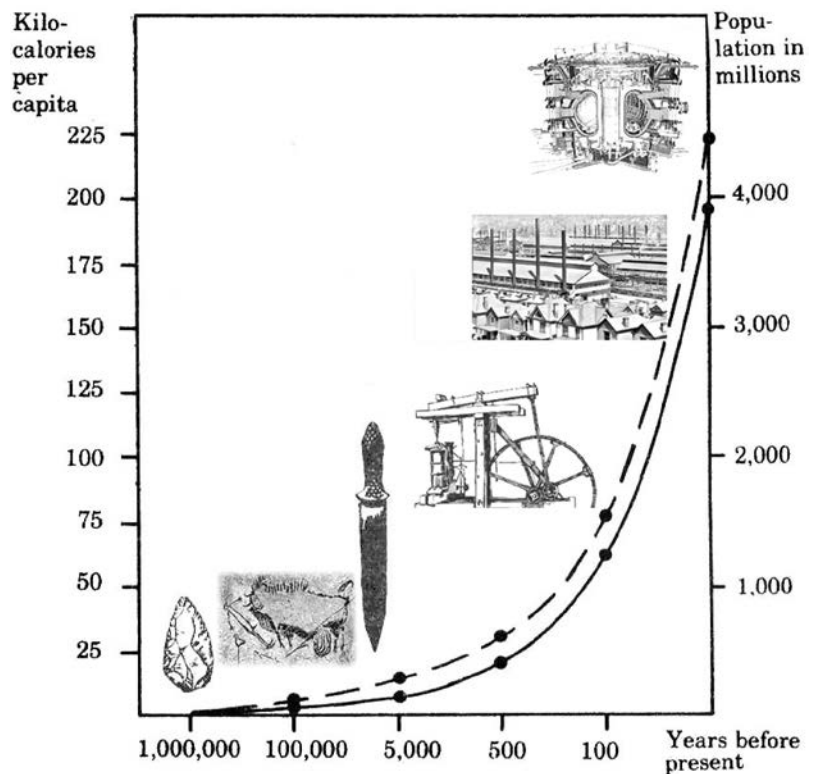
conjures up an image of cultural isolation and social stagnation, of a journey backward in history to the agrarian societies of the medieval and ancient worlds.

One can see how the Heidegger sentiment has some charm, and projects a quiet simple life, rather than a hectic, complex, modern one. One can also see how others can advocate this lifestyle. But they omit to mention what happens when your child desperately needs antibiotics, or emergency surgery, or when your crops fail and there is no mechanism for the importation of food.

If people want to live this way, they are welcome to do so, but is it reasonable for them to try to force everyone else to do it, too? Why should millions of Africans be denied advanced medical care, education, and modern technology, because some moralistic first world people feel that it is better for Africans to live “in harmony with nature” and not to have a reliable, high-power electricity supply?

Carbon Dioxide: Humps and Dips

30. Concentrations of CO₂ in the atmosphere have always varied since life started to appear on the planet. A high of 4,000 ppm (parts per million) was detected in the Cambrian period of 500 million years ago, compared to a low of 180 ppm during the Quaternary Glaciation of the last two million years.



Increases in energy consumption per capita (solid line) are closely related to increases in population size (dashed line). One kilocalorie is 1.162 watt-hours. And, increases in energy consumption reflect advances in technology. The technologies (from left): flint tools, cave painting, metallurgy, the Watt steam engine, the industrial factory and factory town, and the fusion tokamak—yet to come. (Graph ends c. 1983.)

At the time of the presidency of Abraham Lincoln, the Earth’s atmospheric concentration of CO₂ was about 280 ppm and in January 2020 it measured at just over 400 ppm. In modern times, of course, CO₂ concentrations in air can be measured with great scientific accuracy. For the bygone periods a method used is to examine the bubbles of air that have been trapped in Arctic and Antarctic ice.

They are excellent “time capsules” which can be dated far back in time. In fact, the trapped bubbles give rather accurate results, so scientists have been able to show that atmospheric CO₂ concentrations rose by about 12 ppm, or about 4%, during the lifetime of Queen Victoria.

So, there is no scientific dispute that atmospheric CO₂ concentrations have gone up and down dramatically during Earth’s history. There is also no scientific dispute that since the Crimean War, atmospheric CO₂ concentration has increased from about 280 ppm to about 400 ppm.

31. There is some scientific evidence that although

the trapped ice bubbles give very accurate readings, they may have trapped less CO₂ than was actually present in the past. But for now, we will put that consideration aside. If it turns out to be true, it will mean that the case for CO₂-induced AGW is weaker, so putting the consideration aside for now will not affect the thrust of this argument.

32. Over the last 200 years, the CO₂ concentration has continued to rise steadily, although not on a smooth curve.

33. The scientifically observed global warming which has been measured since the time of Lincoln is attributed by some to the observed rise in atmospheric CO₂ concentration. However, the claimed correlation (not causality) is not at all good.

At times, during the past two centuries, when CO₂ concentration continued to rise, temperature did not.

34. Another interesting observation, which is regularly overlooked, is that there are clear indications that atmospheric temperature increase precedes CO₂ concentration, and not the other way around. An interesting link to this observation is that there is a huge amount of CO₂ which is dissolved into the oceans. Another factor ignored or glossed over, is the time delay. The oceans are so large that heating or cooling and CO₂ release take a very long time, as much as a century.

Anybody who has used a home carbonation device to make fizzy cool drinks, knows that you always use cold water, the colder the better, because cold water absorbs much more CO₂ than does warmer water. So, if even a shallow depth of the oceans warms by a small amount, huge amounts of CO₂ would be expected to be released. So, CO₂ atmospheric concentration lagging behind temperature change strikes one as extremely logical. So why is this fact so skillfully ignored by the proponents of anthropogenic global warming?

35. The United Nations Intergovernmental Panel on Climate Change (IPCC) was set up by the UN in 1988. Many such initiatives are set up in a well-meaning fashion with people's hearts in the right place. No doubt the IPCC was set up in this manner. The actual task of the IPCC, as defined by the United Nations Framework Convention on Climate Change (UNFCCC), originally limited their scope to examining human causes only.

It stated:

A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which

is, in addition, to natural climate variability observed over considerable time periods.

This definition was used during the first three IPCC reports, those of 1990, 1995 and 2001. The definition is fine; it states: "over considerable time periods" and it specifies human activity "in addition" to natural causes. But then in the 2007 report, the definition was altered in a rather dishonest manner. It was done, very quietly and unobtrusively in a footnote, in the Summary for Policy Makers (SPM). The footnote states:

Climate change in IPCC usage refers to any change in climate over time, whether due to natural variability or as a result of human activity. This usage differs from that in the United Nations Framework Convention on Climate Change, where climate change refers to a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere, and that is in addition to natural climate variability, observed over comparable time periods.

The IPCC as a Political Body

So, now we are in a position in which we have to view the IPCC as a *political* body which chooses what it will tell the world, rather than viewing it as being a *scientific* body which reports scientific results for other scientists to interpret in a professional manner. (See the book: *The Deliberate Corruption of Climate Science*, by Dr. Tim Ball.)

36. The IPCC brings out large scientific reports every few years. But a few days before the scientific reports are released, a summary is released for the media, and for easy reading for governments around the world. These summaries are called the Assessment Reports (AR). The first few reports were called the Summary for Policy Makers (SPM). Unfortunately, the media and governments mostly do not look at the actual large, detailed scientific reports; they only look at what the AR claims that the scientific report says.

The AR is put together by government representatives who debate and then vote on what goes into the AR. Assessment Report 1 in 1990 based its entire claim for Anthropogenic Global Warming (AGW) on the fact that both CO₂ concentration and surface temperature increased during the 20th Century, even though they did not follow the same curve.

The AR assigned the significant warming of 1910-

1940 to human activity, but did not explain why during the post-War, post-1945 boom in consumer industrialization, there was minimal warming. It also does not explain why for a period in the 1970s there was actually a world fear of global-cooling, while during all of that time the CO₂ continued to increase.

37. In the translation from the original IPCC science reports to the summaries for the media and governments, there were instances of what can only be interpreted as intentional changes of meaning. For example, in the 1995 science report, it stated:

While some of the pattern-base discussed here have claimed detection of a significant climate change, no study to date has positively attributed all or part of climate change observed to man-made causes.

But then in the Summary for Policy Makers, the lead author of Chapter 8, Mr. Benjamin Santer, rewrote this statement as:

The body of statistical evidence in Chapter 8, when examined in the context of our physical understanding of the climate system, now points to a discernible human influence on the global climate.

Predictably the phrase, “discernible human influence,” became major media headline material, yet this sentiment did not even appear in the original scientific report.

38. At this point it is important to pause to consider the difference between the terms: “correlation” and “causality.” These two terms are very frequently confused by people not trained in the sciences. “Correlation” is when two or more different variables move in sync with one another, or when drawn graphically they appear to have the same or similar pattern. “Causality” is when one can show definitely that one action causes another.

If you happen to notice fruit delivery records from a farming area, and you see that five times more fruit is regularly delivered to City A than to City B, it is tempting to conclude that the people in City A eat much more fruit than do those in City B. This is a “correlation” situation, which shows that one city seems to be absorbing five times more fruit than the other, on a regular basis.

But then you take a closer look and discover that

City A is a port city and that most of the fruit delivered there is exported, and in fact the people living there eat exactly the same amount of fruit, per person, as in City B. It all too frequently happens that people look at graphs or at records and conclude some result, or they conclude that one action causes another, when in fact it does not. So, establishing real causality is very important.

39. Assessment Report 3 of 2001 uses the infamous “hockey stick” graph [showing steady world temperatures until the mid-20th century, when a sharp increase occurred —ed.] to “prove” that human-induced global warming is happening and that it was actually far worse than imagined. AR3 claimed to be at least 66% certain that greenhouse gas emissions were responsible for 20th-Century warming. But then Canadian scientific investigators Steven McIntyre and Ross McKittrick showed that the “hockey stick” was not only incorrect, but actually intentionally fraudulent.

After an embarrassing public exposure concerning the inaccuracy of the “hockey stick” graph, the IPCC stealthily distanced themselves from it, but this action never received anywhere near the publicity that the original false “hockey stick” claim received.

In 2007 Assessment Report 4 claimed that the climate computer models showed that a doubling of CO₂ concentration would lead to a temperature rise of 2.0-4.5°C, and that the IPCC was 90% certain of this. Half a dozen years later in 2013, Assessment Report 5 widened the uncertainty to a span of 1.5-4.5°C but then claimed 95% certainty. In other words: more certainty on a less certain prediction. Interesting move!

Interestingly both AR4 and AR5 ignored the fact that essentially no surface warming had been detected during the 21st Century. They also ignored the absence of any significant warming in the troposphere, or the ocean record during the critical preceding 1979 to 1997 period, which many computer models had so confidently predicted, as necessary to prove anthropogenic global warming (AGW).

The ‘Pause Century’

40. *There has been essentially no global warming during the 21st Century.* This reality has been called “The Pause” by some, who claim that the real rise in temperature is actually going on, but that for some unexplained reason, has paused for a while.

There is debate about the “Pause,” with some saying that there were gaps in data, the variations are too small

to be statistically significant, etc. If this is so, how come climate change enthusiasts have been so utterly certain of their position and their figures for the past 20 years plus?

See the [article](#) by David Whitehouse in *The Spectator*, June 28, 2017.

41. Initially, “global warming” was the only public phrase used. Then when “warming” predictions did not occur, the term “climate change” was introduced. So, the late 2017 freezing conditions on the U.S. East Coast were attributed by many groups to “global warming,” because they pointed out that the “warming” was really causing the cold “climate change.” (Note all the Al Gore global warming jokes and cartoons which started to appear in magazines, as cartoonists and journalists started to absorb the irony.)

As a physicist I know that changed thermal balances in the atmosphere can lead to altered winds, etc., which can lead to cooling, etc. So, there is some scientific basis to arguments that temperatures can go up and down. But frozen airports and other extreme weather is not climate change. It is ordinary extreme weather. Many years ago, author Mark Twain, whose real name was Samuel Langhorne Clemens (1835-1910), said: “Climate is what you expect but weather is what you get.”

42. The concept of “extreme weather” was also introduced by Green extremists to add to the public fear factor. In fact, weather records (worldwide) show no evidence of any weather today that is different from the past couple of hundred years or more. The period over the last century of the highest incidence of hurricanes striking the U.S. coast was the 1940s. Large hurricanes striking the U.S. coast over the last few years were not unusual, but by bad luck a couple of them happened to strike particularly highly populated areas, resulting in dramatic TV footage.

From 1876 to 1879 a terrible drought struck China, resulting in their worst famine ever, which killed over 10 million people. If that happened today it would be

blamed on industrial CO₂.

43. You cannot measure the “severity” of a weather event by the magnitude of the insurance claim. Insurance claims have been used by Greenpeace, et al., to try to “prove” that unusual extreme weather is leading to greater devastation than before.

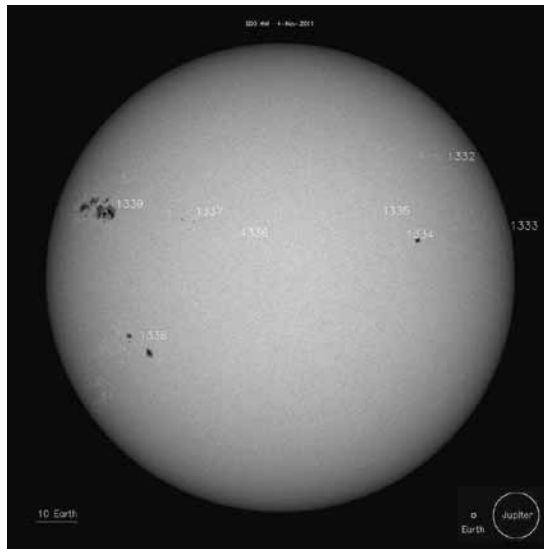
44. It is scientifically well-known that the Sun varies in intensity and in magnetic activity. This variation takes place on a Solar Cycle which is linked to the incidence of sunspots. Sunspots have been regularly scientifically recorded since 1760. But they were observed regularly well before 1760 as well.

45. Sunspots were first formally observed through a telescope by Galileo and Thomas Harriot in December 1610. A year later in March 1611, Johannes Fabricius, a medical student in Leiden in the Netherlands, discovered them independently and then some months later became the first to publish a scientific paper about them. This showed scientifically for the first time that there was variable activity on the Sun, because the sunspots moved.

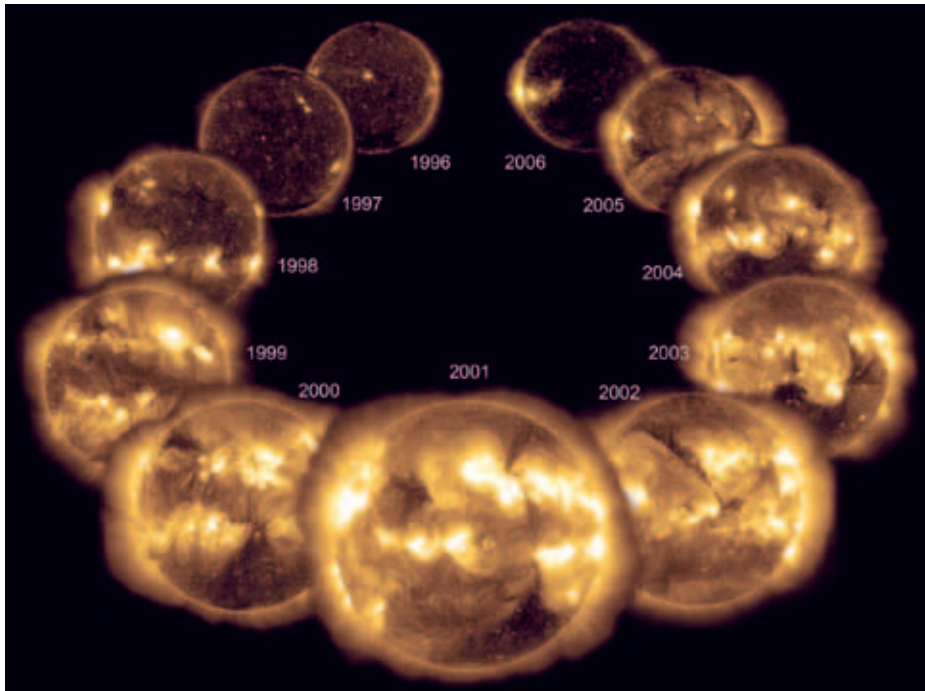
As time passed, astronomers discovered that the sunspots exhibited a cycle; and then in 1843 astronomer S.H. Schwabe was the first to describe the 11-year sunspot cycle that we know of today.

However, in ancient China, back in the 12th Century BC, observers mentioned black spots on the Sun, while the first written record of them in China occurred in 28 BC; but even the ancient Aztecs in South America had referred to them as well. So, solar magnetic activity has existed forever. From modern observatories and space probes, we now know that solar activity is extremely violent.

46. There is other scientific evidence of long-term solar radiation and magnetic variation around the planet, such as in geological structures and botanical evidence. The well-known Northern Lights (*Aurora borealis*) over the North Pole, and the Southern Lights (*Aurora australis*) over the South Pole, occur as a result of electromagnetic particles ejected from the Sun.



An image of sunspots captured on November 4, 2011 by the space-based Solar and Heliospheric Observatory (SOHO).



NASA/ESA/SOHO/Steele Hill

The Sun brightens and dims slightly over a solar cycle, but the resulting heating and cooling of Earth is insufficient to account for observed global warming and cooling. Shown: X-ray images of the Sun over one solar cycle.

47. Variations in the activity of the Sun produce a number of effects on Earth, but we will here consider two of them. Heating, as a result of light and infrared radiation (IR); and magnetic field variations.

48. The Sun brightens and dims slightly over a solar cycle. The resulting variation in heating and cooling of the Earth is not sufficient to account for the observed global warming (of about 0.8°C since the time of the Crimean War). Some people like to discount the effect of the Sun out of hand, due to this fact that the heat and light variation [of the Sun—ed.] cannot account for temperature variations on the Earth.

49. It has been known for decades that vast amounts of charged particles and nuclear particles stream out from the Sun. This is known as the solar wind, and it travels far past the Earth. The Earth is permanently bathed in this massive solar wind. It is well known that the solar wind affects radio communications on Earth and is known to be a potential danger to astronauts in space, if some large, unexpected particle ejection takes place. It is also well known that the solar wind varies.

When electrically charged particles interact with magnetic fields, this action induces complex changes in the magnetic field which alters its strength; and deflects the particles.

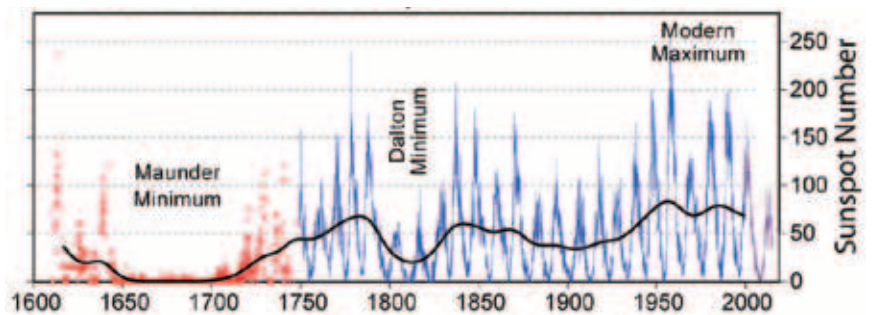
50. The variation of the Sun's magnetic field and the resulting variation of the Earth's magnetic field, due to the interaction of the two, is significant. Mounting evidence is indicating that this appears to be sufficient to cause the observed global warming.

51. The total amount of sunspot activity is known to vary over the 11-year solar cycle. It is also known that the number of sunspots is an indicator of total magnetic activity. Sunspots are actually giant magnetic storms on the Sun. So now knowing sunspot records to

varying degrees of detail way back thousands of years, it is possible to generate records of solar magnetic influence on the Earth, over a long period of time.

What we discover, is that the variations in the solar magnetic activity match up rather accurately with the observed temperature variation on the Earth. They clearly match up with the Medieval Warm Period (MWP) and the Little Ice Age (LIA). There are also matches with the Roman Warming and the Minoan Warming periods. In fact, the temperature of the Earth for the past few centuries matches the solar magnetic activity graph far better than does the CO₂ concentration graph. Such scientific evidence should cause scientists

400 Years of Sunspot Observations



CC/Robert A. Rohde

and scientifically interested lay people to take serious note of this match with solar magnetic activity.

52. Continuing on from the scientific consideration of No. 49: See the work of Danish scientist Henrik Svensmark on this matter. See also his [book](#), *The Chilling Stars: A New Theory of Climate Change*.

Svensmark (and others) have shown that the variation of the penetration of cosmic rays (as in charged particles) through the Earth's atmosphere is directly linked to the strength of the magnetic shield around the Earth. The Earth's shield is linked to solar activity. Solar activity is indicated by sunspot number.

A [paper](#) by Guoyong Wen, et al., "Climate Responses to SATIRE and SIM-based Spectral Solar Forcing in a 3D Atmosphere-Ocean Coupled GCM," for example, explores the difference of climate response between the two solar forcing scenarios.

53. Svensmark has shown that cloud cover is linked to the incidence of cosmic rays coming from deep outer space. This is standard physics. *Nucleation points* in the atmosphere give rise to vapor condensation, such as the vapor trails seen behind high-flying aircraft. The aircraft engines emit charged particles and bits of pollution, such as soot, which act as the nucleation points.

Cosmic rays coming in through the atmosphere also create nucleation points in the atmosphere in a similar way. They also give rise to clouds.

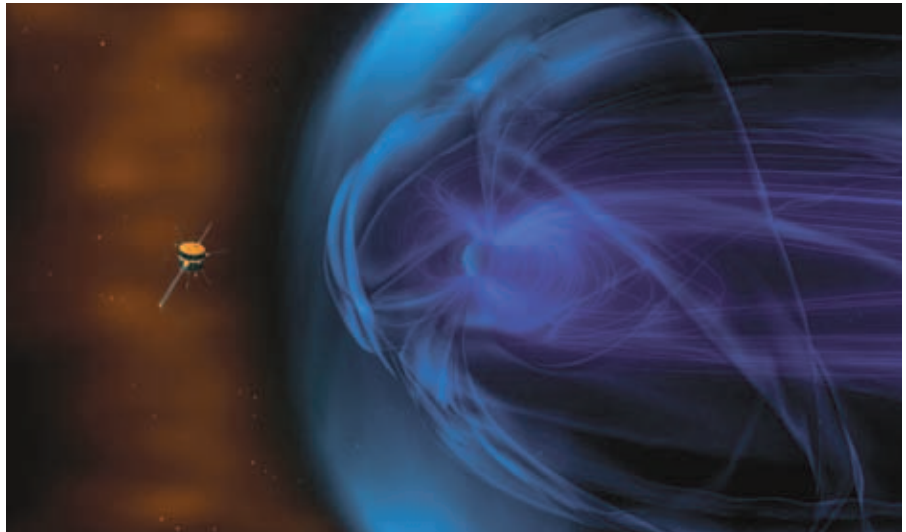
54. There is a correlation between the MWP, LIA, and the modern warming, which link to the solar activity far better than these temperature variations correlate to any concentration of atmospheric CO₂.

There is therefore no logical scientific explanation to imagine that atmospheric CO₂ is any more of a factor in observed global warming than is the Earth's magnetic field variation induced by the Sun.

Yes, Look at the Sun

55. So why do the human-induced global warming proponents dismiss the Sun's influence out of hand? Is this scientific?

56. There have been well-known manipulations in so-called "evidence" for CO₂ being the cause of global



NASA

Mounting evidence indicates that variations in the Sun's magnetic field, and the resulting variations in Earth's magnetic field, are the cause of the observed global warming and cooling. Shown: an artist's visualization of NASA's Wind spacecraft in the solar wind near its impact on Earth's magnetic field, the magnetosphere, shown in blue. Note the Earth, the small marble-sized spheroid in blue.

warming. For example, the case of the notorious "hockey stick" graph which the IPCC promoted to a great extent and then very quietly dropped. The "hockey stick" data later became the subject of criminal court proceedings in Canada. The whole thing continues in the courts with accusations that should never have to come about in real science.

National Review carries a [story](#) on this, "No, Michael Mann, You Aren't Going to 'Ruin' this 'Filthy Organization'," in their February 27, 2020 issue.

The "hockey stick" had already been shown to have been incorrect when Al Gore still incorporated it in his movie, *An Inconvenient Truth*.

57. Another example is the "climategate" scandal, when dishonest emails were uncovered. From this incident came the phrase "hide the decline." When "hoped for" global warming did not occur, and temperatures instead declined, certain scientists plotted how to "hide the decline" to fool the public.

See Brian Sussman's [book](#), *Climategate: A Veteran Meteorologist Exposes the Global Warming Scam*, and my [article](#), "Climategate: Nearly Ten Years Later," posted November 1, 2019 in Watts Up With That.

58. The observed conclusions arrived at from the work of Svensmark (and others) is that a weak magnetic shield around the Earth allows more cosmic rays to enter the atmosphere. They induce more cloud. More cloud prevents the Sun's natural heat from reaching the ground. This causes the Earth to be cooler, leading to global cool-

ing. A stronger magnetic shield leads to global warming, due to less cloud shield thus allowing the ground to absorb heat and so heat up the atmosphere generally.

The MWP, LIA, and modern warming (and lack of it during the 21st Century) link well to sunspot number and magnetic field variation. Linkage to CO₂ concentration is very poor and any actual causality cannot be shown. It is inferred because of the existence of a greenhouse effect (No. 11), and the physics of infrared radiation windows (No. 14).

59. Organizations such as Greenpeace and other similar ones have pushed hard to “save the planet” from an increase in CO₂ emissions. This call is only meaningful if there is someone to blame. The blame has been directed at industry in general and the burning of fossil fuels in particular.

60. Since “saving the planet” is a very honorable-sounding cause to strive for, it is easy to gain many supporters. It would be a very inconvenient truth to have to admit that observed global warming is entirely natural and is caused by the Sun. Also, that it has happened often before.

Even more awkward is that global warming periods have been associated with health, welfare, and economic progress, whereas cooling periods (like the LIA) are associated with crop failures, disease, famine, and economic failure. (See state of Europe during the Little Ice Age—well documented.)

61. So now we have a huge political boulder rolling down the hill: Save the planet—stop industrial CO₂ production. Interestingly, the same extreme Green people say “stop nuclear power” because their goal is to reduce all power production, to limit industrial growth—to save the planet, because industrial growth produces CO₂.

62. Nuclear power now finds itself in the interesting position that it is (sort of) benefiting from the “reduce CO₂” mantra because nuclear produces no CO₂. “Sort of” because the CO₂ proponents try to say that nuclear power does produce some CO₂ when you factor in uranium mining, fuel transportation, and so on. This is a case of grasping at almost invisible straws. They do not then reference the CO₂ produced in the production of solar panels and wind turbines. What about mining the silicon? What about the production of all the concrete for thousands of wind turbine foundations? How about the transport of thousands of huge wind turbines all over the world? It is silly to tally all this up for a CO₂ argument. It is also silly to argue uranium mining as a CO₂ output for nuclear power.

63. I could go on a lot more, but the bottom line (lines) of all this is that some global warming occurred over the period from the Crimean War to now, but it also happened during the Medieval Warming Period. The link to CO₂ at all is tenuous, let alone a link to anthropogenic CO₂ being the cause.

The magnetic field of the Sun does alter cloud cover. Cloud cover does affect temperature. Temperature over past centuries links well to solar activity, so why discount the potential solar effect now?

The only answer is that it is politically expedient for certain organizations to have anthropogenic CO₂ as “the fault,” because there is then someone to blame, tax, and control.

A large-scale popular consensus in favor of the theory of anthropogenic CO₂ damaging the planet, just does not exist amongst qualified people who count. *More than 100 scientists* sent a letter to President Obama, of which I am a signatory.

At that time, President-elect Obama said: “Few challenges facing America and the world are more urgent than combating climate change. The science is beyond dispute and the facts are clear.” (President-elect Barack Obama, 19 November 2008). This statement of his was just not true and it prompted the letter to Obama.

There are a number of other such letters and petitions in similar vein, which can be found after a bit of searching, but sadly they are mostly ignored by the popular media.

“Think for yourself and let others enjoy the privilege of doing so too.” —Voltaire

So, Where Are We Wandering to?

The whole global warming and climate change social phenomenon going on around the world is an interesting occurrence in human psychology. It is a mixture of science, psychology, mysticism, politics, and group adherence. The challenge is to separate one from the other.

Without doubt, where we find ourselves now, is that calls for CO₂ reduction are a political force, whether the argument is scientifically valid or not. However, what is inescapable is that outcomes resulting from the climate change debate are having a massive economic and social impact on societies around the world. There are calls from the Greens to drastically reduce air travel and to ban the eating of red meat, supposedly to “save the planet.” Many of these moves seem to be aimed at the wealthier segments of society and so gain some sympa-



public domain



CC/sofoton.es

Outcomes from the climate change debate are having a massive adverse economic and social impact on societies around the world. Here, interruptible energy sources. At left, wind turbines in Germany; at right, a large photovoltaic array along a highway next to the Munich airport.

thy; but frequently some of the hardest hit are those who work in these industries, and also people in developing societies in Africa and elsewhere.

People in developing societies are the ones who are told to not emulate “the foolish first world who use too much energy,” and instead of using a tractor and metal plough to prepare the land for crops, to use an ox and a handmade wooden plough, because that is “living in harmony with nature.” They are also told that such action avoids using polluting diesel fuel and does not emit CO₂ from the tractor exhaust. I have been present when European Greens have told rural African women to carry water from the river in buckets and not to use diesel or electrical pumps, to save the CO₂ emissions.

Nations which are less than 20% electrified are told to limit electricity expansion and to use intermittent solar and wind power to advance their economies into the 21st Century. Where is the morality in this?

Of course, we need to protect our planet; it is our home. But we need to address the

high seas instead. It is not moral for first world countries to curtail or block mining operations in African countries which export raw materials, but then to tell them to import computers and TVs from the first world.

It is not moral to induce developing countries and others to become dependent on energy from wind turbines which are supplied by only a few first-world companies. Even more immoral is when this is done on the basis of claims of a scientific legitimacy and consensus, when in fact this claim is highly suspect, and in many cases demonstrably incorrect.

It is really bad when gangland tactics are used to attempt to silence opposing voices, to the point at which scientists and media editors are dismissed from their jobs for contradicting an alarmist political position on climate claims. For centuries, the concept of the truth of genuine science and of true logical thought has been championed. It is time that those honorable objectives are given genuine stature. We need to get it right.



NASA

An African family gets a demonstration of a solar oven. How well will it work at sunrise, on a cloudy day, or when it rains?