

**Attention:**           **John Kerry**  
                              **U.S. Special Presidential Envoy for Climate**

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I worked in the mining and smelting industry from 1971 to 2005. The early days included 5 years as a research chemist in process design of pollution abatement facilities (REAL pollution and REAL abatement) followed by about 20 years managing various metallurgical operations where focus on pollution control and abatement was always of paramount importance.

Shortly after retiring, I became concerned about the apparent correlation between CO<sub>2</sub> and global warming after watching Al Gore's documentary. So, I began investigating the merits of the anthropogenic global warming (AGW) hypothesis. It didn't take long to determine that this AGW concept is a collection of exaggerations and misrepresentations of various scientific principles and evidence, ALL amounting to nothing more than a "sham-scam" (probably a new word). I've been a voice of reason on the subject ever since.

## **Part 1 - Letter to John Kerry**

The idea that infrared (IR) radiation from land surfaces being absorbed by a miniscule 4 parts out of every 10,000 in the atmosphere is responsible for such gargantuan heat transfer (to the other 9,996 parts) is utter nonsense. But that in essence is the premise of the ever-predicted catastrophic global warming and climate change dogma.

All these photons (unit packets of energy) radiating from the earth's surface are (by definition) travelling at light speed in a straight line, and when only 4 out of 10,000 molecules in the atmosphere are CO<sub>2</sub> (capable of scattering and thus redirecting a small percentage of these photons), the vast majority of these photons will reach the upper limits of the atmosphere just as quickly regardless of any CO<sub>2</sub> concentration increases anticipated by alarmists.

So the insulation effect (which is not a "greenhouse" effect) simply cannot be due to an extremely dilute gas like CO<sub>2</sub> (4 molecules per 10,000) in the atmosphere.

Even more meaningful than just debunking this AGW premise - I would like to suggest that there is a far more plausible rationale that explains how earth's atmosphere (all of it, not just the so-called "greenhouse gases") slows the cooling of the sun-heated earth's surface as much as it does every day - mostly by way of mass transfer of energy; that is:

1. molecular collisions between the earth's surfaces and the atmosphere [much like how a forced-air-furnace warms the "cold" return air in our homes],
2. evaporative cooling of ocean surfaces,
3. convection of warmed air (resultant from 1. and 2.) to the upper region of the troposphere.
4. Finally, the energy escapes to the upper reaches of the atmosphere and outer space by radiative heat transfer (from whence it came, maintaining the balance of energy in = energy out), and the thus cooled and denser air sinks back to earth's surface for a repeat performance.

As described, this heat transfer process not only explains the magnitude of the insulation effect that we all experience each and every day after the sun goes down, but it also explains why the nocturnal cooling of the earth does not happen as rapidly as it does on the moon because the moon does not have an insulating atmosphere. As the energy input from the sun rises (or falls), so does the energy content of the insulating atmosphere. All in accordance with the laws of science, just as with any insulator. It's all about flux and how insulators affect flux.

Earth's average global temperature is about 33 degrees warmer than it would be if it did not have an atmosphere and the above reasoning is the logical and scientific rationale for this fact. And we can thank God and Mother Nature for such elegant and naturally occurring checks & balances to sustain life on earth. It is certainly not anything that mankind is capable of controlling - with or without burning hydrocarbon fuels.

The above letter is purposely short by request, and it is an attempt to offer an alternative explanation for the cooling of earth's surface each day and how that cooling is retarded by an insulating atmosphere that effectively "warms" the globe relative to a hypothetical atmosphere-free earth. It is meant to be a plausible alternative to the seriously flawed AGW hypothesis, and all the fear-mongering that goes with it. Below is my response to a rebuttal that I received. So what

follows below are a few details in support of the assertions I made in my letter to John Kerry.

## **Part 2 - Response to a critique of my letter**

The heat transfer from earth's surfaces to the upper regions of the troposphere is partly due to 1. radiative transfer of IR wavelengths of energy and partly due to 2. mass transfer of energy by way of collisions between earth's surfaces and the particles of mass in the atmosphere followed by mass transfer of energy to the upper levels of the troposphere via convection. I don't know quantitatively the relative contributions of 1. and 2., but nor does anyone else. I agree with the alarmists however that this energy escapes to outer space via emission of IR radiation - i.e. radiative heat transfer. This final step of transferring energy from earth's surface to outer space is necessary to maintain Earth's energy balance. Energy-in must equal energy-out. A protracted retention of energy (by whatever means) in a system cannot result in a reduction of IR transferring out of the system without a reduction of energy coming into the system however. That would conflict with the laws of energy conservation, so I really have trouble with the following statement: "CO2 is responsible for about 20% of the total reduction of IR emission to outer space."

It is commonly understood that energy comes in finite sized indivisible packets and we call these packets photons. When energy gets together with mass, it manifests itself in so very many ways, – the weak forces, the strong forces, electricity, magnetism, motion, doing work, chemical bonds, energy levels of electron clouds, heat, light, color, and all other energy phenomena. Energy can be radiatively conveyed in a medium or in a vacuum by the movement of these massless entities (photons) at the speed of light, by conduction from one block of mass to another, or by convection through a fluid such as water or air. The direction of both radiative transfer of energy and mass transfer of energy is always from high concentration to low concentration no matter the mode of transport. So long as it can overcome the forces that keep it “bound”, it will move. Take away or reduce the concentration gradient OR those binding forces, and the flux will diminish or zero out.

The alternative explanation I offer in my letter is not a denial of radiative heat transfer, nor is it heedless of the "solid physics" of CO2's IR scattering capacity. Scattering is the process of absorption and emission of radiation in random

directions. It is not equivalent to "trapping" IR radiation. This alternative explanation is also not meant to be "instead of" radiative heat transfer, but rather "in addition to" radiative heat transfer. Here-in lies the disagreement that I apparently have with a couple of critics. The additional means of heat transfer in this alternative explanation accounts for an order of magnitude more insulating capacity (global warming) than does CO<sub>2</sub> in my opinion.

This alternative explanation is more consistent with both 1. the underlying chemistry and physics of heat transfer from earth's surfaces to the atmosphere before escaping to outer space AND 2. the evidence at hand (both historical and present day), when compared to the CO<sub>2</sub> driven AGW hypothesis.

Even the alarmists admit that earth's atmospheric CO<sub>2</sub> alone cannot explain how it can possibly account for 6 degrees of the 33 of overall "warming" because it accounts for only 0.04% of the atmosphere AND it is capable of absorbing only 2 very narrow band widths of IR radiation emitted from earth's surface. So to compensate for these shortcomings, their models now include a positive feedback loop involving water vapour. Supposedly the CO<sub>2</sub> raises the average global temperature of the atmosphere just enough to result in increased evaporation of surface water and the water vapour (which is a far more efficient absorber of IR, and on average is about 40 times more concentrated) absorbs even more IR radiation. Ah ha!! The probability of Armageddon is still alive in spite of the science!!

The alarmists claim that 6 degrees of the overall average 33 degrees of "warming" is due to CO<sub>2</sub>. If that were true, then how much of that 33 degrees is due to water vapour? After all, water vapour is capable of absorbing and scattering far more and far wider bandwidths of IR AND it is on average about 40 times more ubiquitous in the atmosphere than is CO<sub>2</sub>. Not only that, but there is many times more IR radiation available for absorption by water vapour than there is available for absorption by CO<sub>2</sub>. So if CO<sub>2</sub> is responsible for 6 degrees of warming, then wouldn't water vapour be responsible for at least a magnitude higher amount of warming? Thank goodness that is not the case! If it was, Earth would be uninhabitable.

Because of the above shortages, whatever the effect that CO<sub>2</sub> truly has on global temperatures is diminished logarithmically with future increasing CO<sub>2</sub> concentrations, even if the major source of the higher CO<sub>2</sub> levels is out-gassing from the warming oceans (which it is), in accordance with Henry's Law. Given that we've seen only a 0.69 degree (?) rise in average global temperature since

atmospheric levels of CO<sub>2</sub> have risen by about 35% following the Little Ice Age, how can the alarmists honestly expect the next 35% or even 100% rise in CO<sub>2</sub> to cause even a marginal temperature increase, let alone something catastrophic? It simply does not compute.

The alarmists also claim that a small temperature rise (infinitesimal?) caused by CO<sub>2</sub> further causes an increase in water vapour concentration and the increased amount of water vapour then absorbs and scatters even more IR (supposedly "trapping" or "blocking" more heat from escaping). So my question then is: Why is CO<sub>2</sub> even necessary in this picture?, when H<sub>2</sub>O alone would be capable of this positive feedback loop, notwithstanding that water vapour is a condensable gas offsetting this positive feedback with a negative feedback.

How do the alarmists explain the fact that the entire atmosphere rises and falls by an average of about 20 degrees centigrade and more every day if 98% of it is transparent to IR radiation? Neither N<sub>2</sub> nor O<sub>2</sub> are capable of absorbing any IR wavelengths. This is indeed a gargantuan transfer of energy each day and CO<sub>2</sub> cannot possibly account for it. So how do the alarmists explain this? The mean-free path of IR photons from earth's surface to outer space is not a straight line up from earth's surface, but the scattering of it by CO<sub>2</sub> (at 0.04% of the atmosphere) surely can't alter it enough to measurably slow the transfer of energy from earth's surface to outer space.

One final thought should raise serious doubt from any objective observer regarding the validity of the AGW hypothesis. Not a single forecast or prediction of the dozens of catastrophes have yet to come true, in spite of many expiry dates long passing. And all while the atmospheric concentration of CO<sub>2</sub> has already risen by 35%.

I hope my attempt above to give a few specific reasons why I believe the AGW hypothesis to be utter nonsense and why the rationale for mass transfer of energy plus radiant transfer of energy is a far more credible explanation for the modulation of global temperatures than is the premise underlying the AGW hypothesis.

## **Part 3 - Some Words in Defense of CO<sub>2</sub> and Hydrocarbons**

Very simply put, carbon is THE MAIN BUILDING BLOCK OF LIFE. An entire branch of chemistry revolves around carbon and there is no life form on earth that even exists without it because all life is an extremely and elegantly complex array of organic (aka carbon) chemicals found in every part of every cell of every organ of every organism. Life IS the biochemistry of carbon, and CO<sub>2</sub> is the simplest form of carbon that is bio-available. All plants absorb it and then naturally assimilate it into various biochemicals and coincidentally free up O<sub>2</sub> which is necessary for all aerobic respiration of the untold billions of different life-forms that occupy our planet. CO<sub>2</sub> is the link between the O<sub>2</sub> makers and the O<sub>2</sub> consumers and Mother Nature has conveniently made the O<sub>2</sub> consumers the CO<sub>2</sub> producers.

What far too few people appreciate is that hydrocarbon fuels (also inaccurately described as fossil fuels) are 100% sourced from life-forms, not necessarily from just fossilized life-forms. So even hydrocarbon fuels are a crucial part of the carbon cycle - the cycle of Life.

If mankind is successful in appreciably diminishing or restricting the presence of atmospheric CO<sub>2</sub>, then LIFE as we know will cease to even exist. It would be like jamming up a cog in the carbon cycle. The carbon cycle is the cycle of life and to arrogantly tamper with it is just an ultra vain attempt to manipulate Nature itself. And ultra STUPID!

Russ Babcock