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CO_2 Reconsidered

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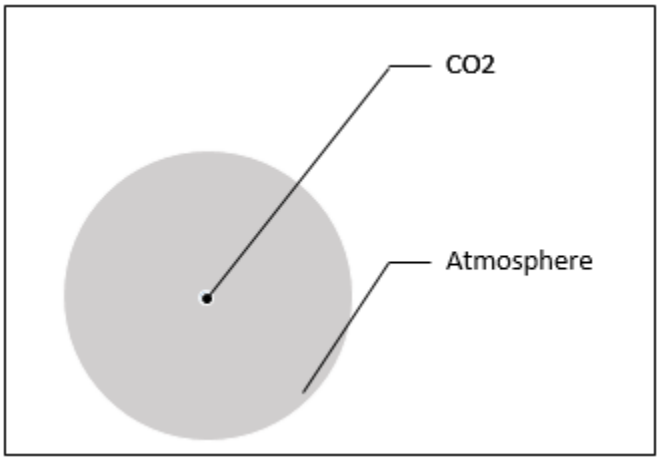
Decades of rhetoric against CO_2 may soon be translated into policy that the world can ill afford. Here is a brief look at a few facts that dispute this agenda.

The argument for AGW (Anthropogenic Global Warming) rests on the CO_2 greenhouse effect. No doubt anthropogenic additions to CO_2 have contributed to its rise to the current 420 ppm from pre-industrial levels of 280 ppm.

CO_2 is by volume less than .05% of the composition of dry air below the ionosphere, but this immoderate increase to plant healthy levels has been deemed to upset the terrestrial heat budget.



Volume comparison in dry air

By wide agreement, however, most of the greenhouse gas effect is "primarily attributable to H2O" as an atmospheric component (approximately 1%) in the form of water vapor.*

Intriguingly, without adding the enhanced (feedback) effect of increased water vapor caused by the incremental warming effect of CO_2, the case for AGW falters. The CO_2 contribution (forcing) by itself would be inadequate to support significant warming.

Global climate models project resultant warming to be several degrees C by 2100.
Notably, these models track too hot, as has been seen in their collective abject failure on that score since the 1990's, (see article for an extensive treatment of these issues).

AGW assumptions seem overly conjectural. For instance, if marginal warming from CO_2 is the cause of several times more warming through a feedback process producing more water vapor, so would any increase in warmth produce such a result. The AGW case employs an

unwarranted amplification function. In other words, following this logic, warming amplification would occur regardless of CO_2 effects–all that would be required would be any marginal source of natural warming. And such warming has been seen in cycles that have occurred for various reasons numerous times in the past without increased CO_2. Moreover, CO_2 levels that have been much higher in the past never produced multiple forcing effects or run-away heating of the earth. During the Ordovician glaciation CO_2 levels were fifteen times present levels. This feedback effect in global climate models is mere assumption.

S. Fred Singer, in *Hot Talk, Cold Science,* ** has raised the likelihood of feedback effects that compensate CO_2 warming with cooling effects on the terrestrial heat budget. Increased cloudiness has a cooling effect.

Increased water vapor affects snowfall (enhanced since 1967, especially over the Antarctic). Singer advances this possibility in accounting for the lack of any recent increase in the Holocene (the current inter-glacial period) gradual long-term sea level trend rate above its 18cm/century. He projects the rise to be another 6 inches by 2100. (p.140)

Model assumptions that posit increased water vapor in the upper troposphere that would support warming have been challenged by Singer. He cites William Gray's research into increased deep cumulus convection (without atmospheric moisture gains in the upper troposphere). (p.123)

He cites evaporation cooling effects on the heat budget; he explains a mechanism in which CO_2 may subtract from flux warming due to the stratospheric positive lapse rate where temperatures rise with height. Increased CO_2 at these higher levels would enhance net heat loss to space. (p.133)

Singer considers factors that can create chaotic variability excluded by AGW advocates. For instance, variations in solar output or in deep ocean influences, avoided in models because they cannot be computed reliably.

And little is said by the AGW alarmists about the beneficial effects on vegetation from increased CO_2 (fertilization), some estimates are over 13% (global increase in the Leaf Area Index) per 100 ppm.

Yet, of course, the science is settled, this other evidence cannot be heard. Forces are arrayed to ramp up appropriations and invoke measures attending to the agenda of select corporate, academic and regulatory interests, at great cost, all to allay unproven AGW.

*Sverre Petterssen, Introduction to Meteorology, 1969, McGraw Hill, Inc. New York. p 50.

**S. Fred Singer. *Hot Talk, Cold Science*, 2021, Independent Institute, Oakland Ca.