

# Note - Evidence of Systemic Bias by the IPCC in its Response to Anthropogenic Atmospheric Warming

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It is indisputable that there has been an unusual increase in mean global air temperature following massive growth in our use of fossil fuels. In combined thermal terms, coal, oil and gas consumption in 2020 is as twice what as in 1990. At the same time the atmospheric warming curve appears to be steeper. Thanks to the work of the Intergovernmental Panel on Climate Change (IPCC or the Panel) the world is now well aware of this threat. However, it is the authors' considered view that, from its inception, the Panel has consistently deprecated the likelihood of anthropogenic atmospheric warming originating from heat sources other than greenhouse gases. This has resulted in decades of expensive and ineffectual attempts to control such emissions, and therefore the delay in mitigation of the warming.

When a fossil fuel is burnt there are three types of products that may cause atmospheric warming: carbon dioxide and other gases (i.e., the so-called GHGs and Sox, NOx, PMs etc.), water vapour and the actual heat. Only the first of them i.e., GHGs has been the subject of limitation by international

agreement, perhaps because its increase in atmospheric concentration can be readily quantified, and the assumption of their blocking certain long wavelength radiations by absorbing them from the earth surface is well perceived.

Nonetheless, these gases appear to have increased only by about a hundred parts per million - one part in ten thousand - in the atmosphere since the start of the industrial revolution and the ensuing exploitation of fossil fuels in quantity. Nor does the temperature rise seem to be greatly affected by water vapour, even though there is about twenty times as much moisture in the atmosphere as the so-called GHGs. In fact, water vapor manifestly exercises significant control over and regulation of local and the global atmospheric conditions.

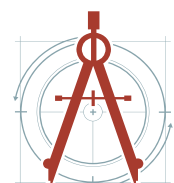
Recent works by Bian [1,2] suggest that the third component of fossil fuel combustion, i.e., waste heat - direct heating - is by far the dominant influence. An unpublished work by Hollaway [3] suggests that an atmospheric temperature rise of over 2.5 °C could have occurred since the early 1800s if our planet's emissivity had remained

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constant for the period, by means of the analysis of total annual fossil fuel energy consumption and the balance of ‘waste’ (entropic) heat based on the information from Our World in Data’s website. The efficiency of fuel use is probably no more than 25% overall. The simple calculations used to arrive at this approximate figure are as follows:

Item	Value	Unit
Total approximate energy from all fossil fuels used since the early 1800s	5,455,496	Terawatt hours (from <a href="https://ourworldindata.org/">https://ourworldindata.org/</a> ) [4]
Expressed as power	$2.0 \times 10^{16}$	Mega joules
Approximate Mass of the Atmosphere	$5.2 \times 10^{15}$	Tons
Specific heat of the Atmosphere	~1.20	°C / (kJ·kg [2])
Theoretical temperature rise if all fossil fuels only heated the atmosphere	3.1	°C
Theoretical temperature rise if, as is likely, overall efficiency of fossil fuel use is of the order of 50%	1.6	°C

Rego [5] took a similar approach, obtained an air temperature rise estimate of about 4.1 °C. Of course, this entropic heat cannot only stay in air, it also enters the land and oceans, and some even has been absorbed by sea ices and glaciers, all these will definitely reduce the atmospheric warming by a great extent, which is dependent on the allocation of the heat between these components as described in Bian’s articles [1,2].

These analyses raise the question of why entropic heating has been ignored by the IPCC, of which Dr Bert Bolin was the founder and the chairperson for the first ten years. Dr Bolin recorded the events leading to IPCC’s creation in his book ‘A History of the Science and Politics of Climate Change’ [6].

Dr Bolin was a Professor Emeritus in the Department of Meteorology at the University of Stockholm, a Director of the International Institute for Meteorology in Stockholm, and a Scientific Advisor to the Swedish Prime Minister. He was nominated for the Chairmanship of the IPCC in 1988 and had served as the Chairman for the next ten years, having been much involved in its creation. About 3,500 scientists were associated with the Panel, and Dr Bolin, as quoted in Wikipedia, ‘is credited with bringing together a diverse range of views among them into something resembling a consensus’, i.e., GHGs caused the warming. This range included those who believed global warming was caused by cosmic rays, by changes in the earth’s orbit, by changes in the tilt of the earth’s axis and by water vapour.

This “consensus” that Dr Bolin created was based on the investigations of Svante Arrhenius a century earlier, whose pioneering work on carbon dioxide from fossil fuel combustion predicted a warming of the atmosphere. There are forty mentions of Arrhenius’ name in his book and 470 references to ‘carbon dioxide’. There are only 20 mentions of ‘water vapour’ and none to the possibility of entropic heating or indeed any of the alternative possibilities of causation. Despite the title, there is very little scientific discussion in Dr Bolin’s book; Arrhenius’ views are treated as a given theory throughout. This bias has been carried over by the IPCC to the present day, and consequentially to the global acceptance of greenhouse gas emissions as the only significant culprit.

Unfortunately, analysis of historical GHG data and atmospheric temperature anomalies indicates that no certain correlation exists between them, instead, in different periods since 1880 different correlations exist between them [2]. This further doubles down the argument: how GHGs constitute the primary cause of the global warming since the beginning of industrialization?

That entropic heating is a major factor can be seen in the form of the night-time satellite images of

our light-spangled planet [7]. This dramatic display represents about 15% of the electric power we use, about 80% of which in turn is derived from generators (steam or gas turbine) with an overall efficiency of perhaps 35% (<https://ourworldindata.org/electricity-mix>). The outcome is that visible illumination represents perhaps a tenth of the entropic heat being put into the atmosphere by electricity generation from fossil fuels.

Consequently, the authors suggest re-examination of the causes of anthropogenic warming be conducted widely and deeply by international communities of science and engineering involving various disciplinaries such as physics, chemistry including thermodynamics, photo-electronics, molecular/atomic physics etc.

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