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To the Committee on the Environment,  
Nature Conservation and Nuclear Safety,  
Deutscher Bundestag

**Subject: Statement letter for the committee discussion on  
"COP24 in Katowice – Another milestone for global climate protection"**

Dear Sirs,

Below please find a detailed statement about the fact that there is no substantial evidence to support the idea that most of the global warming is anthropogenic and that climate sensitivity is necessarily high. In fact, the evidence points to the contrary. This should be seriously considered before allocating substantial public resources.

Sincerely,

Nir Shaviv

**Summary**

1. There is no direct evidence demonstrating that large CO<sub>2</sub> variations cause large temperature variations. There is evidence for the opposite.
2. The two arguments used by the IPCC to "prove" the catastrophic AGW picture are flawed—warming over the 20<sup>th</sup> century is not unique, while the claim that there is nothing else to explain the 20<sup>th</sup> century warming is simply wrong.
3. There are many other pseudo-arguments which are simply irrelevant. This includes the often heard appeal to authority (the 97% claim) as well as arguments based on evidence for warming, which is not evidence for warming *by humans*.
4. The sun has a large but ignored effect on the climate. With it, one obtains a consistent picture for 20<sup>th</sup> century climate change, one in which more than half of the 20<sup>th</sup> century is due to solar activity increase and in which climate sensitivity is low (and consistent with empirical data).
5. The low climate sensitivity implies that future climate warming will be benign and within the goals set by the Copenhagen and Paris summits without having to take particular steps. One has to rethink how much resources we wish to spend on the problem which is much more benign than commonly believed.

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## **What's wrong with the present day view of climate change?**

Let me start by asking a question, one which you should either ask yourself or ask the experts you rely on. What is the evidence proving that anthropogenic global warming will lead to a catastrophic climate change?

As I demonstrate below, this idea is in fact a misconception, and the so called evidence that we constantly hear is simply based on various fallacious arguments. Moreover, critical evidence that proves that it is wrong is actually blatantly ignored by the IPCC and alike.

The first and foremost argument that should simply be ignored is the appeal to authority or to a majority. Science is not a democracy and the fact that many believe one thing does not make them correct. If people have good arguments to convince you, let them stick to scientific arguments, not logical fallacies.

Other irrelevant arguments may appear scientific, but they are not. Evidence for warming is not evidence for warming by humans. Seeing a poor polar bear floating on an iceberg does not mean that humans caused warming. The same goes to receding glaciers. Sure, there was warming and glaciers are receding, but the logical leap that this warming is because of humans is simply an unsubstantiated claim, even more so when considering that you can find Roman remains under receded glaciers in the Alps or Viking graves in thawed permafrost in Greenland.

Other fallacious arguments include using qualitative arguments and the appeal to gut feelings. The fact that humanity is approaching 10 billion people does not prove that we caused a 0.8°C temperature increase. We could have just as much caused an 8°C increase or an 0.08°C. If all of humanity spits into the ocean, will sea level rise appreciably?

The simple fact is, there is no single piece of evidence that proves that a given amount of CO<sub>2</sub> increase should cause a large increase in temperature. As a matter of fact, there is evidence to the contrary! For example, over geological time scales, there were huge variations in the atmospheric CO<sub>2</sub> levels (by as much as a factor of 10) and they show no correlation whatsoever with the temperature. 450 million years ago there was 10 times as much CO<sub>2</sub> in the atmosphere but more extensive glaciations.

When you throw away the chaff of all the fallacious arguments and try to distill the climate science advocated by the IPCC and alike, you find that there are actually two arguments which appear as legitimate scientific arguments, but unfortunately don't hold water. The first is that the warming over the 20th century is unprecedented, and if so, it must be human. This is the whole point of the hockey stick so extensively featured in the third assessment report of the IPCC in 2001. The "climategate" e-mails demonstrate that this is a result of shady scientific analysis - the tree ring data showing that there was little temperature variation over the past millennium showed a decline after 1960, so, they cut it off and stitched thermometer data. The simple truth is that in the height of the middle ages it was probably just as warm as the latter half of the 20<sup>th</sup> century. You can even see it directly with temperature measurements in boreholes.

The second argument is that there is nothing else to explain the warming, and if there is nothing else it must be the only thing that can, which is the anthropogenic contribution. However, as I mention below, there is the sun.

Before explaining why the sun completely overturns the way we should see global warming and climate change in general. It is worth while to say a few words on climate sensitivity and why it is impossible to predict ab initio the anthropogenic contribution.

The most important question in climate science is climate sensitivity, by how much will the average global temperature increase if you say double the amount of CO<sub>2</sub>. Oddly enough, the range quoted by the IPCC, which is 1.5 to 4.5°C per CO<sub>2</sub> doubling was set in the Charney US federal committee in 1979. All the IPCC scientific reports from 1990 to 2013 state that the range is the same. The only exception is the penultimate report which stated it is 2 to 4.5. The reason they returned to the 1.5 to 4.5 range is because there was virtually no global warming since 2000 (the so called “hiatus”), which is embarrassingly inconsistent with a large climate sensitivity. What’s more embarrassing is that over almost 4 decades of research and billions of dollars (and euros) invested in climate research, we don’t know the answer to the most important question any better.

The body of evidence however clearly shows that the climate sensitivity is on the low side, about 1 to 1.5 degree increase per CO<sub>2</sub> doubling. People in the climate community are scratching their heads trying to understand the so called hiatus in the warming. Where is the heat hiding? While in reality it simply points to a low sensitivity. The “missing” heat has actually escaped Earth already! If you look at the average global response to large volcanic eruptions, from Krakatoa to Pinatubo, you would see that the global temperature decreased by only about 0.1°C while the hypersensitive climate models give 0.3 to 0.5°C, not seen in reality. Over geological time scales, the aforementioned lack of correlation between CO<sub>2</sub> and temperature places a clear upper limit of a 1.5°C per CO<sub>2</sub> doubling sensitivity. Last, once we take the solar contribution into account, a much more consistent picture for the 20th century climate changes arises, one in which the climate drivers (humans AND solar) are notably larger, and the sensitivity notably smaller.

So, how do we know that the sun has a large effect on climate? Fig. 1 below is probably one of the most important graphs to the understanding of climate change, but which is simply ignored by the IPCC and alarmists. You can see that over more than 80 years of tide gauge records there is an extremely clear correlation between solar activity and sea level rise - active sun, the oceans rise. Inactive sun - the oceans fall. On short time scales it is predominantly heat going to the oceans and thermal expansion of the water. This can then be used to quantify the radiative forcing of the sun, and see that it is about 10 times larger than what the protagonists of the IPCC view are willing to admit there is. The IPCC only considers changes in the irradiance, while this (and other such data) unequivocally demonstrate that there is an amplifying mechanism linking solar activity and climate.

Although extremely interesting, the details of the mechanism (actually 3 separate microphysical effects) are beyond the scope of this summary. They are related to the amount of atmospheric ionization which is governed by solar activity. Basically, when the sun is more active, we have less clouds that are generally less white.

The main conclusion is therefore that climate is not sensitive to changes in the radiative forcing. There are several red flags that people do their best to ignore. This include temperature and sea levels that rise less than predictions made in previous IPCC scientific reports, as well as evidence that climate is not sensitivity

In Paris and Copenhagen it was concluded and agreed upon that we should ensure the warming will be less than 2°C. It will be less than 2°C even if we do nothing.

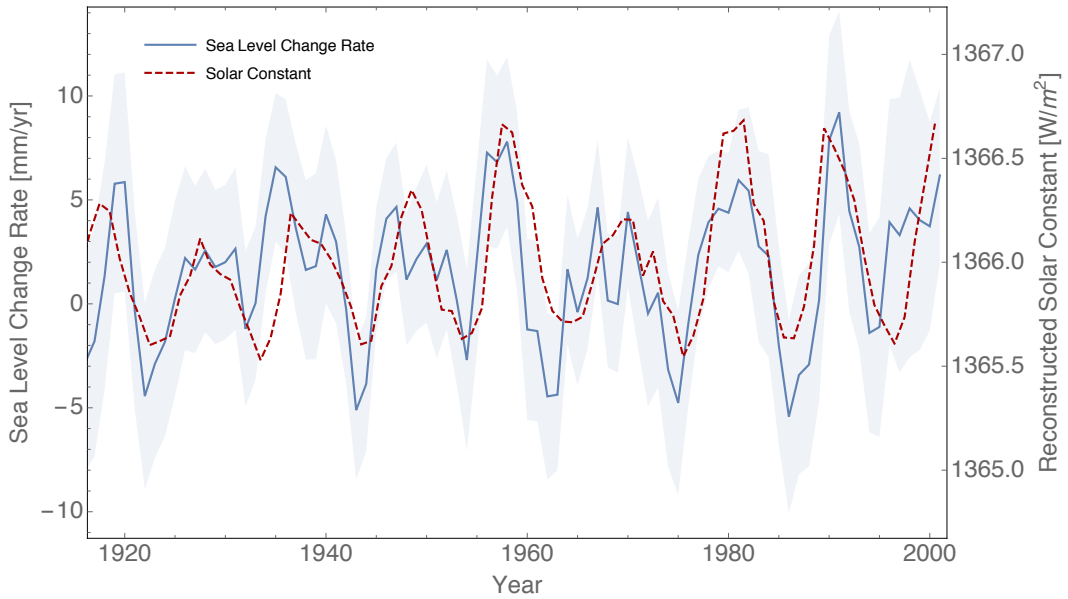


Fig. 1: Quantifying the solar forcing: Plotted are the sea level change rate (blue, with  $1\sigma$  error) and reconstructed solar constant (red, dashed). The clear correlation indicates that sea level change rate is affected by solar activity. The size implies that the peak variation over the solar cycle in the radiative flux corresponds to about  $1 \text{ W/m}^2$ . This is almost an order of magnitude larger than changes in the total solar irradiance.

	Emitted compound	Resulting atmospheric drivers	Radiative forcing by emissions and drivers		Level of confidence
Well-mixed greenhouse gases	CO <sub>2</sub>	CO <sub>2</sub>		1.68 [1.33 to 2.03]	VH
	CH <sub>4</sub>	CO <sub>2</sub> H <sub>2</sub> O <sup>str</sup> O <sub>3</sub> CH <sub>4</sub>		0.97 [0.74 to 1.20]	H
	Halo-carbons	O <sub>3</sub> CFCs HCFCs		0.18 [0.01 to 0.35]	H
	N <sub>2</sub> O	N <sub>2</sub> O		0.17 [0.13 to 0.21]	VH
Anthropogenic Short lived gases and aerosols	CO	CO <sub>2</sub> CH <sub>4</sub> O <sub>3</sub>		0.23 [0.16 to 0.30]	M
	NMVOC	CO <sub>2</sub> CH <sub>4</sub> O <sub>3</sub>		0.10 [0.05 to 0.15]	M
	NO <sub>x</sub>	Nitrate CH <sub>4</sub> O <sub>3</sub>		-0.15 [-0.34 to 0.03]	M
Short lived gases and aerosols (Mineral dust, SO <sub>x</sub> , NH <sub>x</sub> , Organic carbon and Black carbon)	Aerosols and precursors	Mineral dust Sulphate Nitrate Organic carbon Black carbon		-0.27 [-0.77 to 0.23]	H
	Cloud adjustments due to aerosols			-0.55 [-1.33 to -0.06]	L
	Albedo change due to land use			-0.15 [-0.25 to -0.05]	M
Natural	Changes in solar irradiance		IPCC	0.05 [0.00 to 0.10]	M

Fig. 2: Changes in the radiative forcing since the beginning of the industrial revolution, taken from the IPCC AR5 report. According to the IPCC, the changes in the solar irradiance correspond to  $0.05 \text{ W/m}^2$  (0 to 0.10 uncertainty). The tide gauge records indicate that solar forcing is much larger, about  $1.8 \pm 0.5 \text{ W/m}^2$ . The increased solar activity from the Maunder Minimum imply a net contribution