

Global Warming: The High Ground

Expensive and disruptive policies to fight the greenhouse effect are currently being considered by the U.S. and other nations. These policies are simply not based on enough science. As is often the case in science, there has been a considerable disparity between computer-driven greenhouse-effect models and the data collected to support them. The mid-1980s' General Circulation Models (GCMs) for climate change stated, in aggregate, that the planet would warm up some 4.2 C due to doubling of the natural CO₂ greenhouse effect. They further predicted that the warming would be greater and sooner in the Northern Hemisphere (it contains most of the world land, which warms up faster than water), and soonest in its high latitudes.

However, the combined effect of all of the greenhouse gases emitted into the atmosphere has already brought us half way toward doubling the background CO₂ concentration, and there is precious little warming to show for it. According to ground-based temperature records, the globe has warmed up about a quarter of a degree since most of the greenhouse gases were emitted after WW II. The Northern Hemisphere shows none; the Southern Hemisphere, which is supposed to warm up least and most slowly, shows more. Finally, and perhaps most important, almost all observed warming has been at night. Rather than harming agriculture with blazing hot days, night warming is probably beneficial because it serves primarily to lengthen the growing season.

In fact, the data imply that greenhouse enhancement will not create nearly as much net warming as the GCMs indicate, and that the warming will be primarily at night, which means it will occur mainly in winter. The atmosphere is almost certainly responding to the greenhouse insult by warming the nights, even as days cool throughout the land areas of the Northern Hemisphere. That is probably because cloudiness is increasing, as many records show. Throw in the fact that CO₂ is a limiting nutrient for plants, so that increasing its concentrations makes plants grow better, and you have a greener world in which plants grow longer. It is also pretty hard to melt the Greenland Ice Cap in winter, so much of the concern about sea level rise vanishes.

And even these temperature records may be overstatements. Since 1979, we have had orbiting platforms that can measure the temperature of the

lower atmosphere with an accuracy of ± 0.01 C, and they have found no warming since they were launched. In the high latitudes of the Northern Hemisphere, where GCMs say there should be several degrees of warming, they find the same: none.

What has happened is easy to understand. Because the atmosphere is very complicated and only partially quantified, GCMs use several knowingly incorrect parameters in order to come up with realistic answers. This is not a slam on scientists, because the literature is very candid about these problems. But should a GCM be used to formulate energy policy when it uses numbers for the Sun's output whose error is greater than the radiative change to be expected from doubling CO₂ (documented in the 1991 *Journal of Climate*)?

The result is that in the global warming issue, the political process took over long before the normal scientific process—hypotheses followed by confirming data—had been completed. It is interesting to note that the most recent GCMs tend to confine almost all warming of more than 4 C to very high latitudes in winter, which is obviously in the night. Thus data and hypotheses are converging upon a much more benign future. In fact, a not inconsiderable portion of the scientific community now believes that the future climate, in their words, will be "neutral or even beneficial."

The pity is that political interests, fueled by what is probably the largest lobby in this country's history (\$600 million was contributed to the largest environmental organizations in 1990), seized this issue before the scientists were finished with it. As a result, we are probably on our way to the most wrenching energy policy in history, one with the potential to reduce our Gross National Product by several percentage points per year. President Bush could assure this by acquiescing to environmentalist demands at the current Rio environmental summit.

What is most ironic is that those same political interests, upon learning that the climate apocalypse is probably not at hand, are not at all happy. The fact is that this lobby needs disastrous global warming in order for them to survive.

Their policy is not consistent with our science.

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