

Climate Fears and Finance

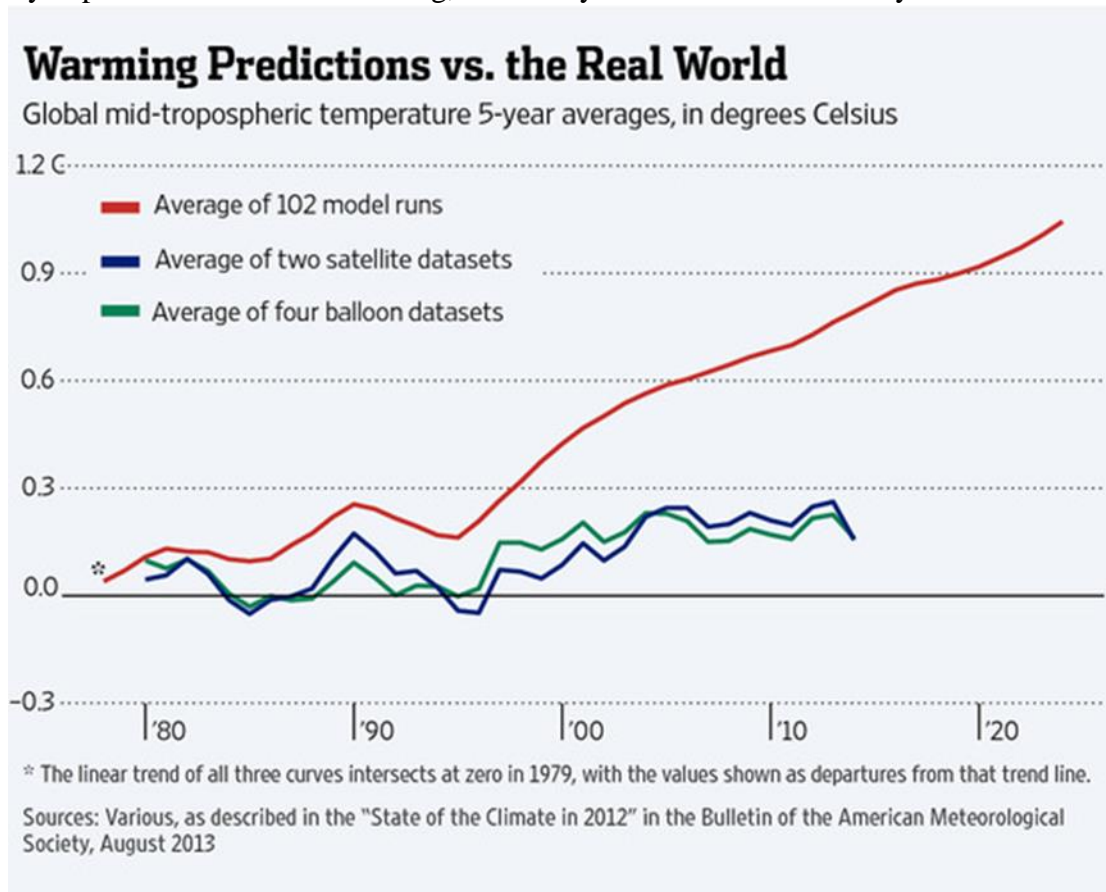
By the Science and Environmental Policy Project (SEPP)

The Science

Much of the fear of global warming, now called climate change, stems from long-term projections, forecasts, using complex climate models. These are correctly called projections, not predictions, because none of the models have undergone the rigorous scientific testing required for verification and validation. Consequently, the models and their results are speculative. If a climate model had been verified and validated, that would be the only model needed. As it is, we have multiple models producing a wide variety of results. A critical issue in global warming/climate change science is the reliability of the models.

By far, the most rigorous, comprehensive data on global temperatures come from satellite measurements of the atmosphere (mid-troposphere), which is where the greenhouse effect takes place. The measurements started in December 1978 and the temperature estimates are calculated by two independent groups, who closely agree. These data are independently supported by four sets of direct temperature measurements from weather balloons. Weather balloons do not comprehensively cover the globe. [Also, surface measurements have a number of issues including that these are taken primarily on land, oceans cover 71% of the Earth's surface.]

We can see below the direct comparison between 102 model runs and observations. [Model runs are very expensive and time consuming, thus many of the models have only one or two runs.]

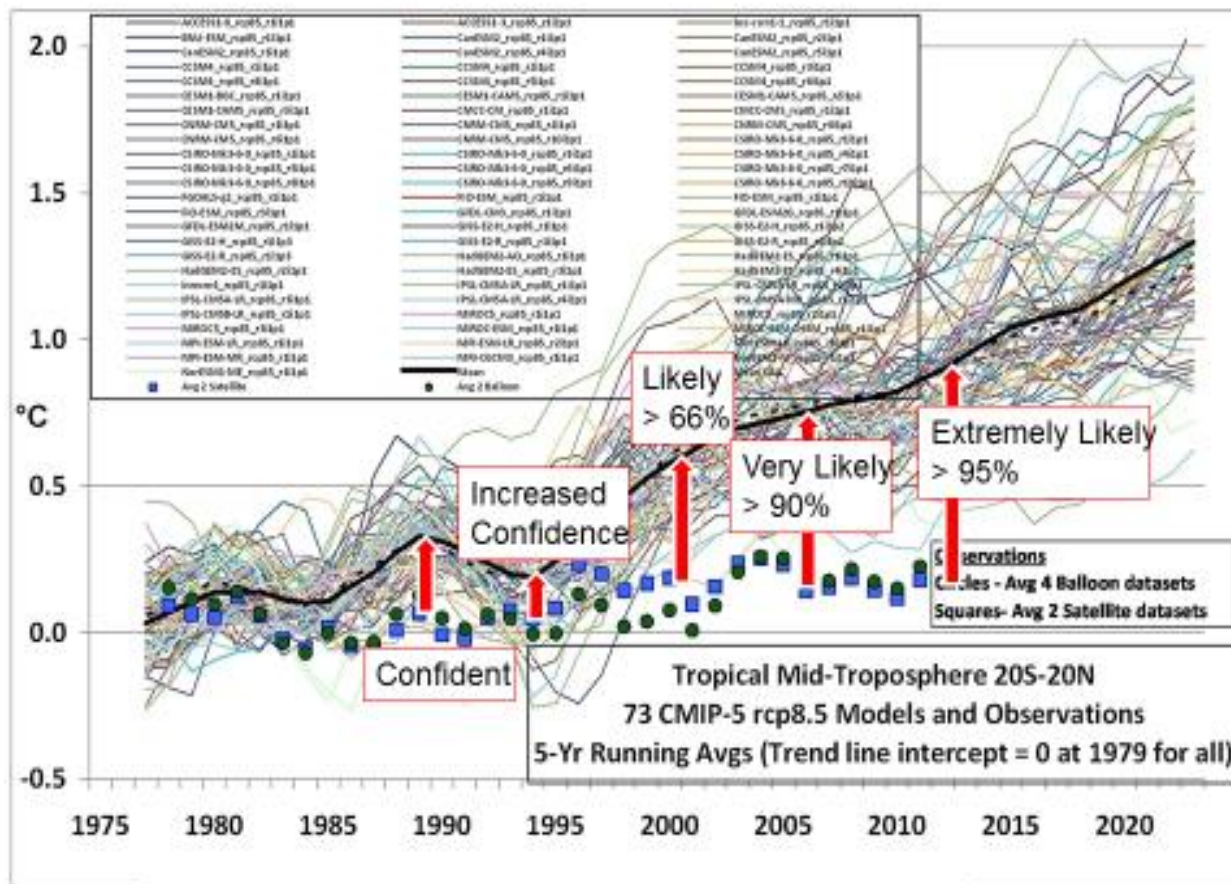


Source: McNider & Christy, Wall Street Journal, February 19, 2014

There is good agreement between the average of the two sets of satellite measurements and the average of the four sets of weather balloon measurements; but, significant disparity between the average of the model runs and the observations. This disparity is increasing over time. We also see that there has been no upward trend in temperatures for over a decade, even though levels of atmospheric carbon dioxide (CO₂) have been increasing significantly.

We can use another graph to see the disparity between individual models, including their average, and observations.

MODELS V. OBSERVATIONS



Arrows & CON statements (from IPCC) by H. Hayden; Roy Spencer, 6/6/13

The mass of lines (spaghetti) show the results from runs of 73 different climate models. The heavy black line is the average of these models and is similar to the average for 102 model runs in the first graph. The dots are the average from the four sets of balloon data. The squares are the average from the two sets of satellite data. As with the first graph, the two sets of observations correspond. But, as in the first graph, the models sharply diverge from the observations. All of the 73 climate models overestimate global warming.

The heavy red lines show the divergence between the models and observations at the time the UN Intergovernmental Panel on Climate Change (IPCC) issued each of its 5 assessment reports (AR). The boxes give the confidence (CON) the IPCC stated when claiming human emissions of

CO2 (and other gases) are the main cause of global warming (anthropogenic global warming (AGW)).

Ironically, as the “gap” between models and observations grew wider, successive UN-IPCC Assessment Reports (AR) expressed increasing certainty in AGW: namely, greater than 50% [AR2-1996], greater than 66% [AR3 2001], greater than 90% [AR4 2007], and greater than 95% [AR5 2013].

Clearly, current IPCC climate models are inadequate and cannot be used to forecast future temperatures or to set up far-reaching policies.

Conclusion: Government limiting emissions of essential CO2 is a “policy in search of a problem.”

The Finance

The failure of the IPCC and the climate establishment to produce reliable science and models is not due to the lack of funding. The United States, alone, has spent considerable sums on global warming/climate change issues. At different times, the Government Accountability Office (GAO), the Congressional Research Service (CRS), and the White House have reported to Congress on the extent of such funding. The reports are:

Climate Change: Improvements Needed to Clarify National Priorities and Better Align Them with Federal Funding Decisions

By Staff Writers, Summary, GAO-11-317, May 20, 2011 [FY 1993 to FY 2010]

<http://www.gao.gov/products/GAO-11-317>

Funding for Federal Climate Change Activities FY 2008 to FY 2012

By Jane Leggett, CRS, Apr 26, 2013

http://www.epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=91e9fae6-083a-44f6-b47c-33fdac25d6e0

Federal Climate Change Expenditures: Report to Congress

By Staff Writers, The White House, August, 2013 [FY 2012 to FY 2013]

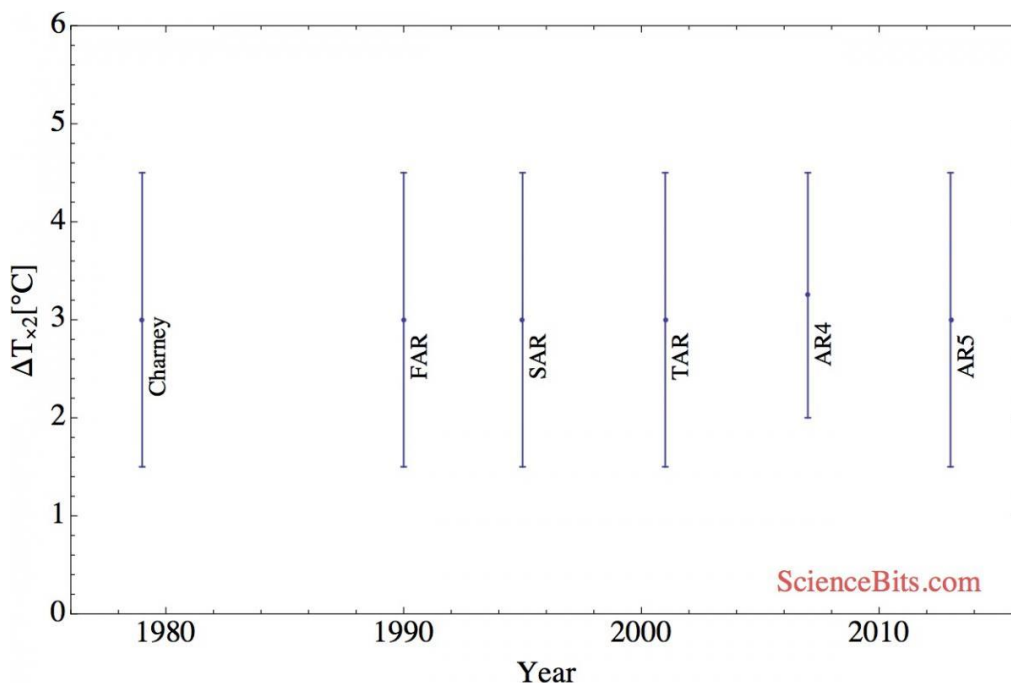
http://www.whitehouse.gov/sites/default/files/omb/assets/legislative_reports/fcce-report-to-congress.pdf

After examining these reports, and removing double counting, SEPP calculated that from Fiscal Year (FY) 1993 to FY 2013 **total US expenditures on climate change amount to more than \$165 Billion. More than \$35 Billion is identified as climate science.** By way of comparison, the historian at NASA has calculated that in current dollars the Apollo program cost about \$130 Billion. The US has spent more on climate change than it spent to send men to the Moon.

In science, we expect that as research continues, knowledge will increase. We will narrow the range of values of critical scientific estimates. The most critical number for global warming/climate change is the sensitivity of the Earth to a doubling of CO2.

A 1979 report to the US National Research Council of the National Academy of Sciences (Charney, et al. http://www.atmos.ucla.edu/~brianpm/download/charney_report.pdf) estimated that Climate Sensitivity of the earth to a doubling of CO₂ would range from 1.5°C to 4.5°C, about 3 to 8°F. Physicist Nir Shaviv the progress in climate science since 1979 as expressed by the IPCC in understanding this critical estimate. [First through Fifth Assessment Reports (AR)]

**After 35 Years and Tens of Billions Spent,
No Progress in Understanding the Impact of Carbon Dioxide on Temperatures as Shown in
Government Reports (1979 to 2014)**



Our knowledge of the impact of increasing atmospheric CO₂ has not advance for 35 years since the Charney report. Clearly, something is wrong with the assertion (hypothesis) that CO₂ has a significant impact on temperatures or the procedures (methodology) used by the IPCC, or both.

SEPP believes that the problems are both in the assertion and in the procedures. Studies that are largely ignored by the IPCC estimate that the sensitivity of the planet to a doubling of CO₂ will be below 1.5°C, perhaps significantly below 1°C. These estimates do not justify alarm about global warming/climate change.

What Is Wrong

An examination of the above referenced White House report indicates what is wrong with the financing of global warming/climate change.

**Major Categories of Federal Government Climate Change
Expenditures– FY 2013 (Enacted Budget Authority)**

US Global Change Research Program	\$2.509 Billion
Clean Energy Technologies	\$6.088 Billion
International Assistance	\$0.851 Billion

National Resources Adaption	\$0.095 Billion
Energy Tax Provisions That May Reduce Greenhouse Gases	\$4.999 Billion
Energy Payments in Lieu of Tax Provisions	\$8.080 Billion
Adjustments	\$0.024 Billion (-)

TOTAL Expenditures \$22.528 Billion
(The precision of the above figures is as stated by the White House.)

Of the total of \$22.5 Billion about \$2.5 Billion goes to the US Global Change Research Program (USGCRP). The principal function of the USGCRP is to provide to Congress a National Climate Assessment (NCA). It largely repeats the findings of the UN IPCC, emphasizing speculative future climate change impacts on the United States. USGCRP does not provide independent review or testing of models.

On May 6, 2014, the USGCRP released its third NCA, which divided the conterminous 48 states into six regions and contained sections on Alaska, Hawaii, Rural Communities, and the Coasts. The inability of the climate models to forecast the future is illustrated by their inability to accurately forecast global temperature trends in the atmosphere (graph on page 1). There is no scientific justification for assuming the models are any better at forecasting other climate trends such as precipitation. Further, regional forecasts greater error than global forecasts. Establishing government policies based on the NCA has no scientific justification. (For the National Assessment see <http://nca2014.globalchange.gov/>.)

Much of the other 89% of the funding, \$19 Billion, goes to government agencies and industries claiming they are preventing global warming/climate change, even though we do not understand the natural causes of climate change and, likely, far overestimate the influence of CO2.

The \$6 Billion for Clean Energy Technologies, \$5 Billion for tax breaks that **may** reduce greenhouse gas emissions, and \$8 billion Cash in Lieu of Tax Breaks – wind farms – serve to build lobbying groups promoting the fear of global warming/climate change.

Without the fear of global warming, there is little justification for much of these \$22.5 Billion in expenditures. No wonder these industries and government bureaucracies supporting them continue to make extreme claims of the consequences of global warming.

Prepared by the Science and Environmental Policy Project (SEPP)
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Contact:
Kenneth Haapala, Executive Vice President
Ken@SEPP.org

