



May 21, 2009

RE: Docket No. EPA-HQ-OAR-2009-0171

Ms. Lisa P. Jackson, Administrator
Environmental Protection Agency
Mailcode 6102T
ATTN: Docket ID No. EPA-HQ-OAR-2009-0171
1200 Pennsylvania Ave., NW
Washington, DC 20460

Dear Ms. Jackson:

Thank you for this opportunity to comment on the Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act (FR "Environmental Protection Agency", April 24, 2009, pp. 18889-18910).

I am Professor of Economics and Finance at the Ohio State University. In addition to numerous papers on economics, including several on the "fat tailed" distributions mentioned in footnote 28 of the Proposed Rule, I have published two peer-reviewed papers and three major internet posts on Climate Science, and personally surveyed two USHCN surface stations as part of the Surface Stations project. See my webpage <www.econ.ohio-state.edu/jhm/AGW/> for details. The views expressed herein are my own, and in no way reflect the position of the Ohio State University or its Departments of Economics or Finance.

I oppose the proposed finding of Carbon Dioxide to be a danger to public health and welfare, on the grounds that the science is far from settled. Although an influential clique of scientists associated with the UN's Intergovernmental Panel on Climate Change (IPCC) purport to constitute a "consensus" on this matter, many courageous climate scientists do not accept their conclusions, despite the personal and professional defamation their dissent has brought upon them from the self-styled "consensus" group.

Noteworthy in this respect are Dr. Fred Singer, first director of the US Weather Satellite program and Professor Emeritus from the University of Virginia, Prof. Richard Lindzen of MIT, weather satellite experts Profs. Roy Spencer and John Christy of the University of Alabama, Huntsville, Prof. Roger Pielke, Sr., of University of Colorado CERES, my Ohio State University colleague Prof. Robert Essenhigh, and IPCC AR4 expert reviewers Stephen McIntyre of <ClimateAudit.org> and Prof. Ross McKittrick of the University of Guelph. More than 100 similarly-minded climate scientists signed a letter published March 30 in the *New York Times*. (See <http://www.cato.org/special/climatechange/cato_climate.pdf> for list.)

I particularly commend to your attention “Nature, Not Human Activity, Rules the Climate,” by the Nongovernmental International Panel on Climate Change (NIPCC), a project of the Science and Environmental Policy Project (<sepp.org>), directed by Dr. Fred Singer (Heartland Institute, 2008).

The following are specific comments on the assertions made in the Proposed Rule, in the order of the “key points” that appear in your “Summary of the Science Supporting EPA’s Finding that Greenhouse Gases Threaten Public Health and Welfare.”

To begin with the Summary’s first key point about climate change, any reader of your “Summary of the Science” or the IPCC’s AR4 WG1 “Summary for Policy Makers” would be astonished to learn that water vapor is the primary Greenhouse Gas (GHG), and that CO₂ is only a distant second. You do commendably acknowledge the primacy of water vapor back in section III.B.4.a of the Proposed Rule, but even then do not mention that the effect of GHGs is not additive, but exponentially diminishes as a function of *all* GHGs together. Water vapor has already saturated most of the relevant frequencies, and baseline CO₂ has already saturated most of the “window” frequencies missed by water vapor, so that even a doubling of baseline CO₂ would make only a small marginal contribution to the total GHG effect. Any small warming directly caused by increasing CO₂ will cause some increase in water vapor, but this will have only a tiny marginal GHG effect, probably more than completely offset by the increase in vertical heat transfer caused by the water cycle, plus increased albedo from clouds and perhaps even snowfall.

Regarding your second key point, although it is indeed plausible that some, or even most, of the observed increase in CO₂ in the past 60 years is due to human burning of fossil fuel, it is also indisputable that cold oceans hold more CO₂ than warm oceans, and that the globe has been warming, for whatever reason. It is therefore equally plausible that increasing CO₂ is caused by warming, rather than the other way around. Your Proposed Rule makes no recognition of this possibility, which has been stressed by Dr. Robert Essenhigh in his publications.

In any event, the pattern of warming trends as a function of altitude predicted by GHG models do not match the observed pattern. As the NIPCC report cited above points out (p. 7), “This mismatch of observed and calculated fingerprints clearly falsifies the hypothesis of anthropogenic global warming (AGW). We must conclude therefore that ... the current warming ... is mainly of natural origin.”

As for your third key point, it true that 20th century temperatures have generally been warmer than during the late 19th, and that the past two decades have been warm relative to the 20th century average. However, there are two problems with this: First, as shown by Craig Loehle and myself (*Energy and Environment* 2008), an average of 18 peer-reviewed bimillennial temperature proxy series from around the world, each calibrated to temperature by its author, demonstrates a statistically significant global Medieval Warm Period (MWP) comparable to the current warm period during the 9th, 10th, and 11th centuries, plus a statistically significant Little Ice Age (LIA) during the 15th-18th

centuries. Temperatures remained cool, relative to the bimillennial average, through the 19th and into the early 20th century. The low frequency reconstruction by Moberg et al (*Nature* 2005) already showed a very similar temperature history, but was based on only 9 such proxies.

The IPCC has attempted to deny the LIA and especially the MWP with the discredited “Hockey Stick” temperature reconstruction of Mann et al (1998, 1999). However, IPCC AR4 reviewers McIntyre and McKittrick (*Energy and Environment* 2003, *Geophysical Research Letters* 2005, *EE* 2005) have demonstrated that it is based on the unacceptable use of “stripbark” trees undergoing a post-traumatic growth spurt, in combination with faulty use of Principal Components Analysis.

The second problem with your third key point is that the instrumental surface record surely overstates actual 20th century warming. In this respect, see “Is the Surface Temperature Record Reliable?” by Anthony Watts of <SurfaceStations.org> (Heartland Institute 2009, <www.heartland.org>). He and his team of volunteers have demonstrated that most of the US Historical Climate Network weather stations, used by NOAA and CDIAC to construct US historical temperature averages, are inadequately sited according to NOAA’s own standards. Many of them are too close to artificial heat sources, such as buildings, parking lots, streets, and air conditioning units.

I can personally vouch for the two central Ohio sites I surveyed for Watts’ project. Both of these surveys are linked at <www.econ.ohio-state.edu/jhm/AGW/>. I found that the Circleville OH MMTS sensor had black material on it which can only have increased the measured temperature as it built up since installation of the MMTS in 1987. The CDIAC/USHCN record for Delaware OH shows a warming trend extending to 2006, but examination of the daily record shows that the last actual reading there was on January 31, 2001, so that the entire CDIAC/USHCN monthly record from then on is a fabrication.

With data like this in the US, which has one of the best weather reporting networks in the world, global temperature indices can only be worse. The GISSTEMP and HadCRU global indices, for example, use stations the likes of Columbus OH, where I happen to work. Before 1948, Columbus was represented by a series of rooftop locations near the center of the city, where the station underwent substantial Urban Heat Island warming, evident in the declining diurnal Min/Max spread. In 1948 the official station was moved to Port Columbus International Airport, where it has undergone a second round of UHI warming over the past 70 years. With indiscriminate use of stations like this, little credence can be placed on trends derived from these series.

Your fourth key point summarily dismisses solar activity as a non-GHG source of warming, but in fact the supporting Section III.B.4 of the Proposed Rule makes no mention of solar activity at all. As the NIPCC report points out, there is now “overwhelming” evidence of solar influence on climate. Even pro-Anthropogenic Global Warming (AGW) researchers like Dr. Lonnie Thompson of Ohio State University and co-authors take it for granted that solar fluctuations (specifically the Wolf Minimum)

affect temperature to such an extent that they can be used to date oxygen isotope ratio temperature proxies from sites like Kilimanjaro (*Science* 2002).

Most of the sun's effect is now believed to be due to the effect of the solar wind on cloud formation and hence cloud albedo. However, even a small 0.1% increase in solar radiation can directly cause a 0.05% increase in surface temperatures, after taking into account the 1/4 power in the Stefan-Boltzman law, plus the approximate energy doubling already caused by the natural GHG effect. Since global temperatures are approximately 287 degrees K, a 0.05% increase is 0.14 degrees C. This is small, but a non-negligible portion of the approximately 0.5 degrees C increase in the (overstated) global indices since 1940. Furthermore, this natural solar effect could easily be amplified by reductions in snow albedo caused by earlier melts and later coverage.

Your fifth key point projects GHG warming into the 21st century. It should be remembered, however, that humans are quickly exhausting the readily-extractable sources of fossil fuel, so that CO₂ emissions are bound to decrease soon, even if no action is taken. Existing CO₂ can then be expected to diminish, as it is washed down into the oceans by rain and absorbed by biomass. The NASA Carbon Cycle diagram at earthobservatory.nasa.gov/Library/CarbonCycle/carbon_cycle.html shows that there is 12% annual exchange between the atmosphere and the surface ocean alone. The surface ocean has limited CO₂ capacity, but it in turn has a 10% annual exchange rate with the almost unlimited deep ocean. These figures suggest a half life of at most 20 years, contrary to the projections of centuries or even millenia in Section III.C.2 of the Proposed Rule.

Your sixth key point warns against both increased rainfall and droughts from warming, as does Section III.C.1 of the Proposed Rule. Which is it? There is no particular reason to suppose that these will be more severe when they do occur than in the past.

The sixth key point also mentions rising sea levels. However, as Figures 17 in the NIPCC report cited above indicates, sea levels have been rising ever since the last Ice Age, and fairly steadily at about 8 cm/century over the last 8000 years. Figure 18 in that report shows that the rate has been a little higher (about 12.5 cm/century) in the 20th century, but has not been accelerating since the rapid increase in CO₂ began in mid-century. Section III.C.1 in the Proposed Rule points out that sea level rise along the US eastern seaboard has been higher than the global average due to coastal subsidence. But surely CO₂ has no effect on land subsidence.

Your seventh key point relates to Section II.C.2 of the Proposed Rule, which alludes to "the risk that hurricanes are likely to become more severe with climate change, ... in light of our heightened awareness about how vulnerable the U.S. Gulf Coast can be." This is an obvious reference to the Hurricane Katrina. However, Level 5 hurricanes like Katrina are nothing new. What is new is the US government's policy of encouraging half a million people to live below sea level behind what turned out to be a Level 3 levee, combined with the 90-year-old policy of diverting the Mississippi River's flow directly to the continental shelf so that it cannot form a natural delta. To the extent that the tragic

events of 2005 were human in origin, they were caused by decades of bad policies from Washington, and not by GHG emissions.

The second and third sections of the "Summary of the Science..." covers many of these same points. However, it should be noted that diseases vary with climate. As climate changes, diseases will undoubtedly change, but there is no reason to think there will be a net change for the worse.

Section III.C.1 actually mentions stimulated growth of crops as one of the adverse effects of increased warming and CO₂. Indeed, CO₂ is the primary form of plant food, and a warmer climate will make vast tracks of North America and Eurasia more productive and habitable than at present. It is difficult to see why this should be a problem.

Finally, as for footnote 28 of the Proposed Rule, relating to the impact of "fat tailed" distributions on expected utility, I show in my "Financial Applications of Stable Distributions" in Volume 14 of the *Handbook of Statistics* (1996) that even an infinite variance stable distribution for log asset values is consistent with finite values for options protecting against risk in either tail of the distribution. Weitzman's projection of "astronomical" values is therefore unwarranted.

In conclusion, I believe the Proposed Rule is unwarranted by the science, and will constitute an unnecessary and ruinously expensive imposition on the US economy.

Thank you in advance for considering my views.

Sincerely yours,



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