

Select Committee on Energy Independence and Global Warming
“Climate Science in the Political Arena”

Thursday May 20, 2010

9:00am

1334 Longworth House Office Building

Questions for the Record

Dr. Ralph Cicerone Questions:

- 1) Did the panel report on “Advancing the Science of Climate Change” consider the works of scientists skeptical of the view that the earth is warming because of human activity?
- 2) You’re aware of the Climategate scandal which has cast a shadow on the integrity of the data from CRU. Similarly, concerns exist about data from NASA’s GISS. For example, according to a recent article in *American Spectator*:
 - Dr. Reto Ruedy of GISS admits in an email that “[The United States Historical Climate Network] data are not routinely kept up-to-date.”
 - In another email, he reveals that NASA had inflated its temperature data since 2000 on a questionable basis. “[NASA's] assumption that the adjustments made the older data consistent with future data... may not have been correct,” he says. “Indeed, in 490 of the 1057 stations the USHCN data were up to 1C colder than the corresponding GHCN data, in 77 stations the data were the same, and in the remaining 490 stations the USHCN data were warmer than the GHCN data.”

Do these revelations give you pause about the quality of the data from the above mentioned institutions?

- 3) You speak highly of assessment reports, such as those put out by the IPCC.
 - Are you concerned about the errors in the 4th assessment?
 - Do you think the IAC review of the IPCC procedures is justified?
- 4) What is the ideal level of atmospheric CO₂? The current level of 385 ppm, the pre-industrial level of 280 ppm, the 1000 ppm used in many greenhouses to enhance plant vigor?

- 5) If CO2 levels could be stabilized by massive changes in the world's economy, would this stop further climate change?
- 6) A March 4, 2010 e-mail (see below) from Professor Trevor Davies, Pro Vice-Chancellor of Research, Enterprise & Engagement, of the UK's University of East Anglia, to UK government Chief Scientist John Beddington, was obtained through a freedom of information request and is now available on the web.

It states that Martin Rees, President of the UK Royal Society, was asking you to approach the two American members of the Oxburgh Panel that was to investigate the University of East Anglia in the aftermath of the release of the Climategate - Kerry Emanuel of MIT and Lisa Graumlich of the University of Arizona - to "warm them up," while Davies asked Beddington to "warm up" David Hand, another panel member.

The Oxburgh Panel was supposed to be providing an independent appraisal and I find the idea that panel members were contacted ("warmed up") by presidents of their respective National Academies and the UK government Chief Scientist disturbing.

- Did you indeed contact Drs. Emanuel and Graumlich?
- If so, what was nature of those contacts?

From Trevor Davies

To: Beddington

Re CRU Science Assessment Panel

Dear John

As you know Ron Oxburgh has agreed to do this. Thank you for the initial suggestion! He has cleared April 6/7/8 in his diary for a 2-day session at UEA, and anticipates writing the report on the last day.

We have a list of 12/13 names, approved by the Royal Soc, covering a range of interests and "attitudes" toward global warming. Ron has decided the first we should approach for his panel of 6-7 are (xxxxxx- expurgated- xxxxx Michael Kelly; Herbert Huppert mathematician Cambridge, David Hand FBA Imperial; Kerry Emanuel meteorologist MIT, Huw Davies ETH Zurich; Lisa Graumlich, tre ring analyst Univ Arizona

Ron is keen that they are "warmed up" by influential people rather than us inviting them cold. Martin Rees is asking Ralph Cicerone (President NAS) to approach the Americans, Brian Hoskins will approach Huw Davies, Ron himself is talking to Kelly and Huppert.

I wonder if you would be prepared to "warm up" David Hand – on the basis that you know him and you suggested him!

We are most keen, if at all possible, that we can hit the April 6/7/8 window and I'm sure you will be very persuasive in convincing him that this is an important job for science, etc.

For background I attach 1) a draft letter which will be sent to David by Ron 2) a list of the papers we anticipate will be examined

David's contact details are 😊xxx
If you are able to help, I will be very grateful.
Best, Trevor

<http://climateaudit.org/2010/05/19/warming-up-the-oxburgh-inquiry/>

Dr. Mario Molina Questions:

- 1) You have served as an author of the IPCC 4th assessment, which has received considerable attention lately for errors identified in that body of work; you are also the only person of the 12-member review committee established by the UN to evaluate the procedures and processes of the IPCC. Given your close association with the IPCC report, please explain to this panel how you expect to participate in this review in a fair and impartial manner?
- 2) Do you believe the IPCC's 4th assessment included errors?
 - What procedural flaws do you believe led to those errors?
- 3) At the InterAcademy Council hearing in May, IPCC Chairman Rajendra Pachauri defended the use of grey literature (non peer-reviewed materials) as part of the scientific record on climate change.
 - Do you agree with him?
 - Should unproven science from such grey literature be allowed in IPCC reports?
- 4) Your testimony describes potentially catastrophic changes to the Earth's climate system if certain "tipping points" such as temperature increases of 8 to 10 degrees Fahrenheit are reached; in your opinion, what is the likelihood of that occurring if the world continues business as usual practices?
- 5) Given the failures of the Kyoto Protocol and the recent climate change talks in Copenhagen, what suggestions do you have to require the GLOBAL community – particularly nations like India and China - to participate in CO2 reducing schemes?
- 6) What is the ideal level of atmospheric CO2? The current level of 385 ppm, the pre-industrial level of 280 ppm, the 1000 ppm used in many greenhouses to enhance plant vigor?
- 7) If CO2 levels could be stabilized by massive changes in the world's economy, would this stop further climate change?

Dr. Stephen Schneider Questions:

- 1) How comfortable are you with today's climate models being able to accurately predict future climate trends?

- Have these models been successful at identifying the causes of previous historical warming and cooling trends?
 - How confident are you that today's models accurately simulate the role of water vapor and clouds, and their interaction with CO₂?
- 2) In the 1970s, you expressed concern about global cooling – what made you change your mind?
 - 3) You conclude your testimony with the point that had we begun mitigation and adaptation investments decades ago, we would be in a better position now. But a few decades ago, you argued that the earth was entering a cooling period. Were you making the same suggestions then as you are now?
 - 4) What is the ideal level of atmospheric CO₂? The current level of 385 ppm, the pre-industrial level of 280 ppm, the 1000 ppm used in many greenhouses to enhance plant vigor?
 - 5) If CO₂ levels could be stabilized by massive changes in the world's economy would this stop further climate change?

Dr. Ben Santer Questions:

- 1) As recently as March 2009, you responded to an e-mail from Phil Jones - where he complains about a dispute with the editor of a magazine published by the Royal Meteorological Society – by telling him that you will not submit any papers to a journal that requires you to make your raw data available.
 - Why?

At 16:48 19/03/2009, you wrote:

Thanks, Phil. The stuff on the website is awful. I'm really sorry you have to deal with that kind of crap. If the RMS is going to require authors to make ALL data available - raw data PLUS results from all intermediate calculations - I will not submit any further papers to RMS journals. Cheers, Ben

<http://www.eastangliaemails.com/emails.php?eid=967&filename=1237496573.txt>
- 2) As a major player in the Climategate e-mails, have you ever manipulated any data or paper or study in order to fabricate a document that bolstered the argument for human influenced global warming, when in fact that was not true?
- 3) Your testimony notes that you were “privileged to work together with exceptional scientists...like Tom Wigley, Phil Jones, Keith Briffa and Sarah Raper.”
 - Do you disagree with the conduct of any of these scientists exposed in the Climategate emails?

- 4) What is the ideal level of atmospheric CO₂? The current level of 385 ppm, the pre-industrial level of 280 ppm, the 1000 ppm used in many greenhouses to enhance plant vigor?
- 5) If CO₂ levels could be stabilized by massive changes in the world's economy would this stop further climate change?
- 6) Your written testimony includes a little over 5 pages of text and some 3 pages of “References and notes” addressing what you call “The Microwave Sounding Unit Debate,” which alleges that the University of Alabama at Huntsville (UAH) data are suspect and that there is no longer a fundamental discrepancy between modeled and observed estimates of tropospheric temperature changes.

I have listed below 8 papers that have been recently published in peer-reviewed scientific journals - in fact, 5 of them have appeared in 2009 and 2010 - and another in press that attest to the robustness of the UAH results and/or that there is still a fundamental discrepancy between modeled and observed estimates of tropospheric temperature changes.

- How would you respond?

List:

1. Christy, J.R. and W.B. Norris, 2006: Satellite and VIZ-Radiosonde intercomparisons for diagnosis on non-climatic influences. *J. Atmos. Oc. Tech.*, 23, 1181 – 1194. — Demonstrates in two, independent methods a spurious warming in RSS data and that UAH data have lower error statistics than RSS.
2. Christy, J. R., W. B. Norris, R. W. Spencer, and J. J. Hnilo, 2007: Tropospheric temperature change since 1979 from tropical radiosonde and satellite measurements, *J. Geophys. Res.*, 112, D06102, doi:10.1029/2005JD006881. — Demonstrates that in the tropics the tropospheric temperatures do not warm at a rate indicated by models using all radiosondes (both uncorrected and then corrected). Also, using balloon data and surface data, a clear spurious warming is indicated in RSS tropical tropospheric temperature data.
3. Sakamoto, M. and J.R. Christy, 2009: The influences of TOVS radiance assimilation on temperature and moisture tendencies in JRA-25 and ERA-40. *J. Atmos. Oc. Tech.*, doi:10.1175/2009JTECHA1193.1. Shows that the reference dataset (ERA-40) utilized by one set of balloon adjustments contains a spurious warming due to contamination by the Mt. Pinatubo. This means this balloon dataset, used by Santer et al. 2008, is spuriously too warm. The European Centre has since corrected this reference dataset so that its trend is the same as that from UAH data in the tropics.
4. Randall, R.M. and B.M. Herman, 2008: Using limited time period trends as a means to determine attribution of discrepancies in microwave sounding unit-derived tropospheric temperature time series. *J. Geophys. Res.* 113, doi:10.1029/2007JD008864. Demonstrates by comparing the relationship between different satellite layers from the

same sources that RSS data contain a spurious warming in the lower tropical troposphere while UAH data match the relationship determined by balloons — a relationship that remains stable through time.

5. Bengtsson, L. and K.I. Hodges, 2010: On the evaluation of temperature trends in the troposphere. Climatic Change. Demonstrates that the new European analysis agrees with UAH tropospheric trends and that RSS data experienced a spurious warming in the tropics as found in papers above (but this is determined by an independent dataset.)
6. Christy, J.R. and W.B. Norris, 2009: Discontinuity issues with radiosondes and satellite temperatures in the Australian region 1979-2006. J. Atmos. Oc. Tech., 26, 508-522, DOI: 10.1175/2008JTECHA1126.1 Using Australian balloons, this study again shows low error characteristics for UAH data and higher error characteristics for RSS and NOAA-STAR satellite data.
7. Klotzbach, P. J., R. A. Pielke Sr., R. A. Pielke Jr., J. R. Christy, and R. T. McNider (2010), Correction to “An alternative explanation for differential temperature trends at the surface and in the lower troposphere”, J. Geophys. Res., 115, D01107, doi:10.1029/2009JD013655.
8. Klotzbach, P. J., R. A. Pielke Sr., R. A. Pielke Jr., J. R. Christy, and R. T. McNider (2009), An alternative explanation for differential temperature trends at the surface and in the lower troposphere, J. Geophys. Res., 114, D21102, doi:10.1029/2009JD011841. Demonstrates using both UAH and RSS data that the relationship between the surface and tropospheric temperatures in observations is significantly different than that of climate models.
9. Christy, J.R., R.W. Spencer and W.B. Norris, 2010: *The role of remote sensing in monitoring global bulk tropospheric temperatures. Int. J. Remote Sensing, (in press). Analyzes the three satellite datasets in an update of studies above and shows that UAH contains the lowest error characteristics with RSS and NOAA-STAR showing high error characteristics, including spurious warming in the 1990s. Also points out that the relationship between the surface and troposphere is significantly different between models and observations.*

Dr. William Happer Questions:

- 1) What is the cause and effect relationship between increased levels of CO₂ in the atmosphere and the earth's temperature changes?
- 2) To what extent does CO₂ lead to global warming?
- 3) Is EPA right to classify CO₂ as a pollutant?
- 4) What empirical data do we have to prove the human impact on climate warming?

- 5) Does the climate science record support the implementation of economically expensive proposals like cap and trade as a solution to global warming?
- 6) Have you ever been discriminated against or felt pressure because of your scientific opinion on global warming? Do you believe that grant money favors scientists who exaggerate the effects of global warming?