



PARLIAMENT OF AUSTRALIA  
HOUSE OF REPRESENTATIVES

**THE HON DANNA VALE MP**  
FEDERAL MEMBER FOR HUGHES



16 March 2010

Senator the Hon Kim Carr  
Minister for Innovation, Industry, Science and Research  
Parliament House  
CANBERRA ACT 2600

Dear Minister, *Kim*

**RE: CSIRO FEBRUARY 2010 ANALYSIS PAPER**

Further to my letters of 15 March 2010 and 14 December 2009, I would be grateful if you could obtain further details for me on some matters relating to the CSIRO's February 2010 'analysis paper'.

I would like to provide a considered response to the CSIRO's 'analysis paper' and these further matters in due course.

Both Paltridge et al. and Wentz et al. anticipated the purported testable, hard science rebuttals set out in the CSIRO's 'analysis paper'. Both teams of scientists included anticipatory counter-rebuttals in their respective research papers. The CSIRO's 'analysis paper' did not have any new science. Consequently it appears that the CSIRO and indeed the whole of the global warming scientific community have made no progress in the last year (Paltridge) and three years (Wentz). Not only is the CSIRO unable to prove that the empirical discoveries made by Paltridge et al. and Wentz et al. respectively are false, it is not even able to provide testable, hard science responses to those authors' anticipatory counter-rebuttals. It is therefore of great concern that the CSIRO is still using its structurally unsound GCM to provide exaggerated forecasts of catastrophic anthropogenic global warming.

Many of the matters raised specifically below were also raised in my letter to you of 14 December 2009 and, as noted above, in the research papers by Paltridge et al. and Wentz et al.



Shop 1, 9-15 East Parade, Sutherland 2232  
Tel: (02) 9521 6262 Fax: (02) 9545 0927  
Email: [danna.vale.mp@aph.gov.au](mailto:danna.vale.mp@aph.gov.au) Web: [www.dannavale.com.au](http://www.dannavale.com.au)  
PO Box 1014, Sutherland, NSW 1499

Parliament House, Canberra 2600  
Tel: (02) 6277 4866  
Fax: (02) 6277 8555

### **Paltridge et al. 2009**

1. The tropopause which marks the transition from the troposphere to the stratosphere typically occurs at an altitude of 17 km (mid-latitudes) to 20 km (tropics) and 7 km (polar). Paltridge used radiosonde data only from the tropics and mid-latitudes and from below 8 km.

In their 'analysis paper' (page 1) the CSIRO refers to "the lower 1-2 kilometres of the troposphere". The CSIRO goes on to say "Paltridge et al. find a decreasing trend in humidity in the upper troposphere".

Question:- In referring to Paltridge's empirical discovery does the CSIRO use the term "upper troposphere" to refer to all of the troposphere from 1-2 km to 17-20 km or to just the upper half of the troposphere above say 8 km?

The CSIRO says further on "Many studies.....have concluded that radiosonde data are highly uncertain in the upper troposphere".

Question:- In referring to the above conclusions does the CSIRO use the term "upper troposphere" to refer to all of the troposphere from 1-2 km to 17-20 km or to just the upper half of the troposphere above say 8 km?

2. In their paper Paltridge et al. make the point that while some radiosonde humidity readings are unreliable a sub-set of radiosonde humidity readings is reliable. Paltridge et al. then evaluate all radiosonde humidity readings and restrict their analysis to a sub-set of radiosonde readings that they have determined to be reliable.

Question:- What reasons does the CSIRO have for concluding that the sub-set of radiosonde readings used by Paltridge et al. is unreliable?

3. In their paper Paltridge et al. make the point that based on climate theory an increase in CO<sub>2</sub> and global temperature will cause the long term trend increase in the temperature of the troposphere, around the height of the convective boundary layer, to be greater than the long term trend increase in temperature of the lower levels.

Question:- Does the CSIRO/BoM GCM comply with this theory?

4. In their paper Paltridge et al. find the NCEP data shows the long term trend increase in the temperature of the troposphere, around the height of the convective boundary layer, is in fact greater than the long term trend increase in the temperature of the lower levels.

Question:- Does the CSIRO/BoM accept these real world observations?

Question:- Does the CSIRO/BoM GCM comply with these real world observations?

5. The finding referred to in No. 4 above holds for the tropics, northern mid-latitudes and southern mid-latitudes.

Question:- Does the CSIRO have an explanation for why these three sub-sets of what the CSIRO may deem to be unreliable radiosonde data, separated as they are by geography, gave trends which were consistent for all three sub-sets and were also in accordance with climate theory?

6. In their paper Paltridge et al. make the point that based on climate theory the greater long term trend increase in temperature around the height of the convective boundary layer "implies a tendency for the upward flux of water vapor through the top of the layer into the middle troposphere to be reduced."  
Question:- Does the CSIRO/BoM GCM comply with this theory?

7. Paltridge et al. (Fig. 4) shows that for a number of standard pressure levels, above the convective boundary layer, the NCEP data shows a negative long term trend in relative humidity for the tropics, northern mid-latitudes and southern mid-latitudes.

Question:- Does the CSIRO have an explanation for why these many subsets of what the CSIRO deems to be unreliable radiosonde data, separated as they are by geography, gave trends which were consistent and were also in accordance with climate theory?

8. The CSIRO says that "the theory continues to be consistent with other peer reviewed observational evidence."

Question:- Is the "other peer reviewed observational evidence" relating to long term trends in the amount of water vapour, above the convective boundary layer, limited to satellite data?

#### Wentz et al. 2007

9. Generally, the major GCMs do not use a scientific simulation to predict precipitation. Rather they predict precipitation using a computer modelling technique known as parameterisation. In parameterisation, model users set up equations which incorporate control values known as parameters. These parameters determine the predictions of precipitation made by their GCM. So then it is up to the model user to choose which set of equations and which set of parameters gives the most reasonable or useful result.

Question:- Does the CSIRO follow general practice and use parameterisation rather than scientific simulation to predict precipitation?

10. The CSIRO notes Liepert & Previdi opine that "global precipitation changes in a given 20-year period may not be representative of the changes that will occur on longer time scales."

Wentz et al. argue that "although two decades may be too short for extrapolating trends, it may indeed be long enough to indicate the observed scaling relationships will continue on a longer time scale."

The fact that the CSIRO's GCM fails to replicate long term trends in "global precipitation changes" is consistent with it being structurally unsound. But the point has been made previously that this is not the reason it is structurally unsound. It is structurally unsound because it has built into it the assumption that precipitation increases and decreases by only one quarter of the percentage increases and decreases in atmospheric water vapour. In

contrast, Wentz et al. note "Of significance is the fact that E, P and V all exhibit similar magnitudes for interannual variability".

A perusal of the charts in Wentz et al. (Fig. 2) makes apparent the fact that evaporation, precipitation and atmospheric water vapour not only increase, but also decrease by about the same percentage and this interannual relationship is proved repeatedly over the 20-year period of the study.

Question:- What scientific explanation does the CSIRO have for the fact that Wentz et al. showed the major GCMs replicated the direction of the interannual increases and decreases in precipitation, but calculated the magnitude of GCM increases and decreases to be only a small fraction of the real world interannual increases and decreases?

Question:- What empirical evidence is there, which gives the CSIRO a scientific basis for its certainty (it has left its GCM unchanged) that over the next say 20-years the magnitudes of the interannual increases and decreases in evaporation and precipitation will be only around one quarter of the interannual increases and decreases in atmospheric water vapour?

11. The CSIRO says " it is now well established that this discrepancy arises from the fact that the global water cycle is constrained by the atmospheric energy balance ". However, Wentz et al. discovered and Liepert & Previdi confirmed real world data has shown repeatedly that the above "discrepancy" does not exist in the real world because " E, P and V all exhibit similar magnitudes for interannual variability".

Question:- What empirical evidence does the CSIRO have which shows that the global water cycle is constrained so that percentage increases and decreases in evaporation per 1°C increase or decrease in temperature are only **one quarter** of the increases and decreases in atmospheric water vapour?

12. It was well established a long time before the first major GCM was built that the huge amount of energy transferred mainly (86%) from the oceans to the atmosphere by evaporation provides the majority of the energy needed to drive the global weather system, which transports warm moisture laden air to colder altitudes and geographic regions, where precipitation takes place (the global water cycle). Therefore the global water cycle is fundamentally constrained by the amount of evaporation taking place, which is itself driven mainly by sea surface temperatures, and the atmosphere adjusts in consequence to achieve energy balance.

Question:- Does the CSIRO accept that the empirical discovery made by Paltridge et al. (2009), once accepted, would provide one obvious means by which the atmosphere does in fact adjust to achieve energy balance?

13. A 6°C increase in temperature will cause atmospheric moisture to increase by around 40% (6.5% x 6). The major GCMs typically predict that this will cause precipitation to increase by only around 10% (1.7% x 6). Simple mathematics shows that for this discrepancy to hold true the average time taken for the

global weather system to transport warm moisture laden air from the point of evaporation to the point of precipitation would have to increase by around 25% (10.5-days to 13-days). Following a 6°C increase in temperature the amount of sensible heat, latent heat and radiative energy delivered into the global weather system would increase very substantially. It therefore seems highly implausible that following a 6°C increase in temperature in the real world the global weather system would slow down by a **huge 25%**. In fact Wentz et al. noted that as global temperatures increased by 0.2°C per decade "ocean winds exhibited a small increase of 1.0% decade<sup>-1</sup>" (1% per decade).

Question:- What explanation does the CSIRO have, in a scenario where a very substantial amount of additional energy is being fed into our energy powered global weather system, for it slowing down by a **huge 25%**?

Question:- What empirical evidence does the CSIRO have, which shows that a warming trend causes the global weather system to slow down?

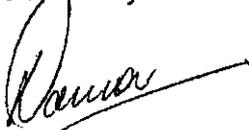
14. A GCM which has been set up to constrain the increase in evaporation to say 1.7% per 1°C rise in temperature might predict that a doubling of CO<sub>2</sub> would lead to a 3°C to 6°C increase in temperature. The Wentz empirical discovery implies that such an increase in temperature would require prodigious (approx. 15 to 30 Watts per square metre) amounts of energy to be transferred mainly from the oceans to the atmosphere and hence pose oceanic and atmospheric energy balance issues.

However, a GCM which complies with the Paltridge and Wentz empirical discoveries will forecast a barely perceptible temperature increase of 0.2°C to 0.5°C spread over a century. This would require only 1.0 to 2.5 Watts per square metre in additional latent heat of vapourisation to be transferred to the atmosphere.

Question:- Is the CSIRO able to explain how this level of transfer of energy would be constrained by energy balance limits?

I trust that you will obtain and forward the CSIRO's response to these matters well before the Rudd government presses on in May with its ill conceived attempt to foist its disastrous CPRS legislation on the people of Australia.

Yours faithfully



**DANNA VALE MP**  
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