Senate Select Committee on Climate Policy

Submission by Robert Carl Williams

15 April 2009

Summary

1. Contrary to the unequivocal statements by politicians, journalists and others, about how human activity has caused the earth to warm, all of the findings relevant to the role of human activity set out in the "Summary for Policymakers" from the IPCC's latest report ("the Report") are qualified, and acknowledge the real possibility that its findings concerning human-caused global warming, the projections for the future, and the underlying science might be wrong.

2. Since the release of the Report, at least four apparently separate lines of research or reports, have challenged or directly contradicted the Report's findings and projections, or shown that the are wrong.

3. The lines of research to which the Committee's attention is drawn, are, in brief

(i) ***NASA satellite observations strongly suggest that the climate system is much less sensitive to increasing concentrations of carbon dioxide than is claimed by the IPCC, and is dominated by negative feedbacks rather than positive feedbacks displayed by all twenty of its models. Accordingly, increase in carbon dioxide concentration cannot account for most of the observed warming in the last 100 years. The models show, with satellite determined sensitivity, that a doubling of the carbon dioxide concentration would result in a temperature rise by 2100 of only a fraction of a degree. This research has not been rebutted, and other researchers have also reported that there is no net positive feedback.***

(ii) ***The "hot spot' in the atmosphere that the IPCC Report says is a distinctive "signature" of warming caused by greenhouse gases, or by the combination of causes attributed by the IPCC, was not present in the relevant observations of warming in the period from about 1975 to 2000 and therefore the emissions of carbon dioxide were not a significant contributor to global warming in that period. The result of this is that the IPCC's findings on the role of carbon dioxide in warming are wrong,***

This reporting of fact, is decisive, and is not dependent on any further research.

(iii) ***Natural causes, principally the influence of natural cycles, or solar activity, or both, account for most of the warming, and some researchers predict 30 or so years of cooling trend from the early 2000s, directly contradicting the Report's prediction of warming in each of the next two decades. Satellites have observed actual cooling trend since at least 2001/2. A summary in the report of Chinese research, in English, attributes most of the warming since 1882 to natural cycles and states:***

"Even though the CO2 greenhouse effect on global climate change is unsuspicious, it could have been excessively exaggerated. It is high time to reconsider the trend of global climate changes".

The passage of time will determine if this is valid.

(iv) ***Dipl. Biol. Ernst-Georg Beck has challenged the IPCC's rejection of most of the 90,000 accurate measurements of carbon dioxide concentration by chemical methods in the northern hemisphere over the 180 years back from 1957. These had been taken for other scientific purposes, including by a number of Nobel Prize winners. The IPCC has instead adopted determinations from ice cores from Antarctica, claiming a base of 280 ppm in pre-industrial times. Beck states that there is no exponential rising since pre-industrial times as the IPCC claims, but a varying concentration following the climate. The average for the 19th century is 321 ppm, and for the 20th century, 338 ppm with a maximum of at least 420 ppm around 1940, and another maximum of about 370 ppm around 1875.***

Dr Jaworowski challenges the validity of ice core determinations of CO2, and in addition alleges manipulation of the data in order to set a falsely low pre-industrial average of 280 ppm.

This seriously challenges the foundation fact of the IPCC's hypothesis, and requires transparent investigation.

4. Each of these challenges, unless rebutted, is fatal to the IPCC's hypothesis that most of the observed warming has been caused by human activity, principally the release of carbon dioxide emissions through the burning of fossil fuels. For the IPCC's hypothesis and models to be "right", all four lots of research results have to be rebutted. None has.

5. It is therefore appropriate to conclude that, unless all of the above research is rebutted, the Report's findings on the role of human–caused emissions to global warming, its models, and its projections for the future are wrong, and, the case for introducing an Emissions Ttrading Scheme based on them, has collapsed.

6. If the IPCC's findings, models and projections are wrong, there is no case to apply "the precautionary principle" on the basis that they might be right.

7. Likewise, if they are wrong, they, and other forecasts based on them, do not result in a satisfactory basis for any cost/benefit analysis of the costs of mitigation versus the costs of adaptation to that part of future climate change that may be able to be avoided. An ETS is not neutral. If not justified, it weakens Australia's ability to adapt.

8. Objectively, from the Chinese Government's viewpoint, the case has collapsed, and it is in a position to exploit those governments which seek to curb their emissions.

9. Its Government would have no reason to ignore its own research, entirely consistent with U.S. and other research, all based on actual observations, just because the Australian Government, and other Governments, choose to ignore it.

10. If the Australian Government, or any Government, chooses to ignore the reported research and introduces an ETS in any form, and puts a cost on its industries, there is no basis for thinking the Chinese Government would follow. It would be quite justified in simply accepting the benefit to its industries, and "laughing all the way to the bank".

11. It would amount to handing China an economic benefit on a plate, for no discernible benefit to controlling the climate.

12. It is therefore submitted that the proposed Emissions Trading Scheme is in China's national interest, not Australia's.

13. Objectively, if the governments of developed nations are determined to curb emissions, it is reasonable to assume that the Chinese government would seek to maximise the benefit to it, by maximising the costs on those nations' industries, while avoiding or minimising any costs on its own.

There are implications from this, for regional economic and military security.

14. It is submitted that the Committee should recommend that the Government withdraw its proposed scheme, and press the IPCC to address the challenges. It is noted that if this does not occur earlier, it is reasonable to assume that they will be addressed in preparing its next assessment report, due in 2014, but based on published research up until mid-2013.

15. There is ample expert opinion that there may be nett benefits from increased carbon dioxide concentration. It is submitted that it is a misuse of language to refer to such emissions as "carbon pollution" in the Parliamentary Record.

16. If the Committee considers that all or part of this submission, that puts a case against any Emissions Trading Scheme based on the IPCC's findings and models, is outside its Terms of Reference, it is respectfully submitted that the Committee should seek an amendment to its Terms of Reference to allow consideration of all of this submission.

Attachments

***Attachment 1**. The IPCC's 2007 4th Assessment Report, Working Group 1, "Summary for Policymakers".*

***Attachment 2** . Testimony by Dr Roy W.Spencer before the (U.S.) Senate Environment and Public Works Committee on 22 July 2008.*
It is submitted that the Committee should accept this testimony as if testified before it.

***Attachment 3**. Report by Dr Roy Spencer, dated 20 October, 2008, titled "Global Warming as a Natural Response to Cloud Changes associated with the Pacific Decadal Oscillation (PDO)"*

***Attachment 4**. Testimony by Prof William Happer to the (U.S.) Senate Environment and Public Works Committee, on 25 February 2009.*
It is submitted that the Committee should accept this testimony as if testified before it.

***Attachment 5** Paper by Dr David Evans, titled "The Missing Hotspot", dated 21 July, 2008.*

***Attachment 6**. The Summary, in English, of 2005 Chinese research, published in January, 2007..*

***Attachment 7**. Paper by Christopher Monckton, dated 21 February 2009 titled "Global Warming is Not Happening".*

***Attachment 8**. Paper by Dipl. Biol. Ernst-Georg Beck, dated 8/2006, titled "180 years accurate CO2 – Gas analysis of Air by Chemical Methods (Short Version)"*

***Attachment 9.** Paper by Zbigniew Jaworowski M.D., Ph. D., D.Sc. published in "Science" 16 March 2007 titled "CO2: The Greatest Scientific Scandal of Our Time"*

***Attachment 10**. Testimony by Prof Patrick J. Michaels to the (U.S.) Subcommittee on Energy and Environment of the Committee on Energy and Commerce. U.S. House of Representatives on 12 February 2009.*
It is submitted that the Committee should accept this testimony as if testified before it.

***Attachment 11.** A selection of graphs illustrating competing theories of global warming*

Senators

I make this submission as a concerned citizen because none of the parties, and no-one in the media, as far as I am aware, has referred to the challenges to the validity of the IPCC's conclusions on the role of human activity in global warming and its models which are the basis for the proposed Emissions Trading Scheme. Details of the challenges are publicly available in print and/or on the Internet, would in the normal course be known to National Governments, and are critical to the informed consideration by the Parliament of whether or not to introduce an Emissions Trading Scheme at this time.

My purpose in making this submission is to draw attention to the fact that, as mind-boggling as the implications are, the case for trying to control the climate by curtailing emissions of carbon dioxide, based on the IPCC Report, is close to collapse, if it has not already done so.

Objectively, from the viewpoint of the Chinese government, it has collapsed, and it is in a position to exploit those governments which seek to curb their emissions.

The issue is not so much whether or not human-induced emissions are contributing to global warming and hence to climate change. The issue is how much or how little the contribution is. This leads to the issue of what can or ought to be done about it, other than to adapt.

The argument that is developed leads to the conclusion that the proposed Emissions Trading Scheme cannot be based on the IPCC's findings and models, and should be withdrawn, pending resolution of the documented unrebutted challenges, based on observations, to the validity of the IPCC's findings, the validity of the models it uses, and the projections on the future course of global warming.

It also leads to the conclusion that the proposed Emissions Trading Scheme is in China's national interest, and not Australia's.

It also leads to the conclusion that no meaningful basis exists for assessing the cost or the benefit of introducing an Emissions Trading Scheme.

Submission.

What the Report actually says on the role of human activities in global warming.

The Report recognises the real possibility that most of the warming that has occurred over the last century might not be due to human-induced emissions, the real possibility that a doubling of the carbon dioxide concentration could result in a temperature rise by 2100 of less than 1.5 degrees, and the real possibility that the science underlying its model projections might not be correct.

The Report also refers to considerable uncertainty in important matters affecting the climate, and to a low level of scientific understanding of a number of the drivers of climate change.

Contrary to the unequivocal statements by politicians, journalists and others, about how human activity has caused the earth to warm, every relevant statement in the Report carries a qualification.

What does the Report say is "settled"?

Page 5: (in red bold) **"Warming of the climate system is unequivocal*".***

This is the only statement that is not qualified, and as statements from experts set out below show, is the extent of the science claimed in the Report to be "settled".

Concerning the role of human activity, the Report states:

Page 3 (in red bold) **There is now "...*very high confidence* (fn 7) that globally averaged net effect of human activities since 1750 has been one of warming, with a radiative forcing of +1.6 [+0.6 to +2.4] (units)" (*original italics*)**

fn 7 **" ... expert judgements on the correctness of the underlying science: *very high confidence* represents at least a 9 out of 10 chance of being correct".**

That is, there is a real possibility that the underlying science is not correct.

Page 10: (in red bold) **"Most of the observed increase in globally averaged temperatures since the mid - 20th century is *very likely* due to the observed increase in anthropogenic greenhouse gas concentrations."** ***(original italics)***

fn 6 on page 3 **" … the assessed likelihood, using expert judgement, of an outcome or result: ... *Very likely* > 90% ..."**

That is, there is a real possibility that the observed warming might not be due to the increased anthropogenic greenhouse gas concentrations.

Since publication of the Summary, Dr Kevin E. Trenberth, Head of the Climate Analysis Section at the U.S. National Centre for Atmospheric Research, an expert on climate models, a lead author of the IPCC Report (his name is on the front page of the Summary), on 4 June 2007, wrote in " Nature" (search "trenberth nature")

> ***"A consensus has emerged that 'warming of the climate system is unequivocal' to quote the …Summary for Policymakers, and the science is convincing that humans are the cause."***
> ***(NB "convincing", not "settled ")***

On 12 February, 2009, Patrick Michaels, Senior Fellow in Environmental Studies, Cato Institute, Research Professor of Environmental Sciences, University of Virginia. an active participant on the IPCC, in testimony (Attachment 10) said:

> ***"With regard to climate, we often assume a common Washington mantra: with regard to global warming, 'the science is settled' … One can say this. 'The science is settled' inasmuch as surface temperatures have increased from the late 1970s. That this is shown in the surface record has not been in dispute, so claiming some finality for such a truism is hardly noteworthy."***

<u>What does the Report actually says about future projections.</u>

Contrary to the unequivocal statements by politicians, journalists and others about the dire consequences if carbon dioxide emissions are not drastically curtailed, every such statement in the Report carries a qualification.

Page 12 (in red bold) **"Analysis of climate models together with constraints from observations enables an assessed *likely* range to be given for climate sensitivity for the first time and provides increased confidence in the understanding of the climate system response to radiative forcing.**

(then, not in bold) **"... the global average surface warming following a doubling of carbon dioxide concentrations is *likely* to be in the range 2 to 4.5 degrees C with a best estimate of about 3 degrees, and is *very unlikely* to be less than 1.5 degrees.** ***"(original italics)***

fn 6 on page 3 "Likely **> 66% ....** ***Very unlikely*** **< 10% ..."**

that is, there is a real possibility, for a doubling of carbon dioxide, it could be less than 1.5 degrees.

<u>What the Report says about scientific uncertainties</u>.

The Report also refers to considerable uncertainty in important matters affecting the climate, and to a low level of scientific understanding of a number of the drivers of climate change.

(In essence, and not referred to in the Report, the most powerful greenhouse gas is water vapour. Carbon dioxide itself is too weak a gas to significantly affect the climate.

It is claimed that its effect is to amplify the effect of water vapour, referred to as "positive feedback". Simplistically, water vapour warms, but if it condenses into clouds, some clouds warm, some clouds reflect sunlight, and cool)..

In particular, the Report states, page 12. **"Water vapour changes represent the largest feedback affecting climate sensitivity ...Cloud feedbacks remain the largest source of uncertainty."**

The Committee's attention is drawn to Fig SPM2 on page 4.

The magnitude of the uncertainty can be gleaned from looking at "Aerosols". Total Aerosols affect the formation of clouds, and the Committee will note the range of uncertainty for "Cloud albedo effect", between the grey space bars, equals the total effect attributed to carbon dioxide at the top of the figure.

(Comment: I assume that, as carbon dioxide is itself a weak greenhouse gas, the forcing attributed to carbon dioxide includes the "positive feed back" that the models assume. The Committee might wish to have other submitters advise on this).

The Committee's attention is drawn to the right-hand column, headed "LOSU" (level of scientific understanding" and will note the number of factors for which the level is other than "high".

Beneath the figure it also states: **Additional forcing factors not included here are considered to have a very low LOSU"**

that is. there are also additional forcing factors of unknown magnitude.

What lead authors of the Report and a former NASA Senior Scientist have since said about the IPCC's models.

The IPCC uses only mathematical models, which, by their nature, assume that their inputs cover all of the factors that affect the climate. Since publication of the Summary, Dr Trenberth, quoted earlier, also wrote:

" ... there are no climate predictions by the IPCC at all. And there never have been. The IPCC instead proffers 'what if' projections of future climate that correspond to certain emission scenarios. There are a number of assumptions that go into these scenarios ... they do not consider many things like the recovery of the ozone layer, for instance, or observed trends in forcing agents. ... None of the models used by the IPCC is initialised to the observed state and none of the climate states in the models corresponds even remotely to the current observed climate. In particular, the state of the oceans, sea ice and soil moisture has no relationship to the observed state in any recent time in any of the IPCC models. There is neither an El Nino sequence nor any Pacific Decadal Oscillation that replicates the recent past; yet these are critical modes of variability that affect Pacific rim countries and beyond. The Atlantic Multidecadal Oscillation, that may depend on thermohaline circulation and thus ocean currents in the Atlantic is not set up to match today's state, but is a critical component of the Atlantic hurricanes and it undoubtedly affects forecasts for the next decade from Brazil to Europe. Moreover, the starting climate state in several of the models may depart significantly from the real climate owing to model errors, and regional climate change is impossible to deal with properly unless the models are initialised. ... (the models) assume linearity which works for global forced variations, but it cannot work for many aspects of climate, especially those related to the water cycle ...

However, the science is not done because we do not have reliable or regional predictions of climate. But we need them. Indeed it is an imperative! So the science is just beginning. Beginning, that is, to face up to the challenge of building a climate information system that tracks the current climate and the agents of change, that initializes models and makes predictions, and that provides useful climate information on many time scales regionally and tailored to many sectoral needs.

We will adapt to climate change. The question is whether it will be planned or not? How disruptive and how much loss of life will there be because we did not adequately plan

for the climate changes that are already occurring?" (I have added the underlining.) (Search "Trenberth Nature" for the full text)

And another lead author Dr James Renwick, frankly said:

"... climate prediction is hard, half of the variability in the climate is not predictable, so we don't expect to do terrifically well." (Search "James Renwick")

Retired senior NASA atmospheric scientist, Dr. John S. Theon, former Chief of the Climate Processes Research Program and former Chief of the Atmospheric Dynamics and Radiation Branch, recently said:

"My own belief concerning anthropogenic climate change is that the models do not realistically simulate the climate system because there are many very important sub-grid scale processes that the models either replicate poorly or completely omit. ... Furthermore, some scientists have manipulated the observed data to justify their model results. In doing so, they neither explain what they have modified in the observations, nor explain how they did it. They have resisted making their work transparent so that it can be replicated independently by other scientists. This is clearly contrary to how science should be done. There is no rational justification for using climate model forecasts to determine public policy."

NSW Greens MLC Lee Rhiannon, reported on ABC Online, said recently " ... no government should ignore the advice of a leading NASA scientist when it comes to how we deal with the challenge of climate change".

<u>Testimony to a U.S. Senate Committee by Dr Spencer, head of the science team running the instruments on a NASA satellite.</u>

Attachment 2 is a copy of the testimony given before a U.S. Senate Committee on 22 July last year by Dr Roy Spencer, ex-NASA, who leads the U.S. Science Team that controls the instruments on a NASA satellite. He stated to that Committee:

"Regarding the currently popular theory that mankind is responsible for global warming, I am very pleased to deliver good news from the front lines of climate change research. Our latest research results ... could have an enormous impact on policy decisions regarding greenhouse gas emissions.

"Despite decades of persistent uncertainty over how sensitive the climate system is to increasing concentrations of carbon dioxide from the burning of fossil fuels, we now have new satellite evidence which strongly suggests that the climate system is much less sensitive than is claimed by the U.N.'s Intergovernmental Panel on Climate Change (IPCC). Another way of saying this is that the real climate appears to be dominated by 'negative feedbacks' -- instead of the 'positive feedbacks' which are displayed by all twenty computerised climate models utilised by the IPCC. ...

"If true, an insensitive climate system would mean that we have we have little to worry about in the way of man-made global warming and associated climate change. ... it would also mean that the warming we have experienced in the last 100 years is mostly natural. Of course, if climate change is mostly natural then it is largely out of our control and is likely to end -- if it has not ended already, since satellite-measured global temperatures have not warmed for at least seven years now." ...

"... in the last several weeks, we have stumbled upon clear and convincing observational evidence of particularly strong negative feedback (low climate sensitivity) from our latest and best satellite instruments. ... we have found a signature of sensitivity so low that it would reduce future global warming projections to below 1 deg,C by the year 2100."

(page 6) " ... other recently published research has also led to the conclusion that the real climate system does not exhibit net positive feedback."

(page 5) "One necessary result of low climate sensitivity is that the radiative forcing from greenhouse gas emissions in the last century is not nearly enough to explain the

upward trend of 0.7 deg.C in the last 100 years. This raises the question of whether there are natural processes at work which have caused most of that warming.

"On this issue, it can be shown with a simple climate model that small cloud fluctuations assumed to occur with two modes of natural climate variability -- the El Nino/La Nina phenomenon (Southern Oscillation) and the Pacific Decadal Oscillation -- can explain 70% of the warming trend since 1900, as well as the nature of that trend: warming until the 1940s, no warming until the 1970s, and resumed warming since then.
...
"While this is not necessarily being presented as the only explanation for most of the warming in the last century, it does illustrate that there are potential explanations for recent warming other than just manmade greenhouse gas emissions. Significantly, this is an issue on which the IPCC has remained almost entirely silent. There has been virtually no published work on the possible role of internal climate variations in the warming of the last century"

That is, Dr Spencer refers to two of the deficiencies in the models, specifically identified by Dr Trenberth, (underlined in the quote above), as being able to account for about 0.5 degrees (70%) of the observed global temperature rise of about 0.7 degrees, leaving only about 0.2 degrees possibly attributable to carbon dioxide.

Within his testimony, you will note on page 2 that he refers to another research article in which a simple climate model is reported " to show that previous estimates of the sensitivity of the climate system from satellite data were biased toward the high side by the neglect of natural cloud variability." This article was peer-reviewed by two leading experts on climate sensitivity. One, Piers Forster (his name is also on the front page of the Summary), is said to have admitted that the finding should be referred to climate modellers. It is reasonable to assume that it bears on the accuracy of the models projections.

The subsequent satellite observations to which Dr Spencer testifies, confirm his model findings, favourably reviewed by Piers Forster.

Although Dr Spencer referred to the need for other researchers to further explore and validate his claims, his testimony has not been rebutted, and accordingly stands unchallenged. It became caught up in the political atmosphere of the U.S. Presidential elections. He was subjected to ad hominem attacks, which, apart from being irrelevant, overlook the fact that he is reporting on a team research.

His testimony appears to have since been overlooked or ignored.

Whatever the reason, the satellite observations on which he reports, have not gone away.

It is submitted that the Committee should take note of his testimony as if given before it.

To quote NSW Greens MLC Lee Rhiannon again, " ... no government should ignore the advice of a leading NASA scientist when it comes to how we deal with the challenge of climate change".

Attachment 3 is a later publication by Dr Spencer, dated 20 October, just before the Presidential election, directed to U.S. policymakers and since incorporated into a report. The Committee's attention is drawn to his remarks concerning an "apples with apples" comparison of the temperature projections by the IPCC's models, with their assumed sensitivity, and with satellite-observed sensitivity. Fig 1 shows that the IPCC's models, with satellite-observed sensitivity, project a temperature rise by 2100, for a doubling of the carbon dioxide concentration, of only about 0.6 degrees.

The predictions of other researchers to whom Dr Spencer referred in his testimony as also reporting no net positive feedback, are also shown on the chart

It is reasonable to assume that he would include the low projected temperature increase if he testified to this Committee

Again, this report for U.S. legislators appears to have been overlooked or ignored . Given the mind-boggling implications, one would assume that Governments and the IPCC, rather than ignore Dr Spencer's testimony, would be urgently having his NASA team's research replicated to either confirm or rebut what he said. Sooner or later someone will replicate it.

His testimony will certainly have been noted by the Chinese Government.

Meanwhile, it is a Sword of Damocles over any Emissions Trading Scheme introduced by any country.

The sensitivity of the climate to carbon dioxide emissions is also discussed in Attachment 7 from page 7, where Monckton then states:

"Correcting for each of these exaggerations reduces climate sensitivity to < 0.6 C degrees at CO2 doubling.

" Low climate sensitivity is to be expected, for CO2 is no more than a trace gas. … Its effect on temperature is logarithmic: each additional molecule causes less warming than its predecessors. Indeed, the IPCC's formula for evaluating the radiative forcing from CO2 ceases to apply once concentration reaches 915 ppmv, above which adding CO2 has very little effect on temperature. Half a million years ago, there was 25 times as much CO2 in the atmosphere as today. The planet did not fry.
…
" … in 1600 pages the IPCC neglects to mention any of the laboratory experiments on the basis of which it wishes us to believe that CO2 will in future have an effect on temperature far larger than that which it is visibly exerting today …"

<u>Testimony of Prof William Happer to the U.S. Senate Committee</u>

Attachment 4 is a copy of the testimony to the same U.S. Senate Committee as recently as 25 February this year, by Prof William Happer, whose area of research is into the interactions of visible and infrared radiation with gases – one of the main physical phenomena behind the greenhouse effect. He deals with climate sensitivity and feedbacks on page 3:

"Since most of the greenhouse effect for the earth is due to water vapour and clouds, added CO2 must substantially increase water's contribution to lead to the frightening scenarios that are bandied about. The buzz word here is that there is 'positive feedback'. With each passing year, experimental observations further undermine the claim of large positive feedback from water.

"In fact, observations suggest that the feedback is close to zero and may even be negative. That is, water vapour and clouds may actually diminish the already small global warming expected from CO2, not amplify it. The evidence here comes from satellite measurements of infrared radiation escaping from the earth into outer space, from measurements of sunlight reflected from clouds and from measurements of the temperature (of) the earth's surface or of the troposphere, the roughly 10 km thick layer of the atmosphere above the earth's surface that is filled with churning air and clouds, heated from below at the earth's surface, and cooled at the top by radiation into space."

as if to emphasise the point to the Senate Committee, again on page 8, he stated:

"All the models assume the water feedback is positive, while satellite observations suggest that the feedback is zero or negative."

He thus reiterates to the Senate Committee that the satellite observations strongly suggest that the models are wrong.

It is submitted that the Committee should take note of Prof Happer's testimony as if given before it.

Attachment 5: Report by Dr David Evans, Titled "The Missing Hotspot"

Dr Evans was formerly with the Australian Greenhouse Office, and is in private practice. His report was originally posted in July 2008, was contested by some, and has recently been updated to deal with the criticism.

The summary states;
"Each cause of global warming heats up the atmosphere in a distinctive pattern, its 'signature'. According to IPCC climate theory, the signature of carbon emissions and the signature of warming due to all causes during the recent global warming both include a prominent 'hotspot' at about 10-12 km in the air above the tropics. But the observed warming pattern during the recent global warming contains no trace of any such hotspot. Therefore:

1. ***IPCC climate theory is fundamentally wrong.***
2. ***to the extent that IPCC climate theory is correct in predicting a hotspot due to extra carbon dioxide, we know that carbon emissions did not cause the recent global warming.***

The hotspot is not incidental to IPCC climate theory – it lies at its heart, because the same water vapour feedback that produces the hotspot in IPCC climate theory also doubles or triples the temperature increases predicted by the IPCC climate models. If the IPCC climate modellers just turn down the water vapour feedback in their models enough so their theoretical signatures match the observed warming patterns, then the predicted temperature increases due to projected carbon emissions are greatly reduced and are no longer of much concern."

Within the report he reproduces the warming patterns produced by the IPCC and the observed warming pattern.

The absence of the hotspot is fatal to any reliance on the IPCC's models. Either they overstate the water vapour feedback, or they have proved themselves wrong in predicting a non-existing hotspot.

Reference to "the missing hotspot" is also made in Attachment 7, commencing at the bottom of page 5, where the author refers to Prof Richard Lindzen at the Massachusetts Institute of Technology, whom he describes as "the world's ranking expert on the behaviour of the atmosphere" as having concluded from the absence of the "hot-spot" that

" … Using basic theory, modelling results and observations, we can reasonably bound the anthropogenic contributions to surface warming since 1979 to a third of the observed warming, leading to a climate sensitivity too small to offer any significant measure of alarm …"

Chinese and other published research contradicting the IPCC's findings.

The IPCC uses only mathematical models, which, by their nature, assume that their inputs cover all of the factors that affect the climate. This is patently not the case, as shown by the terms of the Report, and the statements of lead authors Dr Trenberth and Dr Renwick, to which I have referred. There are other scientists in the U.S. China, and elsewhere, who use computers to study past climate records, and make no presumptions about knowing everything about what influences the climate. They detect influencing factors including rhythmic cycles which they can project into the future.

They have detected a main 60 or so year cycle of warming and cooling, the Pacific Decadal Oscillation, and forecast global cooling for the next 20 years at least, directly contradicting the IPCC's projection on page 12 (in red bold)

"For the next two decades, a warming of about 0.2 degrees C per decade is projected ...".

For some of the researchers, this cycle is superimposed on a generally rising trend since about 1800, the end of the Little Ice Age.

These researchers differ in the nature and degree of other influences, such as carbon dioxide, other cycles, and sunspot activity, on the underlying trend and variations within each mode, but not on the dominant cycle.

All state or imply that the IPCC's models are grossly in error.

Two examples: Easy to find is the work of Prof. Don Easterbrook, of Western Washington University - (search "Don Easterbrook") .He has traced the Pacific Decadal Oscillation back to the 1400s. In the 1990s he correctly predicted the commencement of cooling early in the 2000s, to last for 30-odd years, and, then, with another complete cycle, and depending principally on the degree of cooling, he forecasts a temperature rise by 2100 of a fraction of a degree. He attributes the fluctuations within the cycles to variations in sunspot activity.

Importantly for Senators and Members considering the Government's proposed Emissions Trading Scheme, attached is the Summary of their findings, in Engish, of the Chinese researchers, Lin Zhen-Shan and Sun Xian, published in a peer-reviewed journal, in 2007. They state that the dominant driver of climate is a 60-year cycle (*comment: this corresponds with the Pacific Decadal Oscillation****) with other cycles, including an ENSO-like cycle (****comment; El Nino Southern Oscillation****), on a rising trend. They say that carbon dioxide could account for no more than 40% of the temperature rise since 1882 (i.e. about 0.3 degrees). The researchers state***

"Even though the CO2 greenhouse effect on global climate change is unsuspicious, it could have been excessively exaggerated. It is high time to reconsider the trend of global climate changes".

It is significant to note that they find that the most dominant driver of the world's climate is the Pacific Decadal Oscillation. They also find that the El Nino /Southern Oscillation a significant driver, one of the other drivers which Dr Trenberth refers to as not being adequately covered by the IPCC's models.

That is, they find, as Dr Spencer points out could be the case, that the major influencers of climate are the Pacific Decadal Oscillation, and the El Nino/Southern Oscillation. These are the very "critical modes of variability that affect Pacific Rim countries and beyond" that Dr Trenberth says are not adequately represented in the IPCC's models, and possible explains why the IPCC's results and projections are so different from the observations, and projections based on observations.

The peer-reviewed Chinese research report has apparently been ignored by the IPCC, and by western scientists, politicians, and the media.

It has not gone away.

The Committee's attention is drawn to Attachment 11 as a convenient shorthand way of illustrating other theories concerning global warming.

<u>Atmospheric carbon dioxide concentration in pre-industrial times</u>

It has been well accepted that in past warming periods, an increase in carbon dioxide concentration has followed warming, and was therefore the result of, rather than the cause of the initial warming. It is claimed that the increased carbon dioxide then amplified the warming, which raises the question of why the warming has invariably ceased.

The Report states: "The global atmospheric concentration of carbon dioxide has increased from a pre-industrial value of about 280 ppm to 379 ppm in 2005. The atmospheric concentration of carbon dioxide in 2005 exceeds by far the natural range over the last 650,000 years (180 to 300 ppm) as determined from ice cores."

The change is shown by graph in Fig SPM1.

Prior to 1958, the concentration has been determined from ice-cores in Antarctica, since then at a site at Mauna Loa, Hawaii, at an altitude of 3400 m.

The values from the ice cores, and the methods by which the ice-core values were determined have been challenged in detail in the last few years. They were determined (as this submitter understands) by Messrs Callendar and Keeling.

Attachment 8 is an edited "short version" of a 2006 comprehensive draft paper by Dipl. Biol. Ernst-Georg Beck. It is marked "for discussion not citing" and is referred to the Committee on this basis. The text frequently directs the reader to the original.

Beck states that there exist more than 320 papers in the literature containing verified data on atmospheric CO2 concentrations. There are 90,000 accurate measurements by chemical methods before 1957 back to 1857 with an accuracy better than 3%. There are also measurements back to 1812, but some questions about the accuracy of these earlier figures.

These measurements have been taken by 15 or so named pioneers in chemistry, biology, botany, medicine and physiology, two of whom were Nobel Prize winners, and another was among the nominations. The stations extend from Alaska, across Europe to India.

In all cases except in about 1825, these measurements exceed the values attributed to the ice-cores.

Beck states that the average for the 19th century is 321 ppm, and for the 20th century, 338 ppm with a maximum of at least 420 ppm around 1940, another maximum of about 370 ppm around 1875 and a maximum of at least 380 ppm around 1820. The ice-core values show a smooth curve, with no maxima, rising from 280 ppm to join up with the Mauna Loa readings.

The paper includes graphs of the raw data and smoothed yearly averages compared with the ice-core values, also joining up with the recent figures.

At page 6 Beck discusses in some detail "the big CO2 maximum around 1942", with a high density of data with broad geographic coverage; 41 series with 70,000 single data from measuring stations spread throughout middle and northern Europe, USA, Atlantic Ocean, Alaska, India, and Antarctica. There were five different accurate standard measuring systems with high accuracy of 2-3%, and they showed a continuous rise since 1925, with a first peak before (pre-war) 1939, and the second peak at Alaska and India, remote from war activities.

None of this shows up in the ice-core data.

On page 9 are two graphs. The upper shows the correlation between global temperatures 1860 to 2000 from IPCC reports, which show a temperature maximum around 1942 with a build up from about 1920, and the CO2 concentration determined by chemical methods.

The lower shows the Northern Hemisphere land temperatures for the same period, with its correlation to the CO2 concentration determined by chemical methods. Beck states "The temperature maximum around 1940 is not a result of exponential rise of CO2. It's the reverse, high temperature around 1940 had induced CO2 maximum.

At page 2 Beck states (please note the restriction re for discussion, not citing), that Callendar and Keeling and the IPCC do not evaluate these chemical methods though being standard in analytical chemistry, (but) discredited the techniques and data and rejected most as faulty and highly inaccurate. He says that in using their concept of unpolluted background level they had examined about 10% of available literature and considered less than 1% as accurate.

Aspects of Beck's paper were criticised by, among others, Keeling. Beck has answered the criticisms. This is all publicly available.

The whole IPCC hypothesis of human-caused global warming is based on its pre-industrial concentration of 280 ppm.. If this figure is substantially wrong, the IPCC hypothesis collapses.

Attachment 9 is a lengthy article titled "CO2: The Greatest Scientific Scandal of Our time" published in the journal "Science" on 16 March 2007, Dr. Zbigniew Jaworowski, whose qualifications and professional experience are set out, and includes 19 years of investigating dust and carbon dioxide preserved in 17 glaciers around the world, and who has published many papers, most of them concerning the CO2 measurements in ice cores, discusses this issue, and many other IPCC findings.

At page 41, he states: "The basic assumption behind the CO2 glaciology is a tacit view that air inclusions in ice are a closed system which permanently preserves the original chemical and isotopic concentration of gas … This assumption is in conflict with ample evidence from numerous earlier CO2 studies, indicating the opposite."
…
There are four other arbitrary assumptions … which were used to support the first assumption above. (these are set out)

"more than a decade ago, it was demonstrated that these four basic assumptions are invalid, that the ice cores cannot be regarded as a closed system, and that low pre-industrial concentrations of CO2, and of other trace greenhouse gases, are an artefact, caused by more than 20 physical-chemical processes operating in situ in the polar snow and ice, and in the ice cores. Drilling the cores is a brutal and polluting procedure, drastically disturbing the ice samples.

"Some of these processes, which all cause fractionation of air components, are related to the solubility of gases: In cold water CO2 is 70 times more soluble than nitrogen, and 30 times more soluble than oxygen. Liquid water is commonly present in polar snow and ice, even at …. minus 73 degrees.

"Therefore, the conclusions on low pre-industrial atmospheric levels of greenhouse gases cannot be regarded as valid, before experimental studies exclude the existence of these fractionating processes.
…
"Only recently, many years after the ice-based edifice of anthropogenic warming had reached a skyscraper height, did glaciologists start to study the fractionation of gases in snow and ice … and the structure of snow and firn which might play a first-order role in changing gas chemistry."

Page 42
"The CO2 ice core data are artefacts caused by processes in the ice sheets and in the ice cores, and have concentration values about 30% to 50% lower than in the original atmosphere. Ice is an improper matrix for such chemical studies, and even the most excellent analytical methods cannot be of help when the matrix and samples are wrong."

Page 43 Referring to the "hockey stick" curves including that shown in Fig SPM1 in the Report
"These so-called hockey stick curves were published countless times as a proof of the anthropogenic increase in CO2 in the atmosphere. They were created illegitimately mixing the false proxy ice core data with direct measurements in the atmosphere.

" However, the worst manipulation was the arbitrary changing of the age of the gas trapped in the upper part of the core, where the pressure changes were less drastic than in the deeper parts."

He documents the alleged manipulation.

"We thus find ourselves in the situation that the entire theory of man-made global warming – with its repercussions in science, and its important consequences for politics and the global economy – is based on ice core studies that provided a false picture of the atmospheric CO2 levels."

"Meanwhile, more than 90,000 direct measurements of CO2 in the atmosphere, carried out in America, Asia, and Europe between 1812 and 1861, with excellent chemical methods … were arbitrarily rejected.. (He summarises Beck's paper)
…
(the IPCC's authors) selected only a tiny fraction of the data and doctored it. …
…

Page 44
"The measurements show that the most important political message of the IPCC in 2007 is wrong: It is not true that the CO2 atmospheric level during the pre-industrial era was about 25% lower than it is now, and it is not true that anthropogenic emissions of CO2 have caused what is actually our beneficially warm climate today."

Jarowoski has made serious allegations concerning how the base figure of 280 was determined.

Unless Beck and Jarowoski are shown to be wrong, in arguing that the 90,000 actual measurements are more accurate than the values determined from ice-cores, the whole edifice of human-caused global warming collapses.

It is submitted that the Committee should make a positive statement on the need to addres, in a transparent way, this challenge to a fundamental claimed fact.

The Chinese Government is aware of these papers.

<u>All of the satellite systems monitoring the earth's temperature are showing that the IPCC's models are wrong.</u>

On page 2 of Attachment 7 is a graph showing the average of observations of the four main satellite systems monitoring the earth's temperature, compared to the IPCC's projections, since 2002. It illustrates, graphically, the actual cooling, consistent, so far, with the Chinese and other research findings, despite the rising carbon dioxide concentration, and directly opposed to the IPCC's projections based on its models.

Monckton also analyses in some detail where he sees the errors are in the IPCC's models.

Attachment 10 is testimony by Patrick J Michaels, Research Professor of Environmental Sciences at the University of Virginia, to a U.S. House of Representatives Committee Subcommittee in which he demonstrates that the IPCC's models have already failed.

<u>Implications</u>

It is submitted that, based on the above research results and other material, the case for attempting to control climate change, by reducing carbon dioxide emissions, is therefore close to collapse, unless <u>all four</u> challenges are shown to be invalid.

It is submitted that, at the very least, the absence of the hot-spot shows that the models are wrong and cannot support a case for an Emissions Trading Scheme.

If the models are wrong, there is no basis for the application of "the precautionary principle" based on the possibility that they might be right.

An ETS is not neutral, and cannot be based on the notion that it will lead to a a "cleaner' environment. If not justified, it weakens the natio's ability to adapt to the naturally occurring climate change.

If not before the next IPCC Assessment Report is due in 2014, and presumably will be based on (selected) research published up until mid-2013, modellers will have to address the issue. By then, only a few years away, they will have to either ignore, or take into account, the absence of the hot-spot, the unrebutted NASA satellite observations on climate sensitivity, and Dr Spencer's model on the same subject, referred to the modellers by Piers Forster, and the adequate treatment of natural causes.

If they choose to ignore it, their credibility is compromised.

If they take it into account, it would seem that at the very least, it is likely that there will be a substantial back-pedalling from the 2007 Report, with reduced certainty on the role and magnitude that human activity has played in global warming, and particularly, greatly reduced projections of temperature rise by 2100.

It is submitted that the Committee should recognise that the case for reducing emissions could formally collapse.

<u>The expression "carbon pollution".</u>

It is submitted that there is ample evidence of potential benefits of increased carbon dioxide concentrations, particularly for plant growth and hence food production, and hence that emissions should not be formally regarded as pollution in the parliamentary record.

The Committee is referred to the testimony of Prof Happer in Attachment 4.

<u>Opinion; From the Chinese government's perspective.</u>

It is submitted that the effect of the above is that there is no imperative scientific reason why the Chinese Government should agree to limit its carbon dioxide emissions, nor is there any reason to expect that it would be persuaded by "the precautionary principle",

From its viewpoint, irrespective of other views, the case for reducing emissions has collapsed, the projected temperature rises in the next 100 years are well under the temperatures in the Mediaeval Warm Period, when Vikings farmed in Greenland. Its Government would have no reason to ignore its own research, entirely consistent with U.S. and other research, all based on actual observations, just because the Australian Government, and other Governments, choose to ignore it.

If the Australian Government, or any Government, introduces an ETS in any form, and puts a cost on its industries, there is no basis for thinking the Chinese Government would follow

Logically, it could adopt the view that those wanting it to reduce its emissions, should pay for it, and it ends up with an even greater economic advantage.

Moreover, it is in China's national interests, to have other Governments place restrictions on their industries, the higher the costs on their industries, the better for China.

Logically, Chinese interests are therefore best served by going along with concern for carbon dioxide emissions, and in manoeuvring to maximise the costs to other countries' industries, while minimising or refusing to accept any cost to its own.

Given the apparent intention by the Government, and the governments of some other developed countries, to impose costs on their industries, the Chinese Government is in the box seat to maximise the benefits to itself.

Accordingly <u>any</u> scheme which adds costs to Australian industries, merely hands China an economic advantage on a plate, and it will laugh all the way to the bank.

The ETS, in whatever form, which puts a cost on Australia's industries, is positively against Australia's national interest, and positively in China's national interest.

The Government would be wise to consider the implications of a stronger dominant China, with a weakened Australia and a weakened United States, if it is determined to introduce an Emissions Trading Scheme.

The Chinese government claims that despite the world-wide recession, its economy will still grow at 8% this year. Whatever the rate, it seems to have the potential to near double in the course of an Obama two-term presidency or even double and redouble in size in the next 20 years, by 2030, less than a generation away, without any outside help.

By 2030, global temperatures, based on the IPCC's models with correct sensitivity, even if otherwise correct, will have risen by only 0.1 degrees, and according to Chinese and other research, will have fallen.

Sooner or later China will have the ability to challenge American economic and then military leadership. A recent Rasmussen survey reports that 37% of Americans (51% of 18 to 29 year-olds) now believe that the U.S. will not be the most powerful nation by 2100, 34% still think it will, 29% undecided. And this is before it introduces its ETS, which President Obama says he will, and the exodus of jobs and prosperity to China commences as a result.

Any help by our government, compounded, hastens China's capability. This is not in Australia's national interest.

In fact, if the developed economies introduce schemes that will have the effect of transferring jobs and prosperity to China, concurrently with weakening the U.S., the ultimate prize for it, the U.S. Government surrendering its economic and military superiority, is brought closer to its grasp.

Conclusion

It is submitted that

(i) the basis for the proposed Emissions Trading Scheme has collapsed.

(ii) the Government should withdraw the ETS, in the light of recent research results, and press the IPCC to check out research that disputes its conclusions and the validity of its models.

(iii) the proposed Emissions Trading Scheme is in China's national interest, not Australia's.

Robert Williams