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(By email)

Open Letter to Sir Peter Gluckman Chief Science Advisor to the Prime Minister

Dear Sir Peter,

We are a group of active and retired scientists and engineers, all members of the New Zealand Climate Science Coalition, who are deeply concerned about the nature of your report “New Zealand’s Changing Climate and Oceans: The Impact of Human Activity and Implications For the Future” which was submitted in July 2013.

Our concerns are directed to three aspects of the report:

1. The timing and purpose of the report.
2. The language of the report, in particular the use of phrasing which we believe will mislead even a discerning reader and will direct many to an alarming conclusion we believe to be unjustified; information which is not justified by clear and direct evidence. Statements and conclusions of a political nature have no place in a report that purports to be a submission of scientific evidence.
3. The sources of information used for the report represent only one viewpoint in the debate about climate change. We are concerned that there appears to have been no endeavour to source information from those who do not accept such a viewpoint and who can offer credible evidence to the contrary. We believe this to be a bias unbecoming of what should be an impartial report.

The aspects of your report with which we have problems are numerous and too extensive to include in a letter such as this, and we confine our comments to four areas of concern: the New Zealand temperature record; sea level; ocean acidification; and extreme weather events.

We agree that the climate is changing. This has never a point of dispute or even debate between those who believe that present change is due entirely to human influences and those who believe that the climate changes naturally.

The timing and purpose of the report

The next Summary for Policy Makers from the IPCC is due later in September 2013 and we wonder why the report would try to pre-empt it with information and hypotheses based on an IPCC report which is now seven years old. We are perplexed by a report which purports to be independent but draws only on information related to one hypothesis, that of the anthropogenic nature of the source of climate change. For the last two years, two issues have preoccupied climate science—many published papers have devoted consideration to both the pause in the trend in global average temperature, and to climate sensitivity. Both issues are essential: that the global average temperature has not increased in the last 17 years means that hypothesis that increasing carbon dioxide (CO₂) in the atmosphere increases global average temperatures is incorrect or the climate sensitivity to CO₂ is grossly over-estimated. The report pays little attention to these issues.

We are led to wonder also whether this is an attempt to pre-empt the forthcoming release of the updated report of the Non-governmental International Panel on Climate Change, referenced later in this letter (7).

The language of the report

The first paragraph of the executive summary offers two examples of language which may mislead a reader: *“There is unequivocal evidence [that climate is changing] ... and there is strong scientific agreement that this is ... [a result of greenhouse gas emissions]”*. Later, the summary states *“There is no way to completely remove uncertainty given the nature of climate science and the climate system, but despite this there is strong scientific consensus of the general trends of recent climate change.”*

“Agreement” and *“consensus”* do not constitute evidence. It is merely opinion and the history of science shows clearly that consensus has no part in deciding on the correctness or otherwise of a theory. It is misleading to use these terms in sentences implying that they constitute hard evidence. Even then, the evidence for “consensus” may not be valid. One study which claimed a 97% consensus of 10,000 climate scientists has long-since been discredited because of the methodology of dealing with the responses to a survey [1]. Another recent paper [2] considers other claims regarding consensus and demonstrates the fallacy of such claims. On the other hand, a petition circulated in and from Oregon by scientists opposed to the claims of the proponents of anthropogenic climate change attracted more than 30,000 signatures (3) indicating there are many who believe that climate changes naturally.

The second quotation is also misleading implying that the influence of natural factors in climate science is uncertain whereas the influence of human factors is certain. This is not true. There is plenty of evidence from geological records of the change of climate during the Holocene—whereas the evidence of human influence has not progressed beyond a theory which is not supported by evidence but by “projections” derived from theoretical climate models which were reported by the IPCC in 2007 to poorly model many natural climate factors. This is highlighted in a recent paper by van Geel and Ziegler (2013) [4] in which they point out that the IPCC models grossly underestimate the effect of the sun on climate.

The report refers to the present global temperature trend as an *“apparent hiatus”*. This is a misleading term. There is nothing *“apparent”* about it. There has been no increasing trend since 1996-7 and some sources suggest that a downward trend can be detected in the last 4-5 years. The

word “*hiatus*” implies that this is abnormal and that in the near future the upward trend will resume. There is no hard evidence to suggest this to be the case. It relies solely on the outcomes of theoretical climate models programmed to produce warming in response to an increase in carbon dioxide and which have never been validated against actual measured temperatures. It is also well known that they are not accurate models of the climate. If they were, they would be able to predict El Niño episodes. We acknowledge that such models have been tested against historical data--and likely been adjusted to match it as closely as possible--but this is not the same as making a prediction that turned out to be correct.

Erroneous and misleading information

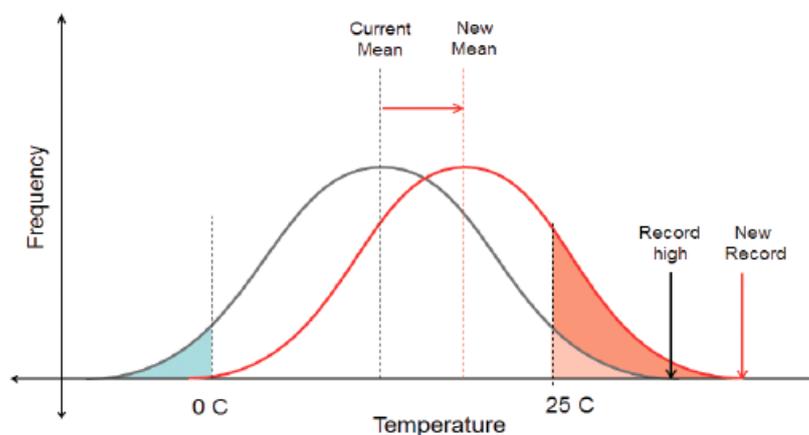
The report includes misleading information in several areas. We consider the most important of these are those which deal with temperature changes and trends, sea level, ocean acidification and the occurrence of extreme events. We acknowledge the presence of acceptable information but consider the unequal weight given to both accurate and erroneous information to be unprofessional.

Temperature

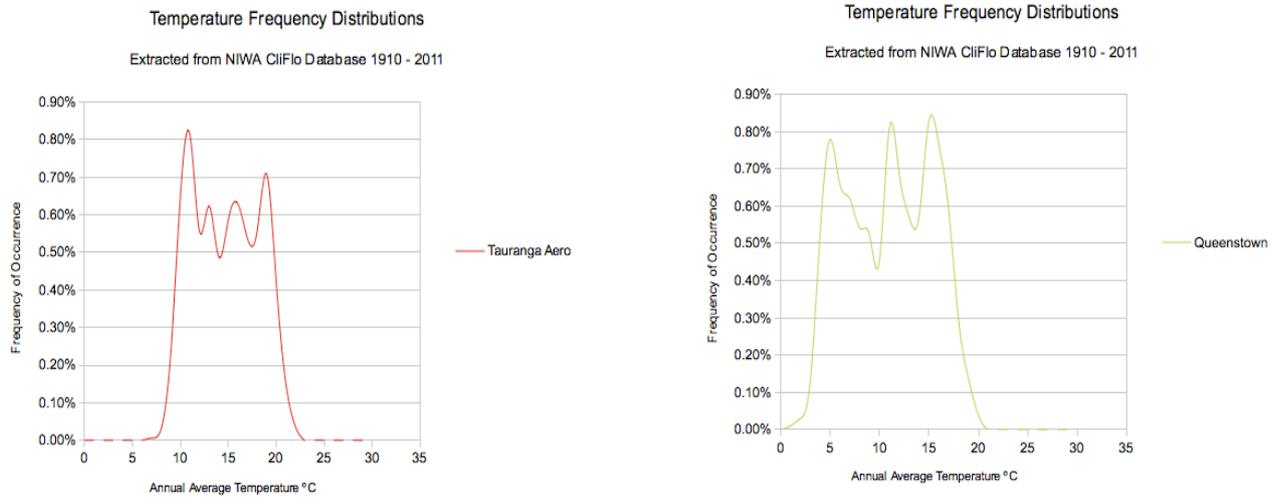
We are aware of the information presented by NIWA as representing the temperature record for New Zealand for a period of more than 100 years. We are also aware of challenges which have been made to the validity of that record but we do not wish to debate that issue in this letter. On the other hand, we take exception to the deprecating manner in which the temperature record in the last 17 years is treated. Describing the trend as an “*apparent hiatus*” has already been discussed. It is by no means clear that we are experiencing a “*hiatus*” in a climbing trend: there is no more evidence to sustain this claim than there is to suggest that the present trend may precede a downward trend, as some scientists suggest. That the trend has been essentially zero over the last 16 or 17 years is not just “*apparent*”—it is obvious and it has been acknowledged by authorities such as the UK Met Office and the Chairman of the IPCC.

The report uses Figure 1 in an attempt to demonstrate why an increase in average temperature will result in many more hot days.

Figure 1: The effect of increasing mean temperature on the extremes



This analysis, however, assumes that the temperatures in the data series are statistically distributed according to a normal Gaussian curve and the figure falsely suggests that the standard deviation of the distribution is reasonably large. The following figures graphically indicate that the temperature data series for two disparate measuring stations in New Zealand as far from being normally distributed.



It is quite clear that these distributions (which are typical of many measuring stations in New Zealand) are not normally distributed, that they are multi-modal or at least bimodal and that the standard deviation, whatever it means in the context of these curves, is much smaller than the notional distribution in Figure 1 from the report. This means that a small shift in the average, of less than, say, 1°C is not likely to result in many more outliers and that they are not likely to increase in number.

Basing the analysis on a normally distributed curve is, we contend, misleading and grossly incorrect.

Global Sea Level

The report states, citing Church and White, that sea level has been rising at “close to 2mm/year” for much of the 20th Century and “rising at a rate of about 3mm/year since the early 1990’s”. The actual figures quoted by Church and White are, however, $1.7 \pm 0.2 \text{ mm.y}^{-1}$ for 1900-2009 and $2.8 \pm 0.8 \text{ mm.y}^{-1}$ for 1993-2009. The report therefore overstates the increases in sea level over these periods by 15% and 7% respectively. Although this may be considered acceptable rounding none-the-less it is misleading and if applied over an extended period could lead to an erroneous conclusion, as well as an overestimated prediction. In fact extensive New Zealand data obtained over the last 100 years independently in 4 major cities in New Zealand show that the relative sea level rise has only been 1.6mm /year. [Hannah, J – (8)]

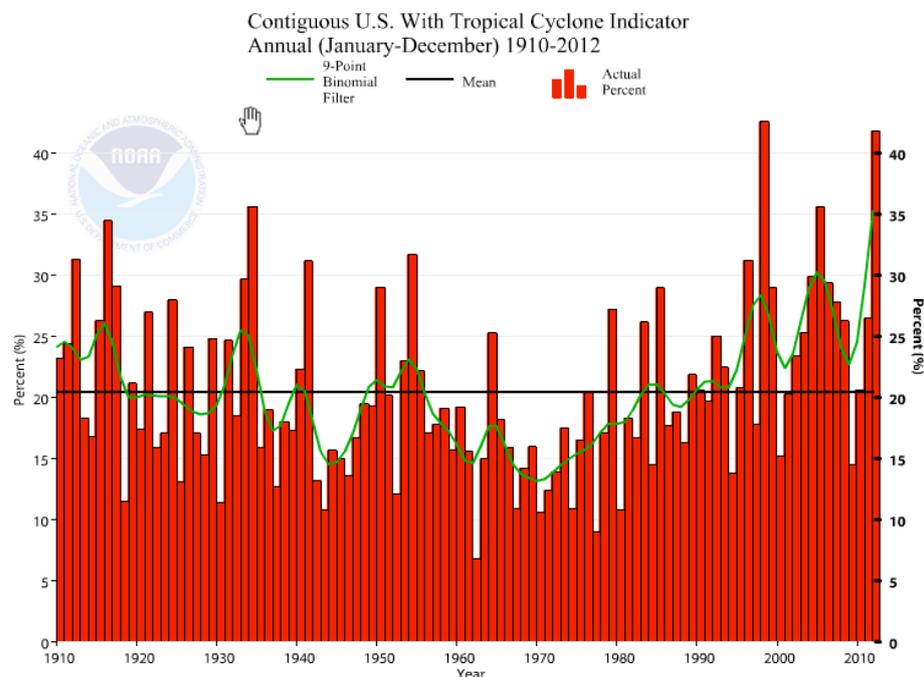
Ocean acidification

The term “acidification” is misleading and intended to alarm a reader with an implication that the ocean is becoming dangerous, the word *acid* carrying a connotation of danger. The pH range of the oceans is from around 7.8 to 8.5 which well inside the alkaline condition. The report suggests there has been an average drop of 0.02 in pH measurement. So the ocean may be slowly approaching a neutral condition (pH 7.0) and it is still a long way from being acidic. There is an

increasing body of information that suggests that increasing the concentration of CO₂ in both the atmosphere and oceans has little or no discernible effect. A recent paper by Takahashi and Kurihara (2013) suggests the effect on corals is negligible [5] using a pH range of 7.5 to 8 in their experimentation.

Extreme Weather Events

The report makes several mentions of severe weather events such as high winds, increased, precipitation, and flooding and drought, basing the inclusion of such statements on the projections of others. Many of the occurrences are attributed to oceanic conditions but there is no reference in this regard to the La Niña/El Niño cycles and the influence they play in the occurrence of extreme events. Further, there is little evidence to suggest an increase in such events related to climate theories as the following graph of the US Climate Extremes Index shows [6]. The graph does not refer to events per se but only to the total area impacted by tropical cyclones, and would indicate as equivalent many small cyclones and fewer larger cyclones.



Statements of a political nature

There are at least three statements in the report which we believe are of a political rather than scientific nature.

The report states that “*Global changes in climate and resulting changes in commodity prices ...*” . There is nothing to suggest that commodity prices will be linked to global warming (aka climate change) and we believe that the statement is intended to influence the reader to accept the remainder of the sentence, “*... have the potential to impart significant impact on the profitability of New Zealand farms.*” We consider this statement is intended to influence policy. It is not related to the science the report purports to present.

With respect to “*emissions*” the report states that “... *forest management and land and land use changes can have a significant impact on New Zealand's future reporting of net emissions.*” Whether or not New Zealand reports emissions is a political decision.

It further states “*Any action from New Zealand to mitigate emissions would have negligible direct global impact in real terms.*” This, too, is a political statement that has no place in a scientific report.

Sources of Information

We are concerned that the report accesses only resources that are aligned with the hypothesis of the anthropogenic source of climate change (or global warming as it was previously called). This hypothesis has been challenged by many reputable sources. For example, the reports of the Non-governmental International Panel on Climate Change, the next of which is due to be released on 18 September (7). A report that purports to be independent should draw on an as wide a base of information as possible and attempt to draw a conclusion based on the weight of evidence, and at least recent history of the Medieval Warm Period (900-1400AD) and the Little Ice Age (1400-1850AD).

Conclusion

We believe that while this report purports to be a scientific summary its real objective is to persuade policy makers that global warming is real, dangerous and preventable.

We ask the following questions:

1. Why was information for the report sourced only from those known to be proponents of anthropogenic global warming and no information sought from reputable sources which offer alternative evidence?
2. Why does the report place such great weight on the projections from climate models which are demonstrably inaccurate and have never been validated against real data?
3. Why is the evidence that the world has not warmed over the last 17 years largely ignored? It provides extremely strong evidence that substantial increases in CO₂ do not produce dangerous global warming.
4. Why does the report include alarmist and misleading statements on the topics of sea level, ocean acidification and the number of extreme weather events that are not supported by the evidence?
5. Why is a report that purports to be advice of scientific evidence couched in blatant and misleading political terms?

We look forward to your responses to these questions.

Signed:

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Qualifications: Grad IEE, MSc (power systems) (Aston, Birmingham, 1968).

Dr John Maunder (former President of the Commission for Climatology of the World Meteorological Organization from 1989-1996; Assistant Director of the New Zealand Meteorological Service from 1982-1989. University staff member at Otago, Victoria (Canada) , Missouri, Delaware, Dublin Staff member at the Bureau of Meteorology of Australia, and the Atmospheric Environment Service of Canada)

Qualifications: PhD (Otago) 1996

Dr Gerrit van der Lingen. (Geologist and paleoclimatologist. 1961-1965, geologist with the Geological and Mining Survey, Suriname, Sth America; 1965-1992, sedimentologist with the NZ Geological Survey; 1992-2002, director GRAINZ (Geoscience Research And Investigations New Zealand), research Associate University of Canterbury, private consultant, paleoclimate studies on sediment cores from the Tasman Sea and Southern Ocean; 2002-present, involved in the climate debate, writing articles and giving lectures).

Qualifications: BSc, MSc, PhD (Utrecht).

References

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