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**From:** Radford, Nigel [SMTP:Nigel.Radford@normandy.com.au]  
**Sent:** Wednesday, August 23, 2000 10:43 PM  
**To:** 'jsct@aph.gov.au'  
**Subject:** Kyoto Protocol inquiry

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To the Secretary  
The Joint Standing Committee on Treaties  
Parliament House  
Canberra

Dear Sir or Madam

Please find enclosed a contribution to the above inquiry.

Would you be so kind as to acknowledge receipt of this contribution? If you require a signed copy, please supply a fax number at your earliest convenience. Should you require an original by post, I am currently in a remote area, where access to a postbox is limited! I note the closing date for submissions is this coming Friday and therefore trust that the e-mail version will suffice. Please advise me!

Yours Sincerely

*Nigel Radford*

<<Kyoto 20.8.00.doc>>

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**EMAIL [nradford@iinet.net.au](mailto:nradford@iinet.net.au)  
Wednesday, August 30, 2000**

The Secretary  
Joint Standing Committee on Treaties  
Parliament House  
Canberra ACT 2600

Dear Sir or Madam,

I wish to comment on issues pertinent to your Inquiry into **THE KYOTO PROTOCOL**. In particular I wish to address the term of reference concerning the veracity of the scientific theories surrounding the global warming debate.

Firstly some words on my background. I am a scientist by training, but not a climate specialist. I have a First Class Honours B.Sc. in Earth Sciences from Leeds University, an M.Sc. in Mineral Exploration and Mining Geology from Leicester University, and a Ph.D. in Applied Geochemistry also from Leicester University. I have worked for over 25 years as a geoscientist in the minerals exploration industry, the last 20 years in Australia. I am proud to have become an Australian Citizen in 1985. I work presently as Chief Geochemist for the Exploration Division of Normandy Mining, Australia's largest gold producer. I am Vice President of the Association of Exploration Geochemists, an international scientific society which seeks to further the discipline of Exploration and Environmental Geochemistry. I am a member of the WA Government's Technology and Industry Advisory Council. I am writing this note to you as a concerned, private citizen.

The Greenhouse Effect is real enough, indeed it's the only thing that keeps the Earth warm enough for us to live on. Furthermore, there can be no doubt that the Earth's climate has been substantially hotter and colder than now. Consequently sea levels have risen and fallen such that within the last 100,000 years (the blinking of an eye, geologically) Rottnest Island, currently 20km offshore of Fremantle, has been connected to the mainland, and surf crashed on beaches at Forrestfield at the foot of the Darling Scarp east of Perth, now 80m above sea level. All this happened long before man existed in sufficient numbers to influence climate. Furthermore, CO<sub>2</sub> levels in the atmosphere have been a lot higher and lower than they are presently. So why the sudden concern over climate change? It boils down to the rate of climate change we think we are observing, and whether or not there is a discernible, and incontrovertible human influence thereupon.

How do we know if climate is changing significantly and if it is, why should human-kind believe itself to be responsible? Some answers may be found in old fashioned human nature. Human-kind has an overwhelming fascination for the weather. It is a sure-fire conversation maker at social gatherings: TV station weather presenters become cult figures! Furthermore, we all know how notoriously unreliable weather forecasts can be even a few days ahead. However, we are happy to believe calamitous forecasts for 30 to 50 years ahead. Why?

We also have an insatiable appetite for sensation. The communications revolution allows TV news editors to beam into our living rooms, on an almost daily basis, sensational images of wild weather, be it blizzards in Europe, wild fires in western USA or a cyclone in the Bay of Bengal. Only a very few years ago such coverage was unheard of. Is wild weather more common now, or are we just more aware of it? Undoubtedly the latter, I think.

We tend to look for the worst in everything, so we find it immensely difficult to believe that observed changes in climate patterns are not necessarily bad. But one effect of increased CO<sub>2</sub> in the atmosphere is that it acts to stimulate plant growth, thereby removing the self same carbon from the atmosphere. An increase in temperature causes more water to evaporate from the oceans, thus increasing the cloud cover. This acts as a reflector to solar radiation (the albedo effect) and serves to lower temperatures. Could it be that some of these mechanisms are self compensating? It is arguable that, far from being a very fragile feature, the earth's atmosphere is a very robust system which has withstood many ecological "disasters" and survived. For example, a major meteorite impact is believed to have caused extensive darkness at the end of the Cretaceous Period, and have been a major factor in the extinction of the dinosaurs. Nevertheless, the climate recovered quickly enough for the warm-blooded mammals to survive and fill the ecological niches left by the dinosaurs.

**Finally, and very importantly, human-kind is obsessed with its own importance. So in regard to climate change, we find it almost impossible to believe that changes we observe, are not caused by our actions.**

So what can cause the changes in climate that are observed in the geological and anthropological records? The predominant engine driving the earth's climate is the sun. The distance between the earth and the sun is not constant: nor is the attitude of the earth's axis of rotation relative to the sun fixed. Thus, even with constant solar output (which does not happen), the amount of solar radiation received by the Earth would vary with time. These variations, referred to as the Milankovitch Mechanisms, are predictable. They provide a mathematical framework for the onset and retreat of ice ages observed in the geological record over the last few million years. But the sun is not a constant source of energy. Over recent months we have been treated to some of the most massive solar flares ever observed. The sun also reaches one of its sun spot maxima this year. The "Mini Ice Age" at the start of the 18<sup>th</sup> Century corresponds with an unusually long period of minimal sun spot activity. With such a variable energy input, is it any wonder that variations in surface temperatures are observed from time to time?

Even the basic tenet that the earth is currently warming is in dispute. There is considerable doubt over how reliable surface temperature records are anyway. More than 70% of the earth's surface is water, and yet over 95% of our weather recording stations are on land. Furthermore, most recording stations are close to or within urban areas, and therefore subject to micro-climates caused by vegetation clearing and by heat being absorbed by buildings etc during the day, and re-radiated at night. Satellite based temperature readings, available only for the last 19 years, do not indicate any discernible long-trend temperature changes over that period. Shorter term fluctuations are related to volcanic eruptions (eg Mt Pinatubo) and to solar flare and sunspot activity. Reliable temperature records of any sort only go back a few decades. Are there real variations, and if so are they merely part of long term fluctuations? Is there really a discernible human influence? Can we see the wood for the trees?

The Greenhouse Effect balances incoming and outgoing solar radiation and hence helps fix the surface temperatures at any given time and place. Therefore a substantial change in the amount of greenhouse gasses should affect surface temperatures. But more than 95% of all greenhouse gasses comprise water vapour. Only 2% of the total greenhouse gas mixture is carbon dioxide, and of that 2%, less than one twentieth is anthropogenic. So do human induced increases in CO<sub>2</sub> make all that much difference? Furthermore, CO<sub>2</sub> only absorbs heat within certain very specific ranges of wavelength, and some scientists argue that those "absorption windows" are already fully closed, so that increasing the CO<sub>2</sub> content of the atmosphere will not cause any more radiation to be trapped: it's all being trapped already!

Greenhouse theory requires that increases in CO<sub>2</sub> lead to increased temperatures. Recent studies of ice cores show a strong correlation between atmospheric temperature (derived from oxygen isotope analysis of the ice) and CO<sub>2</sub> content of the air trapped in bubbles in the ice, apparently proving the point. However, detailed study of these results, which span the last 150,000 years, show that temperature rises first, and CO<sub>2</sub> rises slightly later. So increased CO<sub>2</sub> is the effect of increased temperature, not the other way round.

The Intergovernmental Panel on Climate Change (IPCC), which provides scientific data to the United Nations Environment Programme, has revised its own predictions on global warming from a rise of 3.0°C by the year 2030 (prediction made in 1988) to a rise of 0.8°C by 2030, predicted in 1995. Concomitant sea level rise predications have likewise fallen. This is largely due to the realisation that early computer models used were woefully inadequate. Early models could not accommodate heat transfer between atmosphere and oceans, nor could they accommodate currents in the oceans waters. Primary school children have heard of the Gulf Stream and know that it transfers warm waters from the Caribbean to the northern waters of the Atlantic Ocean. The latest models are doing better on such issues, but still cannot accommodate clouds! And yet we chose to believe the predictions coming from such models. At the very least, by the IPCC's own predications, the human induced greenhouse effect "calamity" has been postponed! But few people are aware of this. The calamitous predictions of the late 1980s are still the public and media focus.

And if the temperatures are indeed going up, surely sea level should rise too? Recently a bench mark carved in the 1840s on the cliffs of the Isle of the Dead at Port Arthur in Tasmania, shows that sea levels there have actually fallen over the 150 years since the bench mark was carved. CSIRO are apparently researching this issue but have been conspicuously slow in releasing any of their findings.

The arguments developed above are but a tiny fraction of the evidence available which throws doubt on the very existence of global warming **at the present**, as well as on the human influence thereupon. Many scientists (and especially those with expertise in climatology) dispute the popularly held opinion that human-induced climate change is proven fact. However, the public has taken climate change to heart, and politicians the world over are reacting to that concern. Surely a cleaner atmosphere cannot be a bad thing? Indeed not, but one has to ask, at what cost and for what reasons? Is more CO<sub>2</sub> in the atmosphere really a bad thing? Many of the “no regrets” greenhouse gas reduction measures that Australian industry can make have been made or are in train. Compliance even with the (debatably) generous provisions negotiated by the Federal Government at Kyoto will cause a massive downturn in the Australian economy. This will put many Australians out of work. So be it, surely, if it will save the planet from disaster? But as demonstrated above, the IPCC’s own predications of the onset of human-induced global warming have declined dramatically over the last 12 years. And if the changes in climate are real, but not human induced, they will happen anyway, and our feeble efforts will be all in vain! Are we really facing an ecological disaster? If we act hastily we will **certainly** face economic disaster. There are many opportunities, both economic and ecological, associated with sustainable development, but we run a serious risk of “throwing the baby out with the bath water”!

But surely Governments around the world are being advised by experts? The Federal Government’s Australian Greenhouse Office Chief Executive Officer, Gwen Andrews, in a paper called “Greenhouse, the uncertain challenge” given on 30 June 1999, said, “Many people will start with the uncertainty of the science. This is a debate that can lead down some very unproductive paths” and also “Informed opinion indicates that it is not wise to wait for incontrovertible certainty on the scientific front”. One is tempted to ask Ms Andrews, for whom these paths of scientific certainty are so unproductive? Are they unproductive for a bureaucracy intent on self preservation, or for workers about to be put out of jobs because their value-adding industry has moved off-shore to countries not required to comply with the Kyoto convention? So are the motives of the Government’s own advisors beyond reproach?

Michael Waite from the WA Greenhouse Council told the WA Government’s Technology and Industry Advisory Council, on 23 August 1999, that “Greenhouse is a trade issue, it was de-coupled from science long ago”. And here I suspect lies the nub of the matter. Emissions Trading is already being seen by various forces in Governments all round the world as a new form of “clean” taxation: the Carbon Tax. It is a tax on industry, not on the individual voter. It is also a tax levied in the name of a clean, green planet. Who could resist it? But if the reasons for levying it are flawed, and they may well be, and if the net result is to cause massive unemployment, what will be the long term effect on the politicians who introduce it?

Typical of most such papers, the Federal Government's recently released report on "Possible Application of a Greenhouse Trigger under the Environment Protection and Biodiversity Conservation Act 1999" makes sweeping generalisations when dealing with the science of greenhouse. They concede that "there are continuing scientific uncertainties about how fast and how much warming will occur..." but go on to state, quoting the IPCC, that "...scientists agree the climate is indeed changing, and that the balance of evidence suggests that humans are already having a discernible influence on global climate." This is just not true. Many informed scientists hold very serious reservations, but that appears to be the end of any science in the report. This sounds like Ms Andrews again! Mr Waite is indeed right, the science was de-coupled long ago! Your inquiry provides an opportunity to put science back into the debate.

I believe that the Australian Federal Government should take the opportunity to evaluate for itself, in a serious and independent manner, the scientific evidence that contradicts popular ideas on human induced global warming. Then, and only then, can the Government make informed judgements on the soundness of carbon taxes, emissions trading and the Kyoto Protocol, and if still deemed essential, ask Australians to sacrifice a substantial portion of their economic well-being. Surely such sacrifices cannot be expected unless their need is beyond reasonable doubt? Surely we should at least apply the legal requirement of proof beyond reasonable doubt for such a radical issue? To ratify the Kyoto Protocol now would line Australia up into the front row of nations seeking to shoot themselves in the foot!

Yours Sincerely

Nigel W. Radford, B.Sc., M.Sc., Ph.D.

(Sent by e-mail).