

This brief submission highlights two aspects of climate change which seem to require consideration:

1. **Reaction time delay considerations and distinction between GHG emission RATES and LEVELS.**
2. **The wisdom of imposing BINDING long term GHG emission targets.**

These are considered below.

1. **Reaction time delay considerations and distinction between GHG emission RATES and LEVELS.**

In the near future it is expected that the world's major nations will introduce policies aimed at reducing CO<sub>2</sub> emission rates by very significant amounts by say 2050 or earlier, when compared to 1990 emission rates. This is intended to act as a perturbation to the climate system with the expectation that it will result in reducing global warming and other undesirable climate changes.

Like any other system, one may expect that a measurable reaction time delay will occur before the climate system reacts positively or otherwise to such emission reductions. The climate changes that we are experiencing today are widely believed to be the result of an unintentional perturbation, namely the increase of CO<sub>2</sub> emissions that started with the industrial revolution about two hundred years ago climbing to very high levels over the last fifty years. I.e. it took the climate system a considerable amount of time before various negative impacts ( warming, melting of glaciers etc. ) became apparent and significant enough to raise the alarm.

Consequently, it is not unreasonable to argue that the corresponding reaction time from the introduction of emission rate reduction policies can easily be of the order of from say fifty to several hundred years. During this reaction delay those climate change processes that have already been activated ( melting of glaciers, ice-caps and permafrost etc. ) will continue to have an impact on climate and may trigger further processes over time.

Furthermore, and perhaps more importantly, the reduction in CO<sub>2</sub> emission RATES will not necessarily translate to a reduction of CO<sub>2</sub> LEVELS because the CO<sub>2</sub> sequestration process is very slow, with the implication that it will take longer for the climate to react positively as intended. In the final analysis, it is the LEVEL of GHGs that matters. The distinction between emission RATES and LEVELS have not been sufficiently emphasized in the public arena.

As a result of such a distinction, emission rate reduction policies cannot be expected to provide a quick fix solution to climate change and no solution can be guaranteed.

Policy makers need to put in considerable effort in explaining these points to the population at large, in an effort to obtain long term support. Keeping in place, policies that demand considerable difficult behavioural changes over a long period of time without any visible 'dividends' being experienced will prove to be very difficult to keep in place.

## 2. **The wisdom of imposing BINDING long term GHG emission targets.**

Predictions based on current climate models will necessarily have to be modified and revised from time to time as climate change unfolds and more information etc. becomes available. i.e. it is a false assumption to presume that forecasts based on current models are accurate several decades into the future.

Climate change will prove to be a moving target and consequently setting BINDING targets well into the future could prove to be counterproductive. To the best of my knowledge neither Australia nor the rest of the world have ever set long term binding objectives in any field. Clearly if Gaia's revenge turns out to be milder than expected, then future generations would seek to relax shackles imposed by previous generations. Conversely, if climate change is harder than expected tougher measures would be called for.

Professor BRIAN FAGAN, the world famous anthropologist and climate change expert highlighted the danger of taking such decisions at a lecture he delivered at Camden in Maine, in October 2004. He stated, "Often people do things in good faith thinking it is a sound strategy but in a hundred or a thousand years the consequences are unimaginable." Such a statement should not be dismissed lightly.

One of the main reasons put forward to support proposed future policies to reduce CO2 emissions is that we want to ensure that our children and grand children inherit a world that has a healthy and bright future etc. By the same token, we must be careful that policies decided upon by this generation do not bind the hands of those future generations that they are intended to protect.

Long term policies should allow for periodic revision.

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