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## **COVER STORY: ENERGY CRISIS: The real threat of global warming**

*Regardless of whether or not man-made carbon emissions cause global warming, Australia still urgently needs to examine alternative energy sources, argues marine scientist, Dr Walter Starck.*

**Over the past century, carbon dioxide (CO<sub>2</sub>) in the atmosphere may have increased from around 3/100ths of 1 per cent to about 4/100ths of 1 per cent, and average global temperature *may* have increased by about 0.6°C.**

I say "may have", because both figures are derived from complex statistical treatment of thousands to millions of individual measurements which are subject to both high levels of natural variation and a variety of errors.

Predictions of ongoing future warming are based on computer models of global climate. While impressively complex, such models are still only crude, greatly simplified approximations of the actual climate system. They include numerous assumptions, estimates and uncertain measurements. They have also been elaborately adjusted until they produce results the modellers deem appropriate. This is then called "optimising".

### **Climate catastrophe**

Different models give different outcomes, and all can be "optimised" to produce quite different results. Predictions of climate catastrophe are not based on either measurements or models, but are simply speculations about possible consequences. Speculation of possible benefits is equally plausible.

Regardless of popular or even scientific opinion, catastrophic global warming remains highly uncertain. It is, however, distracting public attention from a threat that is much more imminent and certain, and thus prohibiting consideration of the only clear interim solution that can be implemented in the necessary time frame.

Liquid fuel for transport and mobile machinery is vital to our economy. Present global demand is pressing the limits of production. Despite significant advances in exploration technology, development of new discoveries is not keeping pace with increasing demand.

Tight supply has resulted in a 400 per cent price increase over the past decade. Ongoing growth in demand, shortages, significant further price rises and a dampening effect on the global economy are almost certain over the next decade.

Irrespective of global warming, alternative energy technology must be developed, but its

effective adoption will require decades. Petrol and diesel from coal is a proven technology and can produce fuel cheaper than at current prices. A plant can be ordered now and be producing in a few years. Oil from shale also looks promising, but still has some unanswered questions.

Despite the current boom, Australia's economy is in a highly vulnerable position. Manufacturing is in decline and, at 13 per cent of GDP, is among the lowest in the developed world.

The trade balance remains in chronic deficit, with no foreseeable improvement. Foreign debt is growing at twice the rate of the economy. At over \$500 billion - that is, greater than 50 per cent of GDP - its level is the highest in the developed world.

The current boom depends on high commodity prices; but commodity booms normally last only a few years before increased production, spurred by high prices, brings prices down again and ends the boom. With or without any added effect from a global economic slowdown, an end to the boom will result in a fall in the exchange rate of the Australian dollar and a blow-out in foreign debt.

In the increasingly likely event of fuel shortages leading to substantial price increases and a global recession, a large debt obligation that could not be met would result in a collapse of the \$AUD.

Our being dependent on imports for most manufactured goods would exacerbate the problem. By contrast, having an economy that is independent of world markets for our own energy needs would be a huge advantage.

Australia's contribution to global CO<sub>2</sub> emissions is about 1.4 per cent. This is equal to about six months' growth in China's emissions. Natural "sinks" of CO<sub>2</sub> (i.e., things that use it up) over Australia's land and exclusive economic zone (EEZ) absorb half again more than this. Whatever we do or don't do will be trivial to the global situation, either in quantity or even as an example.

Global warming is a distant and uncertain possibility of a problem that may or may not actually exist. It can only be meaningfully addressed by developments that will require decades and, in any event, must be undertaken even without the threat of warming.

Severe economic hardship, however, is an imminent probability. This could be greatly alleviated by development of Australia's own liquid-fuel supplies. It would be far easier to do this now in a time of prosperity than trying to do so in a recession. Having such capacity already in place might well even avert the problem altogether.

From the basic radiative physics through all of the myriad complexities of hydrology, meteorology and oceanography to the influences of orbital mechanics and solar activity, climate is a vast interacting system of immense complexity. Every aspect is subject to differing interpretations and high levels of uncertainty.

The claim that the threat of global warming is 90 per cent certain is simply a figure of speech reflecting the speaker's commitment to a belief. It has no mathematical basis, and should be seen as only marginally less certain than the 100 per cent certainty professed by religious devotees that theirs is the one true faith.

## **Hypothetical risk**

Precaution in the face of uncertainty may sound sensible, but the realm of hypothetical risk is without limit. Risks do not pop into existence just because they have been proposed. Many perceived risks turn out to have no reality. Remember the Y2K millennium bug scare?

We cannot build fortresses against every shadow of doubt. Risks must be carefully evaluated and any proposed action weighed against alternatives as well as consideration of its own consequences.

Precaution itself is not without risk. Obsessing over distant uncertain risks, while ignoring immediate consequences, is poor precaution. Drastic cuts to carbon emissions to prevent global-warming is to climate what anorexia is to obesity.

A global-warming catastrophe will become a self-fulfilling prophesy if it leads us to do nothing to prepare for coming fuel shortages.

**- Dr Walter Starck is a marine biologist with many years' experience in reef biology on the Great Barrier Reef.**