
Is Australia's climate changing Australia?

Woollahra Speaker's Forum
Woollahra Council Chambers, Sydney
Thursday 15th March 2007

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You may be wondering why, all of a sudden, climate change is the new world peace - daily front page news. The latest International Panel (IPCC) report released last month, (best estimate) projects our world will warm between 1.8 degrees, even if we act now, and 4.0 degrees by the end of this century if we do nothing. That's on top of the 0.6 degrees warming in the last 30 years.

If you understand climate history these are truly terrifying numbers.

Let me put my interpretation on these figures. Yes, the world has gone through many climate shifts in the past. Ice cores in Antarctica dating back 800,000 years show these cycles, and the science on why they occurred is now well understood. For example, 120,000 years ago the earth's temperature was about the same as it is today, but 20,000 years ago it was about 4 degrees cooler.

Climate history is a subject for another forum, but what I am sure will surprise you is that for the past 1 million years, the earth's environment has actually been cooler than at any time our science can measure over the past 200 million years. Just hold that thought for a moment.

The other surprising fact that struck me when I read the literature, is that for the past 10,000 years or so – the time when humans created agriculture, developed our cities, built the industrial revolution, the earth has experienced a peak of relatively warm weather.

So the question that has intrigued me is, OK, the world has been 2, 3 or 4 degrees cooler several times over the past million years, but when was it 2, 3 or 4 degrees warmer, because that's what the scientists tell us global warming will cause? And the answer to that question is staggering.

The last time our planet was one degree warmer was about 300,000 years ago, but that pales into insignificance when you discover that the last time our world was 4 degrees warmer than today is not measured in thousands of years or even hundreds of thousands of years. The last time our world was 4 degrees warmer than today was something like 40 million years ago.

If we don't take action to address climate change now, climate scientists are telling us that our civilisation could be faced with levels of warming in the next 100 years that our planet has not experienced for 40 million years.

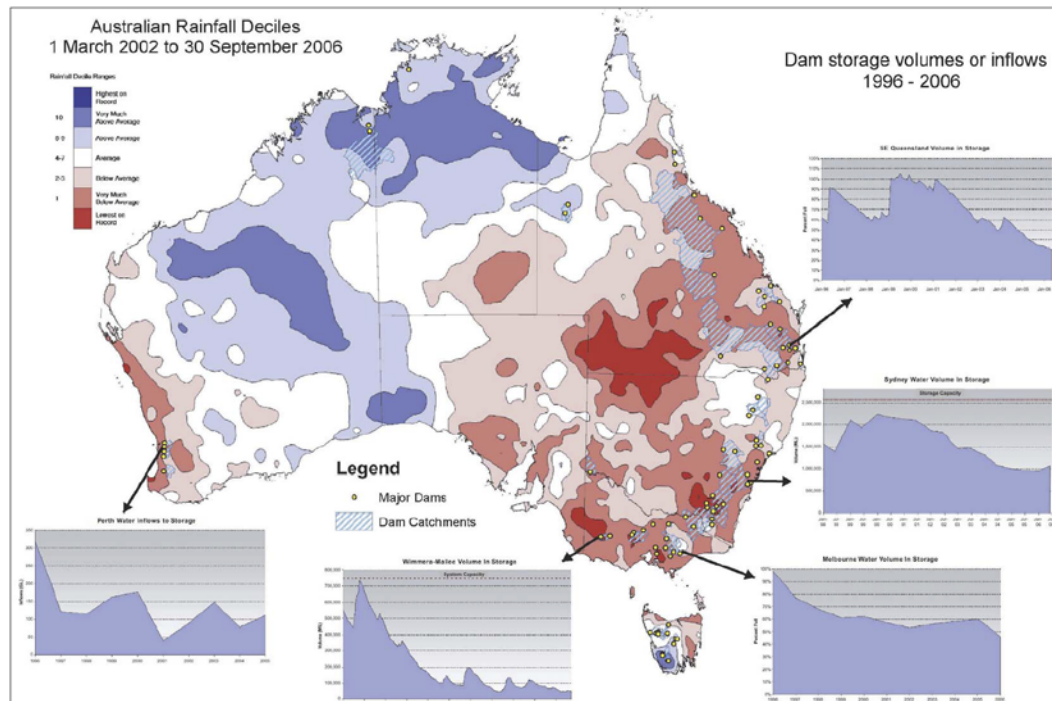
What will our world be like then? The answer is I don't know, but I can tell you what it was like the last time our world was 4 degrees warmer. Antarctica was covered in rainforest and alligators swam in swamps in the Arctic.

For those who thought climate change was about Polar Bears, the significance of even one or two degrees warming is beginning to hit home.

In the past 100 years, Australia has warmed 0.9 degrees and the projections are that we will warm even more over the next 50.

When you weigh up the evidence, it appears that southern Australia is now experiencing a step change in its weather patterns, and we're already starting to talk about having to move our farms north.

This change in climate in Australia may be part of a natural cycle or it might be caused by climate change or it might be a combination of both. We don't know for certain, we can't know, but what we do know is that our continent has been getting hotter. We do know that the recent decline in rainfall is consistent with what the global climate models have predicted would happen in Australia as a result of climate change, and we do know that science is warning us of further uncertainty as a result of climate change.



We are already going to have to adapt to the consequences of climate change that we have set in motion. But the scale of adaptation we will need to take will depend on the speed at which we act to address the problem.

That's the science as it stands today. The overwhelming consensus of scientific opinion is that the world is warming as a consequence of human activity.

Let me now turn to the core of my talk today, the economics of climate change, because we can't, as a society, make an informed decision about the risks unless we understand both sides of the debate.

In October last year, the former Chief Economist of the World Bank, Sir Nicholas Stern released his long awaited report on the Economics of Climate Change. This was a significant milestone in the public debate because, finally, someone looked at the cost of doing nothing, and his conclusions have stunned the business world. He found that the costs of doing nothing were more than the costs of fixing the problem – far more in fact.

This is no longer a debate on whether man's activities are causing the climate to change, it's now a debate about how to address it. This is the greatest challenge of our generation. It presents us with threats, it also presents us with opportunities. It could herald the end of our civilisation, but it could also drive the next industrial revolution.

Nobody set out to destabilise the world's climate. The people who built the power stations, the steam engines, and the motor cars were not evil, they were actually the hero's of their generation. Their machines advanced human welfare and created our western civilisation.

However, we have now discovered that the fossil fuels that power the machines are changing our world's weather. Carbon pollution has the potential to seriously damage the very civilisation the industrial revolution helped create.

What I want to show you today is that, using conservative economics, addressing climate change is not a conflict between economic growth and the environment. This is a contest of values, on whether we are prepared to take responsibility for the future or whether we simply vacate the space and leave our future to the vested interests of today.

Fourteen years ago Australia joined with the rest of the world in ratifying the Framework Convention on Climate Change. We agreed to stabilise *'greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system'*. Fourteen years, half a generation, and the world still can't agree on a plan. The challenge before us is enormous.

This first graph shows what the world's climate scientists tell us we need to do if we are to avert serious damage to the world's climate system.

It's a truly frightening graph. We need to not just stop the explosive growth in emissions, we actually need to cut existing emissions by at least 60 per cent within the next 40 years.

It's no wonder people are frightened into inaction. To give up the machines means giving away our civilisation.

But they need not be frightened. We don't need to turn our back on the industrial revolution, we just need to change the way we power our machines.

Let me put the economics, as this issue affects Australia, in proper perspective.

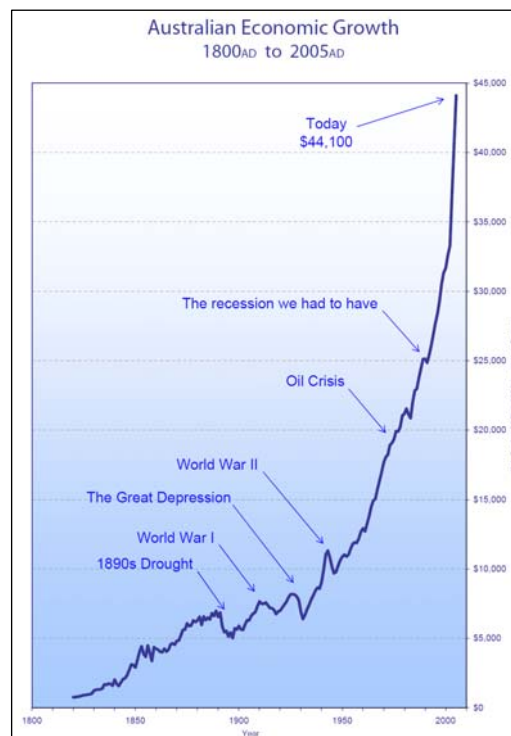
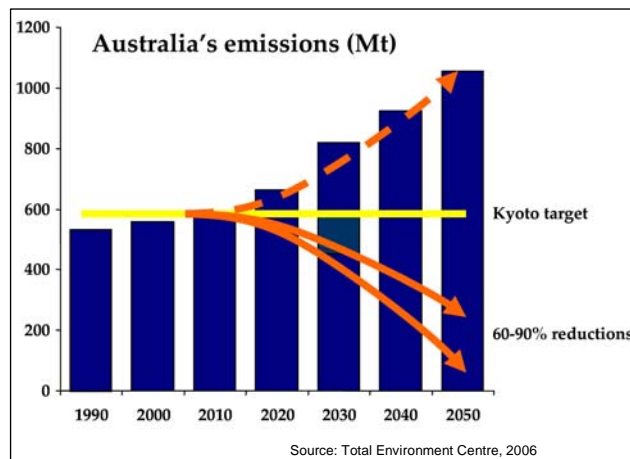
This second graph shows you the economic history of modern Australia. It shows the explosion of wealth in Australia since the industrial revolution – how the western world has embraced the democratic capitalist model as the vehicle for human advancement with spectacular success.

By the time Australia had become a nation in 1901, average incomes had reached \$6,000 in today's money.

But that was just the beginning. Just look at the economic growth since world war two.

Today our average income in this country is over \$44,000 for every man woman and child. We are eight times more wealthy than our grandparents, and we live in a world beyond their wildest imagination.

The 2002 Intergenerational Report prepared by the Australian Treasury, predicts that, short of



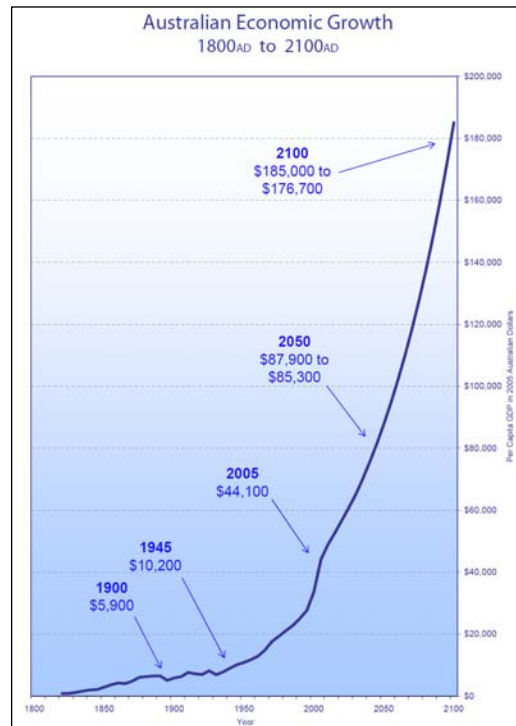
any unexpected shocks, this explosion in wealth will continue between now and 2050, at between 1.5 and 2.1 per cent of GDP per annum.

If the lower rate of 1.5 per cent per annum is projected over the following 50 years, at the end of this century, living standards in Australia will rise from \$44,000 per person, to over \$185,000 per person. And as you know, Treasury is a very conservative agency.

That's right, by the end of this century, over \$185,000 for every man, woman and child in today's dollars.

Now I know what some business people in the audience tonight are thinking – yes, we've all seen these hockey stick graphs before. But bear with me – remember, to economists, the impact of compound economic growth is well known and underpins many of your long range investment strategies. But most people are not financiers.

We all need to reflect on this graph for a moment. No matter how well you understand economics, the impact of these figures are as unimaginable to us today as it would have been unimaginable for our grandparents, at the turn of last century, to conceive the world they were creating for us. But here's the key – our behaviour today is putting all this at risk ... and for what? We're putting it all at risk because we believe it is wealth or the environment.



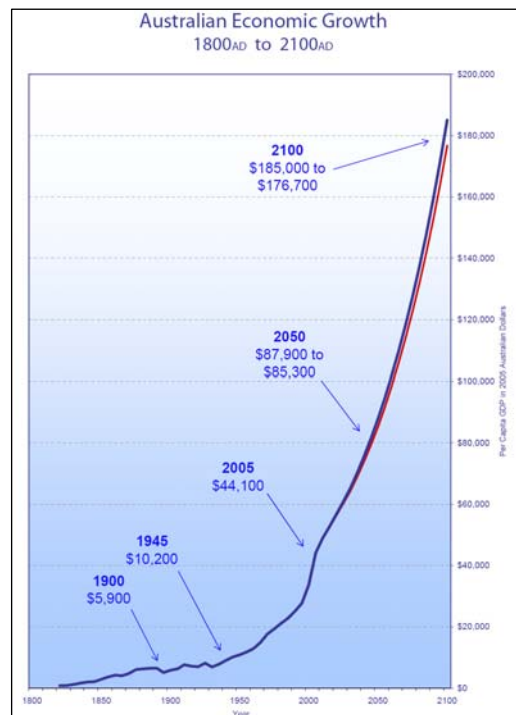
This final graph should leave your jaw on the ground. The blue line is, as I said, projected economic growth based on the Treasury projections. The red line is based on the best available international modelling of the economic impact of deep cuts in global emissions, involving high income countries reducing their greenhouse footprint by at least 60% by 2050.

Just compare the extrapolated economic growth projections from our Treasury and how it would differ if, according to the latest economic estimates, the world stabilised CO₂ emissions.

It doesn't look at all like the recession we've been conned into believing will happen does it? Far from it. We can have an annual income in today's dollars of \$185,000 and risk everything, or an annual income of \$177,000 and make our contribution to stabilising the world's climate.

By the way, this figure assumes that the economic impact on Australia is around three times the average impact for the world as a whole. I had to do this because if I didn't you wouldn't be able to see any difference!

We are presented with a very powerful morale choice, because risking our climate for the sake



of an infinitesimally small amount of economic growth is not heroic – it is greed and it puts at risk everything we have built.

We simply have to stop carbon pollution entering the atmosphere. There are many innovative things we can do, but we cannot hope to fix the problem unless our governments put a cap the level of carbon that's allowed to be emitted.

We can do it by regulation, but that would mean governments trying to pick winners on a scale we have never seen before in Australia. It means they will be intruding into just about everything we do. Russia tried that model and it was an economic, social and environmental disaster. Or we can trust the system that created our wealth, put a price signal on carbon and allow industry to find the cheapest way to fix the problem for us.

They can do this by either putting in a carbon tax or by setting up an emissions trading scheme. The advantage of a carbon tax is that it's simple to establish. The downside is that we will have to negotiate the level time and time again. After 15 years, we can't even get our government to agree to set a price.

The advantages of an emission trading scheme are that it allows the market to set the price and it allows the government to set long term emission targets. This gives industry more certainty. The downside is that it's very complex because we need to track all these permits and not all nations have the sophisticated systems in place to do so, so the 'property right' is at risk and business is therefore reluctant to invest.

The economist and Australian Reserve Bank Board Member, Professor Warwick McKibbin proposes an innovative hybrid of the two, which builds on the experience over the last century in managing our economy.

I'll leave the final decision to economists – but what is essential is that governments put a price signal on carbon by setting legally binding deep, but long range cuts. In doing so, we will create the economic climate for industry to construct long range investment plans to drive the technical innovation we need.

Australians want to be part of the solution to this global problem and have said repeatedly that we are prepared to pay a financial price to do so – a moral stand we should all be proud of. But the analysis I've presented to you today demonstrates just how small a price we need to pay - provided we act now. 2020 will be here and gone before you even know it and so might the stability of our climate system. What will hindsight tell us then?

Let me close by reiterating that the carbon pollution problem is fixable – it need be no more difficult than cleaning up air pollution in Sydney the 1960s, but we are taking staggeringly higher risks by delaying action.

The sooner we put a price on carbon pollution in Australia, the sooner our engineers and scientists can help the world get on and fix the problem, and the sooner our industry can position our national economy to take advantage of this 21st century reality.

Thank you.

Acknowledgement

This paper was prepared with advice from Dr Steve Hatfield Dodds, CSIRO Economist and President of the Australian Society of Ecological Economics, and Ms Fiona McKenzie, Policy Analyst, Wentworth Group of Concerned Scientists.