A Cool Look at Global Warming

The Economics and Politics of Climate Change

NIGEL LAWSON

THE SIR RONALD TROTTER LECTURE
2007
NEW ZEALAND BUSINESS ROUNDTABLE

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The Sir Ronald Trotter Lecture

SIR RONALD TROTTER was the first chairman of the New Zealand Business Roundtable in its present form, a position he held from 1985 to 1990.

Among his many other roles he has been chief executive and chairman of Fletcher Challenge Limited, chairman of the Steering Committee of the 1984 Economic Summit, a director of the Reserve Bank of New Zealand, chairman of the State-owned Enterprises Advisory Committee, chairman of Telecom Corporation, chairman of the National Interim Provider Board, a chairman or director of several major New Zealand and Australian companies, and chairman of the board of the Museum of New Zealand Te Papa Tongarewa.

He was knighted in 1985 for services to business.

This lecture was instituted in 1995 by the New Zealand Business Roundtable to mark Sir Ronald Trotter's many contributions to public affairs in New Zealand. It is given annually by a distinguished international speaker on a major topic of public policy.

The thirteenth Sir Ronald Trotter lecture was given by Nigel Lawson at the Auckland War Memorial Museum on 15 November 2007.

Nigel Lawson

NIGEL LAWSON, Rt Hon the Lord Lawson of Blaby, has been a member of the British House of Lords since 1992.

After studying at Westminster and Christ Church, Oxford, and serving in the Royal Navy, he began his career as a financial journalist and wrote for *The Financial Times* and *The Sunday Telegraph* before becoming editor of *The Spectator* in 1966.

He was elected as a member of parliament for Blaby in Leicestershire in 1974, a position he held until retiring at the 1992 general election.

On the election of the Conservative government led by Margaret Thatcher in 1979, he became Financial Secretary to the Treasury (1979–81), Secretary of State for Energy (1981–83) and Chancellor of the Exchequer (1983–89).

His corporate roles have included positions as non-executive director of Barclays Bank, chair of Central Europe Trust, and (currently) chair of Oxford Investment Partners.

He is the author of *The View from No 11: Memoirs of a Tory Radical* (Bantam, 1992) and a best-selling diet book.

Introduction by

Roger Kerr

executive director

New Zealand Business Roundtable

IT IS MY VERY PLEASANT DUTY to introduce our guest speaker, Nigel, Lord Lawson, to give the 2007 Sir Ronald Trotter Lecture. This is the thirteenth lecture in a series that was inaugurated in 1995 to recognise Sir Ron's role as the New Zealand Business Roundtable's founding chair and his many contributions to business and public affairs in New Zealand. We are delighted that Sir Ron and Lady Margaret Trotter are with us this evening.

I would also like to take this opportunity to thank Singapore Airlines for their generous support in bringing Lord Lawson to New Zealand to present this lecture. Their assistance is greatly appreciated.

The Business Roundtable's mission is to promote policies for a better New Zealand. We have done research and put forward ideas on many topics, and not just ones of narrow interest to the business community. Tonight's speaker will address a topic that has economic, environmental and political dimensions that governments are wrestling with around the world.

We are very honoured to have as our speaker a man who has had distinguished careers in journalism and politics, and who is still active in British politics as a member of the House of Lords. He has come to us from what sounds like an idyllic place of residence in southern France.

This is his first visit to New Zealand, and he is going on to speak in Sydney in 10 days' time.

In his career in journalism, Nigel Lawson wrote for *The Financial Times* and *The Sunday Telegraph*, and became editor of *The Spectator* before entering parliament in 1970.

On the election of Margaret Thatcher's government in 1979, he became Financial Secretary to the Treasury, where he oversaw the abolition of exchange controls, and then Secretary of State for Energy, where he prepared for what he saw as the inevitable coal miners' strike.

After the Thatcher government's re-election in 1983, he succeeded Sir Geoffrey Howe as Chancellor of the Exchequer. He was at the centre of that government's programmes of monetary and fiscal discipline, tax reform, trade union reform, deregulation and privatisation, which were watched closely, and in many respects followed, here in New Zealand. He did not achieve all his goals; for example, he did not manage to persuade Margaret Thatcher to make the Bank of England independent or to drop the idea of the poll tax.

When he resigned in 1989, the London *Economist* wrote that he "was a main architect of the Thatcher Government's economic success; if there have been the beginnings of a British economic miracle, they are in large measure Mr Lawson's."

In his own words, taken from his fine political memoir *The View from No 11: Memoirs of a Tory Radical*, "It was a great adventure on which we embarked in 1979; an adventure to rescue Britain from economic and political decline of a kind that is now barely remembered … and – despite universal doubt and cynicism – seeing it through." The Thatcher/Howe/Lawson reforms have been built on more than they have been changed by the governments that followed.

A colleague well known to Nigel Lawson and the Business Roundtable is David Henderson, formerly Chief Economist of the Organisation for Economic Co-operation and Development in Paris. He once told me how impressed he was by Lord Lawson's book. In particular, he said that

"what comes across, right through the book, is the author's concern with the truth."

I see that spirit of inquiry and the courage to want to do the right thing in Lord Lawson's engagement with the issue of climate change in recent years. He was a member of a House of Lords select committee that issued a major report, *The Economics of Climate Change*, two years ago, and he is publishing a book on the subject next year.

The debate on global warming has hotted up, so to speak, in the past 12 months with the publication of the Stern Review, Al Gore's movie, and the just-completed Fourth Assessment Report from the Intergovernmental Panel on Climate Change.

The debate has had its lighter sides: satirists have had a lot of fun over the fact that Al Gore's Tennessee mansion wolfed down 221,000 kilowatt hours last year – that's 20 times more electricity than the average American household. It seems he burns up the electricity sending out faxes every five minutes urging everyone else to use less. And the eco-messiah's Oscar-winning movie turns out to be a crockumentary. A couple of days before Gore picked up his Nobel Peace Prize, a British High Court judge found that the movie contained nine major factual errors and was prone to "alarmism and exaggeration".

However, the issue is a serious one, and the business community in New Zealand certainly takes it seriously. The Business Roundtable is on record as saying the science suggests some element of human-induced warming – we are not 'deniers'. Most, if not all, of our member firms are doing things to save energy and reduce emissions in some way.

But there are many steps between recognising that warming is an issue and deciding what to do about it as a matter of public policy. As one commentator put it, "If you smell smoke at home, it would be silly to do nothing until you actually see flames, but you should also not hose down the house after one whiff of what might be smoke."

The harsh reality is that, given present technology, New Zealand cannot reduce emissions easily without reducing living standards. New

Zealand needs to play its part as a good international citizen on this issue and to protect its commercial interests. However, many in business are concerned that the government is rushing into an ambitious carbon trading scheme without levelling with the public on the costs that New Zealanders will be forced to bear. Overseas studies suggest that in time these could be of the order of several thousand dollars a year for every household. And without widespread understanding and acceptance of the costs and benefits of policy action, any initiatives are likely to be politically unsustainable, as we have seen several times in recent years.

With the government about to introduce legislation to implement its proposed emissions trading scheme, and possibly to ban new base-load thermal power stations, it has turned out that Nigel Lawson's visit is well-timed.

His brief is not to comment on the specifics of the New Zealand debate but to set out for us some broader perspectives, based on a lifetime of involvement in difficult and controversial economic and political issues, on one of the major challenges facing all nations.

Ladies and gentlemen, please join me in welcoming Lord Lawson to New Zealand and inviting him to deliver the 2007 Sir Ronald Trotter Lecture, *A Cool Look at Global Warming: The Economics and Politics of Climate Change*.

A Cool Look at Global Warming: The Economics and Politics of Climate Change

Nigel Lawson

OVER THE PAST HALF-CENTURY we have become used to planetary scares of one kind or another.

But the latest such scare – global warming – has engaged the political and opinion-forming classes to a greater extent than anything since, a little over 200 years ago, Malthus warned that, unless radical measures were taken to limit population growth, the world would run up against the limits of subsistence, leading inevitably to war, pestilence and famine.

This is partly perhaps because, at least in the richer countries of the world, we have rightly become more concerned with environmental issues. But that is no excuse for abandoning reason.

It is time to take a cool look at global warming.

By way of preamble, I readily admit that I am not a scientist. But nor are those who have to take the key decisions about this scientists, let alone climatologists. They are responsible politicians who, having listened to the opinions of the scientists, have to reach the best decisions they can in the light of the expert evidence available to them – just as I did, for example, in a not wholly unrelated field, when I was Energy Secretary in Margaret Thatcher's first government in the early 1980s.

More important still, the science is only part of the story. Even if the climate scientists can tell us what is happening and why – not that they all agree about this, anyway – they cannot tell us what governments should be doing about it. For that we also need an understanding of the economics, of what is the most cost-effective way of tackling any problem that may arise. And we also need an understanding of the politics, of what measures are politically realistic, a particularly tricky matter given the inescapably global nature of the issue.

It is frequently claimed, by those who wish to stifle discussion, that the science of global warming is 'settled'. Even if it were, for the reasons I have already indicated – political, but above all economic – that would not be the end of the matter. But in fact, while some of the science is settled, there is much that is not.

So let's start with the facts.

It is customary to focus on three of them.

The first is that, over the past hundred years, the earth has become slightly warmer. To be precise, there appears to have been a rise in global mean annual temperature of some 0.7°centigrade.

The second is that, over the past hundred years, the amount of carbon dioxide in the earth's atmosphere has risen sharply, by more than a third, largely as a result of carbon-based industrialisation – in particular, electricity generated in coal- and oil-fired power stations and motorised transport.

And the third fact (and this is the settled science) is that carbon dioxide is one of a number of so-called greenhouse gases – of which far and away the most important is water vapour – which in effect trap some of the heat we receive from the sun and thus keep the planet warmer than it would otherwise be.

So is it not clear that the warming we have seen over the past hundred years must be due to the massive rise in human-induced carbon dioxide emissions, and that unless we substantially decarbonise the world economy the warming will continue, bringing doom and disaster in its wake?

No: it is not at all clear.

In the first place, while atmospheric carbon dioxide concentrations have grown steadily over the past hundred years, and indeed continue to grow briskly, the warming has occurred in fits and starts. To be precise, it has been confined entirely to two periods: from 1915 to 1940 and from 1975 to 1998. Between 1940 and 1975 there was a slight cooling; and so far this century (and contrary to all predictions) there has been no trend one way or the other.

So clearly carbon dioxide is only part of the global temperature story: it is very far from being the whole story.

And this is borne out by the longer-term historical record. It is well established, for example, that a thousand years ago, well before the onset of industrialisation, there was what has become known as the mediaeval warm period, when temperatures were probably at least as high as, if not higher, than they are today. Going back even further, during the Roman Empire, agricultural records suggest that it was probably even warmer.

So we are left with a double uncertainty.

First, while we know that, other things being equal, rising atmospheric concentrations of carbon dioxide will warm the planet, we have no true understanding of how much they will do so.

And second, we know that in fact other things are very far from equal. So even if we did know the answer to the first question, we would still be unable to predict what the world's temperature will be a hundred years from now.

These uncertainties clearly have a profound bearing on the economics of global warming, and thus on the policies it is sensible to pursue.

For while we can do our best to estimate the cost of substantially decarbonising the world economy, we have no idea of what benefit that will bring in terms of a lower mean global temperature than would otherwise be the case.

Not that it is clear, even if we could predict the temperature of the planet a hundred years from now (which we can't), how much economic damage a given rise in temperature would do.

It was to advise governments on these issues that the Intergovernmental Panel on Climate Change (or IPCC) was set up in 1988, under the auspices of the United Nations.

The IPCC concludes, on the basis of, to say the least, very slender evidence, that "most" – note, not all – of the warming that occurred during the last quarter of the twentieth century was very likely due to the growth of atmospheric carbon dioxide concentrations.

But even if – and there is clearly a case for erring on the side of caution – this is so, and even if, as the IPCC blithely assumes, the natural forces that affect the world's temperature in often unpredictable ways can be safely ignored, the policy conclusions that are widely believed to follow from this are very suspect indeed.

To get a line on how much global warming there is likely to be over the next hundred years, and what the practical impact of the consequent rise in global temperatures might be, the IPCC adds to the assumed nature of the link between atmospheric concentrations of carbon dioxide and temperature, estimates of how much carbon dioxide emissions are likely in fact to increase over the next hundred years, based on a number of different economic development scenarios; and then assesses the likely consequences of the resulting rise in world temperature.

All the IPCC's scenarios, incidentally, assume that, over the present century, faster economic growth will mean that living standards in the developing world, in the conventional sense of gross domestic product (GDP) per head of population, will to a very considerable extent catch up with living standards in the developed world.

In other words, by 2100 poverty really has become history. If nothing else, this should cheer up those who have been told that disaster stares us in the face if we do not take urgent action to save the planet.

It is only fair to add that what I have just spelled out is what emerges from the IPCC's scenarios before deducting the projected costs to the economy of twenty-first century global warming. I will of course come to that; and it will be seen that it does not fundamentally change the picture. It is true that the IPCC's projections of twenty-first century economic

growth may prove to have been too optimistic; but in that case, given the assumed growth–emissions–temperature nexus, there will be less global warming, too.

As it is, the temperature projections it does come up with in its fourth and latest report range from a rise in the global average temperature by the year 2100 of 1.8°C for its lowest emissions scenario to one of 4°C for its highest emissions scenario, with a mean increase of 3°C. It describes these as its "best estimates".

At this point, it might be a good idea to leave the rarefied world of the IPCC for a moment and take a brief reality check.

Is it really plausible that there is an ideal average world temperature, which by some happy chance has recently been visited on us, from which small departures in either direction would spell disaster? Moreover, while a sudden change would indeed be disruptive, what is at issue here is the prospect of a very gradual change over a hundred years and more.

In any case, average world temperature is simply a statistical artefact. The actual experienced temperature varies enormously in different parts of the globe; and people, whose greatest quality is their adaptability, have successfully colonised most of it. Two countries at different ends of the earth, both of which are generally considered to be economic success stories, are Finland and Singapore. The average annual temperature in Helsinki is less than 5°C, that in Singapore is in excess of 27°C, a difference of more than 22°C. If humans can successfully cope with that, it is not immediately apparent why they should not be able to adapt to a change of 3°C, when they are given a hundred years in which to do so.

The IPCC seeks to assess the likely impact of projected global warming over the next hundred years in two ways. First, it looks separately at five major headings: water, ecosystems, food, coasts and health. Then it adds all these impacts together to provide an overall figure of the cost to the world of the projected warming.

This last is of course intended to be the net cost. It is clear that while warming brings costs, it also brings benefits. Given the wide geographical

variation in temperatures around the world, it is obviously likely that, while in the warmer regions the costs could be expected to exceed the benefits, in the colder regions the benefits might well exceed the costs. The IPCC report claims to take into account both costs and benefits, yet it devotes large amounts of space to the costs and very little to the benefits. It is difficult not to sense a lack of even-handedness, leading to a bias in the overall assessment.

But let us first take a brief look at the IPCC's five impact headings.

The first is water. There is indeed a worldwide water problem, but it has nothing whatever to do with global warming. Indeed, scientists agree that carbon dioxide-induced warming will, if anything, tend to increase, rather than reduce, rainfall. The problem is the huge increase in the world's population, which has led to a massive increase in the demand for fresh water, without any corresponding increase in the effective supply. Thus improved water resource management, and above all the proper pricing of water, are of the first importance. But what is abundantly clear is that cutting back on carbon dioxide emissions is irrelevant.

As to ecosystems, here again it is well established that those animal species at risk of extinction are threatened far more by other factors, such as deforestation, than they are by warming, which is, at most, of marginal significance.

The IPCC's third heading, food, is clearly of the first importance to people. But what it has to say here has not been sufficiently reported. I quote, "Globally, the potential for food production is projected to increase with increases in local average temperature over a range of 1–3°C, but above that it is projected to decrease." It will be recalled that the mean temperature increase suggested by the IPCC's various scenarios for the end of the present century is some 3°C.

Moreover, this is an area where the scope for adaptation is particularly pronounced. It is not simply a matter of farmers being able to make better use of irrigation and fertilisers, and indeed to switch to strains or crops better suited to warmer climes, should the need arise – something,

incidentally, that will happen autonomously, without any need for government intervention. It is also because we are in the early stages of a revolution in agricultural technology, through the development of bio-engineering and genetic modification.

The IPCC's fourth impact category is coasts, where it is concerned about sea level rise, brought about by a combination of ocean warming expanding the volume of water and some melting of the Greenland and West Antarctic ice sheets, causing coastal flooding in low-lying areas. Sea levels have, in fact, been rising very gradually for as long as records exist, and there is little sign of any acceleration so far – indeed, if anything, the reverse is the case.

The fifth and last of the IPCC's impact categories is health. There are, of course, very serious health problems of many kinds throughout much of the developing world, which need to be tackled in their own right – global warming or no global warming – much more urgently than they are being at the present time. There is no medical mystery about how to do so.

But the connection with global warming is, if anything, the reverse of what the IPCC assumes. The major cause of ill health, and the deaths it brings, in the developing world is poverty. Faster economic growth means less poverty but – according to the human-induced carbon dioxide warming theory, incorporated in the IPCC's scenarios – a warmer world.

Warmer but richer is in fact healthier than colder but poorer.

What, then, of the IPCC's overall figure for the likely net cost of a warmer world, on the assumption that no measures are taken to curb carbon dioxide emissions, and after carefully examining all the likely adverse consequences, and rather less carefully the benefits?

It will be recalled that the report's best estimates of the likely warming of the planet over the next hundred years range from a rise of 1.8°C to one of 4°C, depending on the emissions scenario chosen. The report then takes the upper end of the range, a 4°C warming – and claims that, overall, this would mean a loss, by the end of the twenty-first century, of

anything between 1 percent and 5 percent of global GDP. It adds that this is the global average figure, and that developing countries will experience larger percentage losses.

Given that this derives from the top end of the range, and given that the IPCC insists that all its scenarios are of equal validity, it is clear that, on the basis of the IPCC's own methodology, there may well be no net cost at all from global warming over the next hundred years: it may even be beneficial. But let us err on the side of caution, and take not only the top end of the IPCC's warming range – a rise of 4°C over the next hundred years – but also the top end of its projection of the net damages, a loss of 5 percent of world GDP.

At this point we need to do some simple arithmetic. Heeding the IPCC's very proper warning that the loss will be greater than 5 percent for the developing countries (and thus less than 5 percent for the developed world), I shall make the calculations on the assumptions of a 10 percent loss of GDP in the developing world and a 3 percent loss in the developed world.

Again, to err on the side of caution, let us look at the gloomiest of the IPCC's economic development scenarios, according to which living standards (measured in the conventional way as gross domestic product per head) would rise, in the absence of global warming, by 1 percent a year in the developed world, and by 2.3 percent a year in the developing world. It can readily be calculated – using, to repeat, a cost of global warming of 3 percent of GDP in the developed world and as much as 10 percent in the developing world – that the disaster facing the planet is that our great-grandchildren in the developed world would, in a hundred years' time, be 'only' 2.6 times as well off as we are today, instead of 2.7 times; and that their contemporaries in the developing world would be 'only' 8.5 times as well off as people in the developing world are today, instead of 9.5 times as well off.

And this, remember, is the IPCC's very worst case – and one based, moreover, as they all are, on a ludicrously pessimistic assumption of people's ability to adapt to gradual warming, should it occur.

Indeed, the single most serious flaw in the IPCC's analysis of the likely impact of global warming is its grudging and inadequate treatment of adaptation, which leads to a systematic exaggeration of the putative cost of global warming – if, indeed, over the next hundred years there is any net cost at all.

The IPCC prefaces its assessment with the statement that, "The magnitude and timing of impacts will vary with the amount and timing of climate change and, in some cases, the capacity to adapt". But adaptation will always occur. The capacity to adapt is arguably the most fundamental characteristic of humans. We have adapted to different temperatures over the millennia we have been around, and we adapt today to widely different temperatures around the world. And that adaptive capacity is increasing all the time with the development of technology.

Yet the absurd concept of static 'adaptive capacity' is central to the IPCC's analysis. Thus in its review of the dangers in different parts of the world, it explicitly acknowledges that, in the case of Australia and New Zealand, these will be limited by the fact that "The region has substantial adaptive capacity due to well-developed economies and scientific and technical capabilities". Presumably, the same applies to Europe and North America, although, curiously, the IPCC does not say so. But it does express concern about the effect of projected warming on the poorer regions of the world, particularly in Africa and parts of Asia, because of their "low adaptive capacity".

This somewhat patronising judgment seems ill-founded for three reasons. First, as we have seen, on the IPCC's own economic growth projections, on which its temperature projections rest, the poorer regions are, for the most part, not going to be poor in a hundred years' time. Second, for those parts that do remain poor, overseas aid programmes would clearly be focused on improving their adaptive capacity, should the need arise. And third, there will almost certainly be substantial technological development over the next hundred years, which will significantly enhance adaptive capacity worldwide, in many cases far beyond what it is at the present time.

In short, the IPCC's analysis and conclusions are seriously undermined by the systematic underestimate of the benefits of adaptation, deriving both from its assumption that 'adaptive capacity' is severely and permanently constrained by economic underdevelopment in the developing world, and its assumption that, for the world as a whole, it is constrained by the limits of existing technology; that is, the assumption that there will be no further technological development over the next hundred years. This last is clearly absurd in the important case of agriculture and food production, and is implausible in general. As a result, the IPCC's overall cost assessment inevitably suffers from a pronounced upward bias.

It is true that some forms of adaptation, such as the creation or improvement of sea and flood defences, would, if and when they became necessary, require government intervention. The IPCC, needless to say, adopts its characteristically downbeat approach to this, declaring that "Adaptation for coastal regions will be more challenging in developing countries than developed countries, due to constraints on adaptive capacity".

It must be said that the challenge ought to be a manageable one: the Dutch, after all, managed it pretty effectively even with the technology of the sixteenth century, and technology has scarcely stood still over the past half-millennium. But this might well be a suitable focus for overseas aid, should the need arise.

In short, even if the conventional scientific wisdom is correct, there remains the fundamental question of what is the most cost-effective way of addressing the likely consequences of global warming. Is it to adapt to them, as humans have adapted throughout the ages and throughout the world to the vagaries of the climate, or is it to attempt to prevent them, even if this means radically transforming the global economy at very considerable cost?

The answer, I believe, is clear.

The alarmists reply that global warming presents some threats to the planet that are so dire that adaptation is not possible. But there is nothing in the current state of climate science to warrant this.

Let's take a look at the three most frequently mentioned catastrophic consequences.

First, in the light of Katrina, hurricanes. The facts are that, of the 10 most severe Atlantic hurricanes since 1900, five occurred in the first half of the period and five in the second half. Seven out of the 10 occurred before 1975, that is to say, before the period when the bulk of the modest twentieth-century global warming began. The worst of all, by far, was the Great Miami Hurricane of 1926. In the eyes of the insurance industry, there has of course been a significant rise in hurricane damage over the years. But that is simply because the huge rise in both population and property values in the affected areas has inevitably caused a substantial increase in damage costs for any given tropical storm.

Next, the melting of the polar ice sheets, and its alleged effect on sea levels. Clearly, the melting of floating polar ice cannot cause any rise in sea levels – just as the melting of ice cubes in your glass of water cannot cause the water to overflow the glass. The issue is solely about the land-borne ice at the poles. And the overwhelming mass of this, and thus of most significance for global sea levels in this context, is not over Greenland in the north but over the vast continent of Antarctica in the south.

Here it is perfectly true that the West Antarctic ice sheet, covering the peninsula that points its finger towards the southern tip of South America, is showing evidence of melting and glacier retreat. But the West Antarctic peninsula accounts for only around 10 percent of Antarctic land-borne ice, and has a different climate from the rest of Antarctica. In most of the other 90 percent of the continent, according to the most recent research, the ice sheet appears to be growing.

Finally, in Europe in particular, there is a fear of a reversal of the Gulf Stream and thus – paradoxically – the onset of very much colder weather.

Although there is ample evidence of fluctuations in the strength of the Gulf Stream from time to time, research has shown no sign of any secular slowdown over the past decade. Nor is there any reason to suppose that there will be even if there is further global warming over the coming decades, since the Gulf Stream is largely a surface current and thus a wind-driven phenomenon.

It is clear, therefore, that even after looking carefully at the worst nightmare scenarios the alarmists can conjure up, there is no reason to believe that, even if the IPCC's projections of global warming over the coming century are realised, which is unlikely, there is anything to which people cannot adapt.

Moreover, to the extent that there is a problem of global warming, it is manifestly a global problem. And if the chosen policy for addressing it is to cut back on carbon dioxide emissions, the cutback clearly has to be global, too. Thus, the perspective of the developing world is of the first importance. And it is in the developing world, particularly China and India, where emissions are growing fastest. Indeed, China is very soon set to overtake the United States as the single biggest source of emissions, if it has not done so already, chiefly because its rapidly growing economy is so heavily dependent on energy-intensive manufacturing industry.

Both China and India have made their position abundantly clear; and it has to be said that it is thoroughly understandable, and reflects the perspective of most of the developing world. Their overriding priority is to continue along the path of rapid economic growth and development. Only in this way can the widespread poverty that still afflicts their people be relieved.

They observe that the industrialised countries of the Western world achieved their prosperity thanks to cheap carbon-based energy, and they believe that it is now their turn to do the same. They add that if there is now a problem of excessive carbon dioxide concentrations in the earth's atmosphere, it is the responsibility of those who overwhelmingly caused

it to remedy it. At the very most, they are prepared to concede that, if and when their emissions per head of population have risen to the levels of emissions per head in the rich world, there might be the basis for an international agreement that would be fair for all. But until then, there can be no question of their agreeing to any restrictions on their emissions.

Indeed, following this year's G8 Summit in Germany, the official German news agency reported that "Chinese President Hu Jintao and Indian Prime Minister Manmohan Singh have created a new alliance to spearhead emerging economies' opposition to developed nations seeking to impose limits on their greenhouse gas emissions".

So where does this leave the prospect of an effective global agreement to prevent the further growth of carbon dioxide concentrations in the atmosphere? Not, it has to be said, in very good shape.

It is perfectly true that spokespeople for both the United States and the major developing countries are from time to time prepared to pay lip service to the idea of a global agreement on limiting emissions, provided the burden of doing so is equitably shared. But what the United States considers an equitable sharing of the burden is worlds apart from what China and India consider equitable; and there is no prospect whatever of this chasm – it is far more than a gap – being closed.

This, then, is where we are now. The Kyoto approach is dead and buried.

Admittedly, the European Union is still theoretically committed to going it alone, having agreed in principle to cut its emissions by 20 percent (below 1990 levels) by 2020. But the problem with one or more countries going it alone is not simply the heavy cost to those who do so. It is also the nugatory reduction in overall global emissions that this would lead to.

This is because the only practical way of cutting back on carbon dioxide emissions is to raise the cost of carbon-based energy, whether by taxation or by the rationing system known as emissions trading; so that

energy saving becomes more attractive and non-carbon-based energy more competitive. But as energy prices in, for example, New Zealand rise, with the prospect of further rises to come, energy-intensive industries and processes would progressively decline in New Zealand and expand in countries like China, where cheap energy remained available. No doubt New Zealand could, at some cost, adjust to this, but it is difficult to see the point of it. For if carbon dioxide emissions in New Zealand (which are in any event negligible in global terms) are reduced, only to be further increased in, for example, China, there will be no net reduction in global emissions at all.

Meanwhile, the most striking feature of the so-called climate change debate is the complete disconnection between the rhetoric and the reality. Despite the posturing of politicians throughout much of the world, despite the declarations that global warming is the greatest threat facing the planet, despite the Kyoto Protocol and despite innumerable international gatherings of the great and the good, little in practice has been done and global carbon dioxide emissions continue to rise.

The reason for this, of course, is that fine words are cheap, whereas the 70 percent reduction in global carbon dioxide emissions that would be required to stabilise carbon dioxide concentrations in the earth's atmosphere would be very costly indeed.

So how much would it cost to reduce carbon dioxide emissions to the extent allegedly required? The only honest answer is that we do not know; but all the signs are that it would prove very expensive indeed. One test is to consider how high a carbon tax would need to be in order to generate the necessary change in behaviour, both on the supply side and the demand side. And it is significant that this is something that those politicians who identify global warming as the greatest threat facing the planet are conspicuously reluctant to discuss, let alone to propose.

The IPCC, in its 2007 report, suggests that "the costs and benefits of mitigation ... are broadly comparable in magnitude" – although, in fact, as we have already seen, it greatly exaggerates the benefits of mitigation by its systematic undervaluation of adaptation.

But even if it were the case that the costs and benefits of mitigation are broadly comparable in magnitude, the fundamental question, when comparing the costs and the benefits – even if we accept the conventional wisdom so far as the science is concerned, and even if we assume that a global agreement is attainable, however unlikely that may seem – is this. How great a sacrifice is it either reasonable or realistic to ask the present generation, particularly the present generation in the developing world, suffering as it still does from extreme poverty, malnutrition, disease and premature death, to make in the hope of benefiting substantially better-off generations a hundred or two hundred years hence?

The answer is clear: not a lot. It is not that we don't care about future generations. It is that we *do* care about the present generation.

Nor does invocation of the so-called precautionary principle overturn this conclusion. The fact that climate science is so uncertain that we cannot be absolutely sure that there is not a catastrophe awaiting the people of the world a hundred or two hundred years hence cannot rationally be used as the basis for horrendously costly policy decisions now.

In a world of inevitably finite resources, we cannot possibly spend large sums on guarding against any and every possible eventuality in the future. Reason suggests that we concentrate on present ills, such as poverty and disease, and on future dangers, such as nuclear conflict and terrorism, where the probability appears significant – usually because the signs of their emergence are already incontrovertible. The fact that a theoretical future danger might be devastating is not enough to justify substantial expenditure of resources here and now, particularly since there are many other such dangers wholly unconnected with global warming.

So does all this mean that we should do nothing about global warming? Not quite, although doing nothing is better than doing something stupid. But there are, in fact, some sensible things that can be done.

It clearly makes sense to press ahead with research and development in technologies that might assist the process of adaptation should that be required.

Another form of research and development that is rightly taking place at the present time, although so far only in the United States, involves what has become known as geo-engineering; that is, the technology of cooling the planet, in relatively short order, should the need become pressing. The front runner here is the idea of blasting sulphur aerosols into the stratosphere, so as to impede the sun's rays. This is not as far-fetched as it seems. It is what happens naturally when large volcanoes erupt. The most recent such occasion was the eruption of Mount Pinatubo, in the Philippines, in 1991, which led to a two-year cooling of the earth's temperature, with no adverse side effects.

More importantly, there is, of course, the need to do whatever is needed to adapt to a warmer planet, should the late twentieth-century warming, which has for the time being paused, in due course resume, as the majority of climate scientists are currently predicting. For the most part this can and will happen spontaneously and autonomously, just as humans have always adapted to the environment around them, wherever they live, without any need for government intervention. But there are some exceptional areas – what the economists call the supply of 'public goods' – where governments do need to stand ready to act. The provision of adequate sea and flood defences is the most obvious example.

Moreover, as we have seen, even though the IPCC's projected warming over the next hundred years, if it occurs, may well not be harmful overall, there would be losers in the warmer regions of the developing world. Should this seem likely to occur, I believe we have a clear moral obligation to help them.

It is true that the record of overseas aid in promoting economic development is very disappointing. But that is no argument against assistance in, for example, the building of effective sea defences. Of course it would cost money. But quite apart from our moral obligation, it is only a minuscule fraction of what it would cost to attempt, by substantially cutting back on carbon dioxide emissions, to control the global temperature.

What is important is that the practical measures I have outlined tonight represent the sum total of what we should be doing. It has to be said that this is not the easiest of messages to get across – not least because the issues surrounding global warming are so often discussed in terms of quasi-religious belief rather than reason.

Indeed, the more one examines the current global warming orthodoxy, the more it resembles a Da Vinci Code of environmentalism. It is a great story, and a phenomenal best seller. It contains a grain of truth – and a mountain of nonsense. And that nonsense could be very damaging indeed. We appear to have entered a new age of unreason, which threatens to be as economically harmful as it is profoundly disquieting. It is from this, above all, that we really do need to save the planet.

Questions

Given the fact that we can't predict the global temperature in a hundred years' time, what future is there for carbon trading schemes that are being foisted on industrialised countries? Do they have a future at all, or are they just another part of the charade of political responses to global warming?

They are partly a charade, but there is more to it than that. We have some experience in Europe in that the most advanced scheme in existence at present is the European Union's emissions trading scheme. It has proved to have three characteristics. It has done nothing to reduce carbon dioxide emissions, which is what it was meant to do. Secondly, it has suffered from all the problems of rationing schemes. In this case, European Union (EU) authorities allocate a particular number of emissions permits to emitters – but only to existing ones, so new entrants are discriminated against. They can then make quite a lot of money selling these permits, at the expense of energy users – in Britain the National Health Service has been a conspicuous victim of this. Thirdly, it has provided a wonderful business opportunity for those who are in the business of market making and operating an emissions trading exchange. Because of these entrepreneurial opportunities, governments have a constituency that will support such schemes, which is why they are politically attractive.

In fact, if you were honest, what you would do is impose a tax on emissions, just as we do with cigarette smoking in order to discourage it. We don't establish a complicated cigarette-rationing scheme with tradable rights to smoke.

The EU scheme has proved to be a scam, as has the Kyoto Protocol in general. The biggest Kyoto scam is the so-called Clean Development Mechanism under which you can pay other countries that are not bound by Kyoto targets to reduce their emissions if you can't cut back your own

sufficiently. China accounts for two-thirds of this business at the moment, and is doing so well out of it that the Chinese government has imposed a tax on the income that Chinese companies derive from it, which can then be used to help finance more coal-fired power stations. The bulk of the income comes from closing down hydrofluorocarbon production, which is meant to be closed down anyway. Moreover, the mechanism is meant to be policed by the United Nations, which is supposed to satisfy itself that if, for example, the emissions are being reduced by closing a coal-burning plant, it would not have been closed down anyway, and also that there is not another plant popping up somewhere else to replace it. However, it is quite impossible to police, and has become a major scam.

Also, the private sector has got in on the act through carbon offsets. You can buy a ticket from an airline company that will offer you a carbon offset for a small sum and undertake to offset your carbon footprint by planting some trees somewhere. You have no idea whether the trees will be planted, or what effect they'll have on carbon dioxide concentrations in the atmosphere. However, everybody is happy – the airline company is happy because it can persuade you to carry on flying; customers are happy because, if they had doubts about whether it was proper to fly, they have been dispelled by buying the offsets; and, of course, the people in the carbon-offset business are very happy indeed. The mediaeval church got a bad name for selling indulgences, but I think in the light of this modern variant of the idea we ought to be more charitable towards it.

I have a simple question that the minister of energy in New Zealand has been unable to answer. The world has not warmed since 1998. If this trend continues, how many more years need to pass before those who believe that carbon dioxide causes dangerous human-induced global warming will reconsider their views.

Well, we shall see. It's an important fact that there has been no further global warming since 1998. It took the climate scientists who are in the prediction business a long time to recognise publicly that the temperature rises had stopped, at least for the time being. Eventually, a small paper that appeared this year in *Nature* conceded the point, and the authors

acknowledged that their computer models must have been wrong. Now they have been amended, and they purport to show that global warming will resume in 2009 or thereabouts.

Incidentally, let me take the opportunity to make the point that it is wrong to refer to carbon dioxide in the atmosphere as pollution. It is very far from pollution. Of course, real air pollution exists. Nitrous oxide is a form of harmful air pollution. So too is sulphur dioxide, if it's not up in the stratosphere where it does no harm. By contrast, carbon dioxide is what plants need to breathe. Just as we breathe in oxygen and breathe out carbon dioxide, plants of all kinds require carbon dioxide to grow. Carbon dioxide is no more a pollutant than is oxygen; in fact, it is very necessary for plant life, as is water vapour, which is the most important of the greenhouse gases. One of the factors that is inadequately taken into account by most of the people in the climate change debate is the stimulus that increased carbon dioxide gives to plant growth. This is settled science, and is known as the carbon dioxide fertilisation effect. Yet people still say we've got to stop carbon dioxide pollution. You may want to reduce carbon dioxide emissions because you're afraid that they might cause the earth's temperature to rise, but they are in no sense pollution.

How do you see the politics of the climate change debate around the world at present?

I think eventually the disconnection between the rhetoric and the reality is going to become so great and so obvious that something is going to have to change. I don't think politicians will want to raise carbon prices substantially and cause great economic damage. As a result, they will have to temper their rhetoric. But for the time being, the issue of global warming suits politicians very well. Many politicians nowadays feel that they are not accorded the degree of respect and veneration that was the case in some golden age, and which they feel is their due. Therefore, if they can rise above all the humdrum details of what they're actually doing in other areas of policy, and all the problems that they are failing to solve, they can say, 'but what we are doing is saving the planet'. That makes

them look tremendously good. So it is understandable they are going to keep this up as long as they feel people will not notice that they're not actually doing much about it.

Most New Zealand politicians think that if they question the need to take drastic action on climate change it's political suicide. They have a second worry from a New Zealand point of view, which is that the Kyoto Protocol is actually European agricultural protectionism coming back in a new guise like food miles, promoted by British and European lobbies. They are concerned that if New Zealand does not support Kyoto and take action we might be penalised. What position would you advise New Zealand politicians to take?

I suspect that many New Zealand politicians take the same position as I do, but it is extremely difficult for them to state it. Climate change has become a new religion. To talk against it is regarded as blasphemy, and no young or ambitious politician dare ask questions about it. I can do so because I am a superannuated politician – my career is behind me. Those who have a career in front of them are frightened of saying anything even if they privately have doubts. Also, many of them just go with the conventional wisdom and don't take the trouble to look into the subject in any detail.

But your point that reactions to climate change might well lead to a kind of green protectionism is a very important one. There are already many voices in Europe and the United States saying that if countries don't sign up to curbing their emissions – and they are thinking mainly of China – then trade sanctions should be imposed against them. The result could be the rolling back of globalisation that has done so much good for the economies of the world, and the economies of the developing world in particular. This would be a serious threat indeed to world prosperity and could lead to very destructive trade wars. I believe the use of the global warming issue as a cloak for protectionism is a very real and present danger.

I'm a mother of four young children and my main concern is their future. I want them to be able to run on the grass and see the trees and blue sky just as I did as a child. I am confused about global warming and what impact it's going to have. I'm also thinking about ethical behaviour, the things that we ought to do anyway whether or not they affect global warming, such as deferring peak oil and leaving reserves to future generations. I haven't heard any arguments tonight that haven't boiled down to some rather narrow economic considerations. Some economic changes might be good for us; we might start to be more human, more caring and better people. If our concern is with poverty in some countries, we might fix that by being less selfish and greedy ourselves. I don't want to be the one to look in my children's eyes and say I never bothered to do anything about global warming.

I think that one of the reasons why this issue does have an appeal to a lot of people is that we all have innately a religious or spiritual instinct of some kind, and we know there is indeed a great deal more to life than just earning and spending. This instinct used to be answered by the conventional religions, but in the West, particularly in Europe, we now live in a highly secular society in which the role of the conventional religions is not as great as it once was. In a way, environmentalism has filled a vacuum, and so I absolutely understand where you're coming from. We all care for our children, and for their future. But it is still necessary, before making hugely costly policy decisions, to look at issues analytically and not just muddle them all together in some feel-good way. We need to decide what is the rational way to approach these issues when they are issues not of personal behaviour – where people should be free to make their own ethical choices – but of public policy affecting everyone. That is what I have sought to do with global warming tonight.

My question is about the news media. How much responsibility do you place on the news media of the world generally for not ensuring that the public is given a fair and balanced view of the climate change debate?

The media clearly loves scare stories of all kinds. You only have to look at the litany of medical scare stories that attract media attention. So

naturally the media goes for global warming. It is a pity that there are not more journalists willing to look at the issue in depth and write sensibly and rationally about it. However, I understand what drives the bulk of the media, so although they are not particularly helpful on this issue, the main blame attaches to the politicians. I don't think they can escape from that by blaming the media.

Vote of Thanks
Denis Dutton

IT'S AN IMPOSSIBLE TASK to give a proper vote of thanks for such a tremendous lecture. In New Zealand sensible talk about climate change is a rare commodity. We have had the best account of the subject that I have ever heard, and I have heard many. The debate in New Zealand is too often cast in extremes. Either we're to believe that we're all doomed, that Britain will be uninhabitable in 2100, that we'll be swallowed by rising seas, that people will be roasted at the equator, that everyone will die of malaria – or that we're climate deniers. The climate deniers are the people who question the conventional wisdom. They are comparable with Holocaust deniers; people who refuse to see what's happening with the climate, and who will be responsible for massive death in the future.

When Roger Kerr introduced Lord Lawson tonight, he mentioned economist David Henderson's remark about our speaker's abiding concern with the truth. I think we've observed that quality in what we've heard tonight. The truth is that human beings can adapt. We need a more realistic view of the world and a less rhetorical view, less moral posturing and more understanding of how human beings have adapted in the past and how they might adapt in the future to climate change. The one thing that no one denies is that the climate changes; it always has done and always will. Truth matters in the climate change debate crucially. Truth, as

you have so effectively demonstrated tonight, Lord Lawson, is also rather more interesting. So, on behalf of the New Zealand Business Roundtable and all those present, may I thank you for a memorable 2007 Sir Ronald Trotter Lecture.