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A way forward on climate policy for New Zealand

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Abstract

New Zealand has a clear national interest in responding actively to the threat of climate change, and being a responsible international citizen. To these ends, it has ratified the Kyoto Protocol. But responsible action requires more effective domestic policy, and this is all the more difficult in the wake of the recent decision to drop the 2007 carbon tax. I set out strategic considerations for New Zealand climate change policy in the form of a critique of 'misleading stories we tell ourselves' about policy. I address climate change policy options for New Zealand, discussing key policy elements and giving examples, from the areas of energy, transport and urban design. Key policies have the potential to signal internationally that we are taking action, while maximising synergies across policy domains, yielding economic and social benefits as well as mitigating climate risks.

Introduction

In this paper I address New Zealand climate change policy options. The current New Zealand policy context has several key features:

- A broad based carbon tax, the centrepiece of New Zealand's climate change policy since 2002, has recently been abandoned, essentially because the support for it was thought not to be available in the House
- Officials are due to report back soon to the Government on climate change policy work programme elements
- The Government has big issues around energy and transport on its plate (as well as pressures in other areas) and it will need to find ways to integrate climate change policy with these challenges over the next 18 months or so, before it starts to face short-term domestic political constraints prior to the 2008 election.

In this short period of time, it would be desirable to see two things. One is a **policy package of forward-thinking** and sound policy measures which can, preferably, find wide support from the public and political opponents, or at the very least, be credible enough that most of the package can be sustained into the future without major change. Second, and probably the most critical, is the development of a **broad-based and informed constituency** for substantive and rapid action on climate change.

To put these suggestions in context, I start with an analysis of the stories we have told ourselves in the last twenty years on climate change, and which have effectively blocked most substantive action so far, or led to the downsizing of action to derisory levels. They address why we don't "get started."

Six misleading stories we tell ourselves

Story One: information overload

"There's too much conflicting information out there to cut through, so we can't make a decision to act," we tell ourselves. As journalist Noel O'Hare recently put it, we are living increasingly in a state of information overload, and climate scepticism is constantly advanced by the media.[1] In such a situation, it is natural to either wait for 'clincher' evidence, or, in the language of economists, to maintain 'option value' through 'rational delay'.

I see a responsibility on the media to raise the quality of coverage by providing better context and analysis. More importantly, it is unwise to blame delay on uncertainty forever. At some point, we have enough information to act. The signal has come through the noise. Acting **tomorrow** ceases to be prudent or strategic. As Jeffrey Immelt, Chair & CEO of General Electric (one of the world's 10 largest companies), recently stated: "There's no time to wait because tomorrow is now. We are living in a carbon-constrained world where the amount of CO_2 must be reduced...."[2]

Story Two: competing priorities

A second line is competing priorities: "Climate change is important but other issues are more important right now. We should put off climate change action in favour of more pressing matters." However, while this line, reminiscent of the so-called Copenhagen Consensus, was perhaps once persuasive, it has lost its currency in the last few years. It is apposite that even in 2001, the World Economic Forum at Davos in Switzerland described climate change as "The greatest challenge facing the world at the beginning of the 21st Century." Sir David King has also made a telling comparison of the severity of two problems – terrorism and climate change. When two problems become so pressing, there is actually a good case for addressing both.

Moreover, the deferral of important matters that are not urgent has a habit of turning those matters into urgent ones sooner rather than later. There is wisdom in the maxim that a stitch in time saves nine. This is particularly true with cumulative problems with long lead-times such as climate change.

Story Three: others should act

A third story with appeal for New Zealanders is that "while big cuts may be necessary, others can better make them. We can buy 'emission reductions' from others more cheaply." This story has great attraction to many economists. To some extent it is true – it may be cheaper to buy ***some*** emission reductions offshore than at

[1] O'Hare, N. (2005) "Think It Over" **Listener,** 16 July.
[2] Environmental Defense Action Fund (2005) **Campaign Update 05/2/05 What Leaders are saying about Global Warming**. http://www.undoit.org/campaignupdate.cfm?contentID=4437

home.

But it can be very risky if taken too far, exposing the economy to a high price of emission reductions. Moreover, it relies on other countries' actions to reduce emissions, and buying units on the international market is a risky gamble, with a potentially large downside.

It's also a passive and perhaps defeatist approach, overlooking the 'learning by doing' benefits of making reductions domestically. As David King, again, has commented, about the UK's early action in imposing a carbon levy and initiating an emission trading scheme: "[W]e feel we have a competitive advantage in getting into the Kyoto CO_2-trading program early; we believe it is an incredibly important new commodity exercise that will spur crucial technology development and soon begin to pay dividends for our country."[3]

Note that this comment supports trading, but not a reliance on buying credits. For all the theoretical merits of finding 'least cost emission reductions', the "**optics**" of buying emission reductions abroad are not good, if taken too far. It will be viewed by a number of countries as 'passing the parcel,' and may detract from the central task of persuading the international community that New Zealand is doing its bit.

The biggest problem with buying credits overseas is that while it may partially solve the technical problem of meeting our Kyoto commitment, it will do little to tackle the underlying and more important objective of influencing what other countries do, or indeed making a useful contribution ourselves. In fact, it may make the problem of collective action worse – other countries may look at New Zealand, especially if it moves to relying heavily on buying credits internationally, and see an opportunistic country that does not want to pull its weight until other countries have taken the first steps. Sadly, such a characterisation is becoming relatively plausible, when one considers that northern European countries have had carbon taxes in place since the early 1990s (e.g. 1991 in Norway and Sweden) and an EU-wide emission trading system in place since January 2005.

So far, New Zealand has failed to appreciate the opportunity of gaining emissions trading expertise by developing our own emissions trading programme (or one with Australia), while other more far-sighted countries have advanced steadily down this path. The carbon tax would have provided some foundations – e.g. emissions reporting – for a trading system.

'Learning by doing' (whether in response to a tax or trading) will shift down the marginal cost curve for emissions abatement. In other words, as we develop and get used to applying new technology (even if invented by others) and find new ways of organising our affairs to produce fewer emissions, the costs of abatement fall. So by finding cheaper ways to save carbon domestically over the next 7 years, till 2012, we can potentially save New Zealand a great deal of money in terms of credits that we will not have to buy at the world price of carbon.

[3] Little, A. (2006) "The King and I. An interview with Sir David King, Britain's top scientist and climate crusader." **Grist Magazine**; 17 February. http://www.grist.org/news/maindish/2006/02/17/griscom-little/index.html?source=daily

Story Four: technology will save us

A very alluring story is that technology will save us from having to change our lifestyles or needing to radically adapt our economy. Again there is some real merit in technological optimism – technological change and innovation does offer huge potential. The cost of generating a kWh of electricity from wind has fallen from US$1 in 1978 to five cents in 1998.[4]

But as Jared Diamond points out, some technologies solve problems, while other create problems, or we see a mix of both. Diamond states that "all of our current problems are unintended negative consequences of our existing technology."[5] I would not go that far, but note that many of our problems arise from harmful side effects, particularly the unforeseen side-effects of reliance on the automobile. So we should tread carefully with new technology, and learn what we can from others' experience in using it as we seek to apply it in New Zealand.

Story Five: we can rely on the private sector

Can we rely on the private sector, to anticipate the climate change issue and take appropriate action? While the private sector is vital to mitigating climate change, we cannot rely solely on it in the absence of clear government action. The private sector can help, and sometimes take the initiative (the Redesigning Resources story is a case in point) but it needs the government to set the 'framework conditions,' as the World Business Council for Sustainable Development acknowledges.[6]

An important part of these framework conditions is pricing of negative externalities. This need arises because prices in our market economy currently don't reflect the true cost of emissions (nor many other external costs). As Oystein Dahle of Esso remarked: "Socialism collapsed because it did not allow prices to tell the economic truth. Capitalism may collapse because it does not allow prices to tell the ecological truth."[7] It is up to government to set a framework, and a robust and well-considered framework, within which the private sector can act.

Story Six: action is just too costly

Perhaps the most seductive story for decision makers is that "Emission cuts are too costly, and it's not yet clear what approach is cheapest. There is no advantage in moving ahead of others." This story wraps up the competitiveness argument and the "let's not get out in front" argument.

The only sensible way to assess overall benefits versus costs is to take into account both ethical and self-interest considerations, and consider New Zealand's contribution to a global effort. This comes down to judgment.

In terms of the global effort, New Zealand is now extremely unlikely to move ahead

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[4] Lash, J (2004) "Environmental Stories to Watch in 2005." **World Resources Institute.** http://pdf.wri.org/enviro_stories_watch_2005.pdf
[5] Diamond (2005) **Collapse,** p.505.
[6] WBCSD (2002) **Annual Review 2002. From Words to Actions**; p28
[7] Brown, L. (2001) **Eco-economy.** p. 23

of others. Our emissions track has been relentlessly upwards, while others such as the UK and much of northern Europe have been pushing their emissions track into stabilisation mode.

[Figure 1 (New Zealand emissions track) about here]

New Zealand is **not** at risk of being 'out ahead'. Much the same argument applies to policy measures such as a carbon tax or emissions trading. While we have spent the last decade debating these measures, a number of other countries have just got on and imposed taxes and cap-and-trade measures. We are now among the slow movers.

Let me now turn to what I see as a set of policy framework elements for New Zealand in the wake of the abandonment of the carbon tax.

Six framework elements

1. **Set challenging targets with signalling value**

   New Zealand can influence international perceptions and action; indeed, given the small size of NZ's total emissions, the ability to exert influence on others is the primary reason for New Zealand to take action – aside from an ethical motivation. To exert influence, however, New Zealand policy has to have **international "signalling value."** We need to be seen to be doing something substantive, our action has to be noticed, and ideally it should provide useful 'learnings' or technology development that others can utilise. And, to maximise tourism and other positioning benefits, it should help us protect our reputation as a responsible, engaged, clean and green nation.

   Perhaps the most internationally visible but nevertheless realistic goal is to make New Zealand's electricity sector **100% renewable** within a credible time period – for example within around two decades, or by say **2030**. The timeframe should be long enough to allow for capital stock turnover but not so long as to be over the horizon.

   With the exception of a few countries such as Norway, New Zealand is already well ahead of the pack in terms of the contribution of renewables to total electricity supply, thanks largely to hydro, and fully renewable electricity is within reach. It will not be easy, however, given the ever-expanding demand for electricity, and it is important not to push up electricity prices excessively. Figure 2 suggests that prices may rise fairly steeply as additional renewables supply becomes more ambitious.

   [Figure 2 (Renewable electricity cost curve) about here]

   Attaining this goal would require – for example – that we shift heating loads off electricity and onto solar hot water, dramatically lift use of sustainable biofuels such as wood waste (e.g. for pellet burners in homes, a

substitute for plug-in heating), and develop our marine energy resources, particularly wave energy.

For a perspective on renewables, bear in mind that globally, over the past five years, production of energy from oil and coal expanded by 2% and 3% a year, respectively, while wind and solar energy grew by some 30% a year. As commentators point out, the transition from fossil fuels to renewable energy sources is under way, but, **so far** has not been moving fast enough to stabilise the climate.[8]

It is clear that, over the next few decades, renewable energy will grow enormously fast, pushed even faster by climate change concerns. Christopher Flavin of the Worldwatch Institute has noted that the energy industry is at a similar point to the computer industry (companies such as Microsoft and IBM) during the 1980s. The **renewable** energy industry is analogous to Microsoft, which at that time decided to focus on the personal computer market, and was written off by some as a competitor. The outcome is well known. Flavin's estimate is that companies such as Shell, BP and Mitsubishi invested US$30 billion in the renewable energy industry during 2004.[9]

In New Zealand, past estimates from the Ministry of Economic Development of the potential of wind have been too conservative, and we are at risk of making the same mistake with biofuels and marine energy. Biodiesel can currently be produced from tallow to provide at least **five** per cent of New Zealand's diesel, and at least **three** per cent of our petrol needs can be met from bioethanol from forestry waste, straw, and waste paper.[10] However, new technology and expertise, together with importing biofuels from countries such as Fiji,[11] means there is scope for biofuels to provide a substantial proportion of New Zealand's transport fuels within two decades. The initial actions of EECA (the Energy Efficiency and Conservation Authority) are to be applauded. However, New Zealand's biofuels and marine energy initiatives need a quantum leap in official support and funding.

2 Learn from other countries

New Zealand can learn from the policy actions that other countries are taking, especially innovative small countries in the top half of the OECD – e.g. Netherlands, Finland, Sweden, Australia. For instance, Dutch thinking on the future energy transition is visionary, and the Swedish commitment to an economy no longer dependent on fossil fuels by 2020 is exemplary. Even the UK, Germany and the US, much larger economies, can teach us a lot. The UK's renewables obligation and rapid German take-up of wind

[8] Brown, L. (2006) **The Guardian,** 25 January. http://www.guardian.co.uk/china/story/0,,1694346,00.html
[9] Hartlieb, T. (2005) **Mail and Guardian Online.** 28 September. http://www.mg.co.za/articlepage.aspx?area=/breaking_news/breaking_news__business/&articleid=252147
[10] Hodgson, P. (2005) First steps toward biofuels. Press release, 30 August. http://www.scoop.co.nz/stories/PA0508/S00794.htm
[11] Read, P.(2006) "Bilateral Bioenergy Partnerships" Paper tabled at VUW Climate Change Conference, March 2006

technology, for example, are notable.

Below the Federal level in the US, around half of US states have active policy measures in place or in the design stages, to cap emissions or incentivise reductions. A leading example is the RGGI [Regional Greenhouse Gas Initiative] of seven northeast states, to apply from 2009.[12] We can also learn a lot from the ETS [Emissions Trading System] operating in Europe for over a year.

3 Favour broad-based action over narrow measures

A tax shift in the direction of a broad-based carbon tax would have been first best, but has been rejected. It is desirable that as many sectors as possible of the economy adjust, rather than a few – it spreads the burden, and is generally more efficient as well as equitable. More specific taxes have the disadvantage of potentially distorting the balance of economic activity, unless the taxes reflect negative external costs.

There is no doubt that a broad based price instrument such as emissions trading (ET) still has attractions. But ET is not simple, and if New Zealand wishes to go down this track, it will require major preparation.

Advantages include its strong incentive effects and its consistency with the international Kyoto Protocol emission trading regime from 2008.

But ET has disadvantages, including that the domestic New Zealand market may be too small by itself. Another is the inevitability of intense lobbying by established emitters to have current emissions levels grandparented, with attendant implicit wealth transfers. Hence there are major equity implications, as well as Treaty of Waitangi issues, to be faced.

One option is to bestow an emissions credit allocation on every New Zealander, at the point of introduction of a trading system. These could then be sold to emitters obligated to hold credits to cover emissions (including companies selling petrol). Most would simply be sold quickly and easily, as happened when households received electricity company shares in recent years, but a few households might retain credits as a way of making a contribution to emission reduction.

Such credits should not be viewed simplistically as "property rights." A more appropriate view of them is necessary: they should be seen as conditional privileges, subject to social and environmental needs, i.e. subject to adjustment and redesign as necessary.

Whether or not a domestic trading scheme is developed, the most important goal here is to ensure there is an '**opportunity cost'** on carbon that influences as many actors as possible – i.e. some means of signalling

[12] Regional Greenhouse Gas Initiative (2005) "Regional Greenhouse Gas Initiative. Frequently Asked Questions." http://www.rggi.org/docs/mou_faqs_12_20_05.pdf

seriously to investors in particular that they should take carbon into account in their decisions.

4 **Avoid policy switches**

The dropping of the broad based carbon tax has highlighted the problem of dynamic inconsistency. Market actors will be reluctant to invest in new technologies if the signals from government are inconsistent over time. At present, the risk is that a pattern is emerging in which status-quo interests defeat constructive forward-oriented policy measures.

A converse problem has been the overly rigid position of the government on forestry credits – there is a good argument that **some** credits should have been allocated to "Kyoto forest" owners as an incentive for carbon storage; not allocating any has increased the risk of an abrupt policy shift on this in future.

Looking forward, New Zealand desperately needs a durable climate change policy package that, even if it starts modestly, builds steadily towards long-term targets that are stretching and recognise the need for deep cuts within the next two decades. This will provide the best incentive for innovation and the opportunities for long term thinking and policy development.

5 **Improve governance**

More than almost any other issue, climate change requires strategic governance. Are our institutions up to it? Are they according climate change sufficient priority or are we stuck in thinking and organisational arrangements that are in need of change?

The first institutional issue is whether our governmental institutions, at central **and** local level, are sufficiently focused on developing policies that are 'joined up.' One of the critical considerations is how to estimate and factor in the **multiple, long-term benefits** of climate change action, so that climate change policies advance health, social, economic and local environmental goals.

Effective policy integration means a number of things. It requires putting climate change at the centre of policy development in areas such as energy, transport, urban design, and building and housing. An example is more sustainable, new generation heating and solar hot water systems in residential dwellings, and ensuring that new dwellings are truly sustainable. The developers of the new Building Code should be thinking at least 50 years ahead, to a world in which very high energy performance is imperative. Buildings should increasingly be energy self-sufficient.

Effective policy integration also means finding synergies between mitigation **and adaptation** where possible (for example in land use). And it means thinking through better the links between central and local

government strategies, for example in transport and urban design.

In **transport,** effective integration also means much more rapid acceleration of public transport development and, with few exceptions, an end to new traffic-generating motorway construction. For example, in the Wellington region, it makes sense to rapidly enhance the quality and reliability of the rail and bus services, pulling enough commuters off the roads to mitigate the congestion problems on the coastal highway, and re-allocating the huge resources which would otherwise have gone into the Transmission Gully motorway. Another example of better integration of climate change, transport and health policy would be a major TDM [Travel Demand Management] initiative to move a segment of the population out of car dependency and into active travel – walking and biking. The benefits for people's health, for obesity and diabetes reduction, and savings in health care costs, would be substantial, as the empirical literature now makes clear.

In addition, integration means that those tasked with policy on economic development should think very strategically about **trade** opportunities flowing from the way in which countries such as China and India will be developing in the next two or three decades, and their demand for environmentally sustainable, efficient new technologies, products and expertise. This perspective also suggests that New Zealand could have a lot to gain from a step change in the level of investment in **agricultural** GHG emission control technologies, given that methane and nitrous oxide account for around half our total GHG emissions. This is one of those research areas where there is a clear public good case for government investment in scientific research, and potentially big spin-offs in exporting expertise in due course.

A **second** and related governance issue is around leadership and institutional design. New Zealand government officials have, despite some dissenting voices, significantly underestimated the size of the climate change issue over the last two decades. There has been inadequate consideration of New Zealand's long-term interests and the direction of international developments. The latest climate change policy review suggests that climate change is still being underestimated at the top levels in the public service; policy approaches being suggested are too limited and insufficiently strategic.

At the **institutional design** level, new approaches should be considered. The climate issue is now too large and complex to be led effectively by the Ministry for the Environment, and a dedicated climate change agency may be the best approach. Resistance to this to date may have been influenced by a belief that climate change was not a sufficient priority. The evidence from the science now belies this view. Moreover, the recent climate change policy review developed by officials suggests that there is a real need for institutional memory in dealing with complex issues with an important history, and a need for wider discussion of policy options.

A **third** governance issue is whether our institutions are capable of withstanding the appeals of special interests that surround climate change policy. At all levels of government, good analysis and long-term thinking should drive policy, not the shorter-term interests of certain companies and lobbies. In the US, such influence has had disastrous effects on federal policy, as the Dobriansky papers revealing the Exxon connection illustrated. But in New Zealand too, we need to stay alert to the risk of some actors having too large and self-interested an influence on energy, transport, forestry and climate change policy. On the positive side, we should applaud initiatives such as those of the Business Council for Sustainable Development to advance innovative thinking about climate change and sustainability.

6 Build the constituency

Broadening the constituency for change is the single most important underpinning action that central and local government can take.
In broadening the constituency, I suggest two critical elements, one centred on building awareness about urgency, and the other centred on motivation.

Urgency

New Zealand governments to date have simply not marshalled and communicated the message of urgency around climate change. To be brief, there is rapidly accumulating and increasingly compelling evidence that climate change action is urgent. We have strong evidence now that action should involve **global** emission stabilisation within two decades, and reductions of around 60% thereafter. Aside from the evidence provided elsewhere in this conference, four recent statements stand out:

- David King, the UK chief scientist, has said "Without reductions of 60 percent by mid-century, I believe the melting of the Greenland ice sheet would be irreversible, and sea levels would rise by seven meters from that alone."[13]

- James Hansen, director of the NASA Goddard Institute for Space Science, has said "Business-as-usual scenarios, with fossil fuel (CO_2) emissions continuing to increase at 2 percent per year as in the past decade, will yield additional warming of two or three degrees this century. That implies practically a different planet." Moreover, a "grim scenario [of 2 to 3 degrees C of warming and a 25 m rise in sea level] can be halted if growth of greenhouse gas emissions is slowed in the first quarter of this century. That requires two things: first, flattening out and then decreasing the rate of growth of CO_2 emissions." Moreover, "The bad news is that to stabilize the amount of CO_2 in the atmosphere may require reducing

[13] Little, A. (2006) "The King and I. An interview with Sir David King, Britain's top scientist and climate crusader." **Grist Magazine**; 17 February. http://www.grist.org/news/maindish/2006/02/17/griscom-little/index.html?source=daily

emissions by 60 to 80 percent."[14]

- To quote from DEFRA's summary of a recent Exeter conference: "Different models suggest that delaying action would require greater action later for the same temperature target and that even a delay of 5 years could be significant. If action to reduce emissions is delayed by 20 years, rates of emission reduction may need to be 3 to 7 times greater to meet the same temperature target." [15]

- Jonathan Overpeck, author of a recent article in *Science* on warming and sea level rise, states that "We need to start serious measures to reduce greenhouse gases within the next decade, (and) if we don't do something soon, we're committed to 4 to 6 meters (13 to 20 feet) of sea level rise in the future."[16]

But urgency is about more than a heightened sense that we must start acting soon. We have to think well ahead on climate change because of the nature of the lags involved, best shown in the IPCC's well-known illustration (IPCC, 2001).

[Figure 3 (Lags and response curves for emissions, concentration, temperature, melting over a thousand years) about here]

The key point is that action to reduce emissions this century will have impacts with increasingly extended effects, on concentrations, temperatures and melting. The lags on melting are of the order of a thousand years. Considering that 'civilization' in the archaeological sense has been in place only around 5000 years, in total, it is a concern that right now we are creating impacts that will be felt for a fifth as long as civilization has existed. The sooner we can reduce emissions the less dangerous that impact will be, for the children of our grandchildren. In this context, a recent statement by a New Zealand commentator, Owen McShane, that "I don't think we should care a stuff about future generations. They can take care of themselves," is surely not a coherent guide for policy.[17]

At a personal level, after almost two decades working on climate change issues, my perception of the state of play is that we are now in the "window" in Figure 4, although pessimists such as James Lovelock might argue we are into the right hand side of Figure 5.

[Figures 4 and 5 about here]

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[14] Hansen, J. (2005) "It's Not Too Late" **International Herald Tribune**, 13 December. http://www.iht.com/articles/2005/12/13/opinion/edhansen.php

[15] DEFRA (2006) **Avoiding Dangerous Climate Change: Executive Summary of the Conference Report.** Scientific Symposium on Stabilisation of Greenhouse Gases. February 1st to 3rd, 2005; Met Office, Exeter, United Kingdom. London: DEFRA. http://www.metoffice.gov.uk/corporate/pressoffice/adcc/ExecSumFeb2005.pdf

[16] Perlman, D. (2006) "Oceans Rising Fast, New Studies Find", **San Francisco Chronicle;** accessed via Climate Ark**:** http://www.climateark.org/articles/reader.asp?linkid=54312

[17] **Dominion Post** 19 March 2005 pA6.

Motivation

A second element underpinning a constituency is a sense that we have something to gain on the plus side, which outweighs the costs on the negative side. The positive side includes an ethical commitment, a commitment to intergenerational equity, and self-interest.

In economic terms, while some action will involve costs, there are also major costs of **inaction**, as energy- and emissions-intensive capital, such as new power plants, buildings and roading systems, becomes locked in. The risk is that in a world where climate change action becomes a vital need, that capital will have to be replaced at considerable loss. A gain can be made by avoiding such a loss.

Any policy response delay, such as that experienced in New Zealand over the last decade, reduces those potential gains. The longer we leave emission reductions, the more rapidly they will have to be made in future, and the less our gains. Thus, the argument for early action has a strong element of loss avoidance.

But the argument for action also has a strong element of **self-interest**. New Zealand is a small trading nation and our reputation matters, for tourism, for the market perception of our food exports, for trade access, and for our ability to market new technologies and know-how. On all these counts, being up with the game and being seen to be taking a credible and sustainable position is important.

There are some signs that a constituency is developing. One sign is the results of a recent survey for the Growth and Innovation Advisory Board, which ranked quality of life, the natural environment, and the quality of health and education well above economic growth.

[Figure 6 about here]

A similar set of responses was found in the more recent Massey University Values Study, which addressed the issue of lasting environmental damage.

[Figure 7 about here]

An informed constituency is developing, and should be supported through wide education about the urgency of the climate issue, and support for various forms of engagement in positive actions, such as encouragement of active travel. It should also be supported through better public involvement in policy formulation which, recently, could have been more inclusive.

There is a thirst among informed and motivated people to take action now on climate, together with precautionary actions in the energy arena, as we see the price of oil trending upwards. This motivation should not be

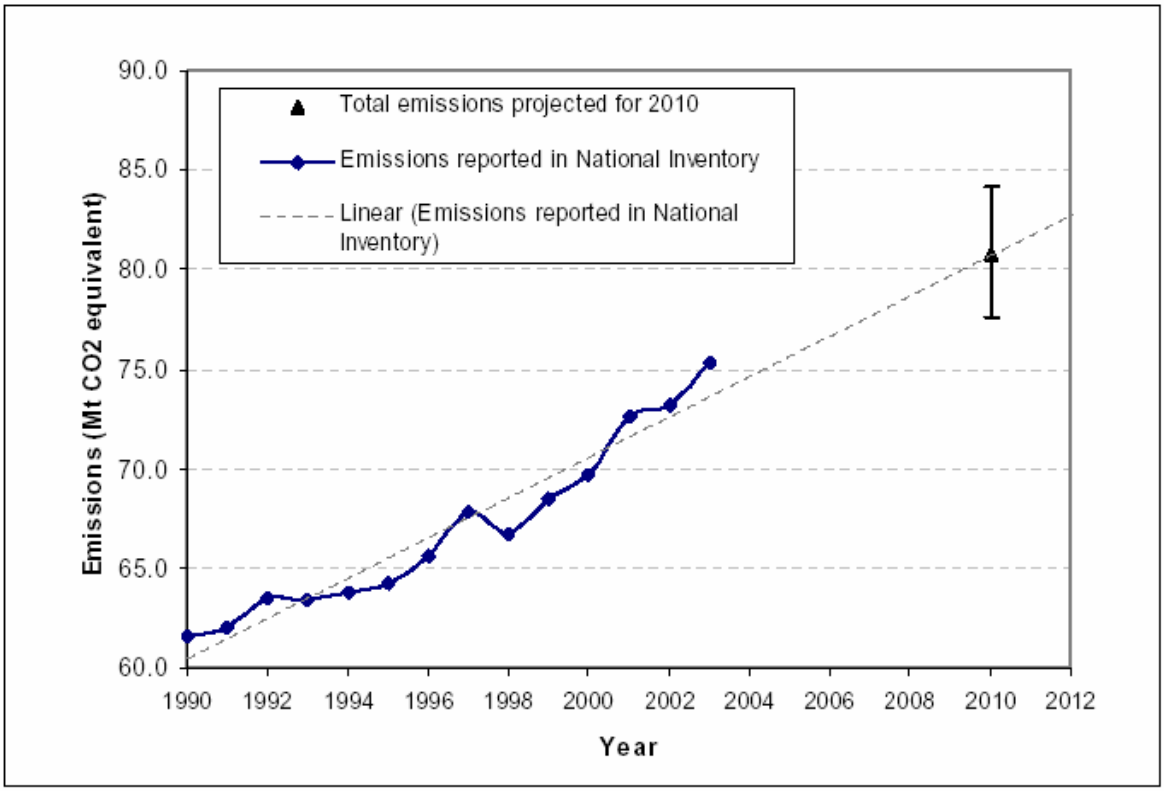
underestimated and it can be encouraged and reinforced by central and local government, so that innovative and creative people stand up and explore ways to make a difference. This is critical for wider, durable change in attitudes and behaviours.

Conclusion

My conclusion is that New Zealand needs to do much better on climate change policy. Policy needs to remain analytical but it should also be forward thinking and strategic. We need to set clear targets, for their signalling value. In doing so, and in thinking about smart policies, we can learn from other countries. Policies should be consistent over time and favour broad based action, rather than narrow measures. Governance, including the management of our policy making processes, should be improved. And it is critical to build and reinforce a constituency for action, based on an understanding that New Zealanders can make an innovative contribution to global action on this critical issue, and that action is urgent.

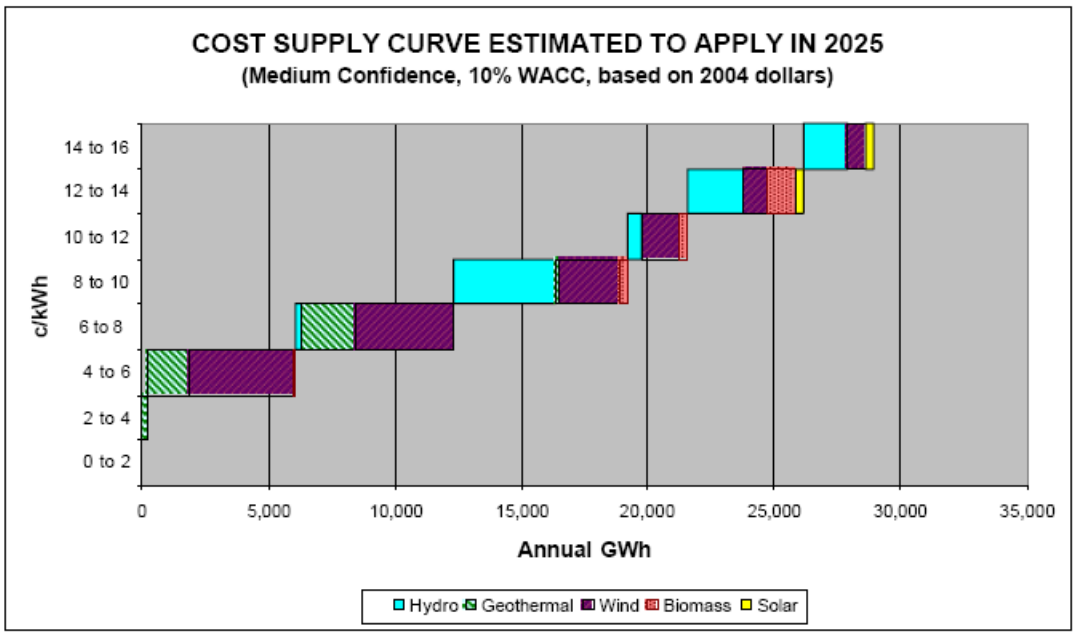
Ralph Chapman
27 March 2006

Figure 1: New Zealand's recent emissions track



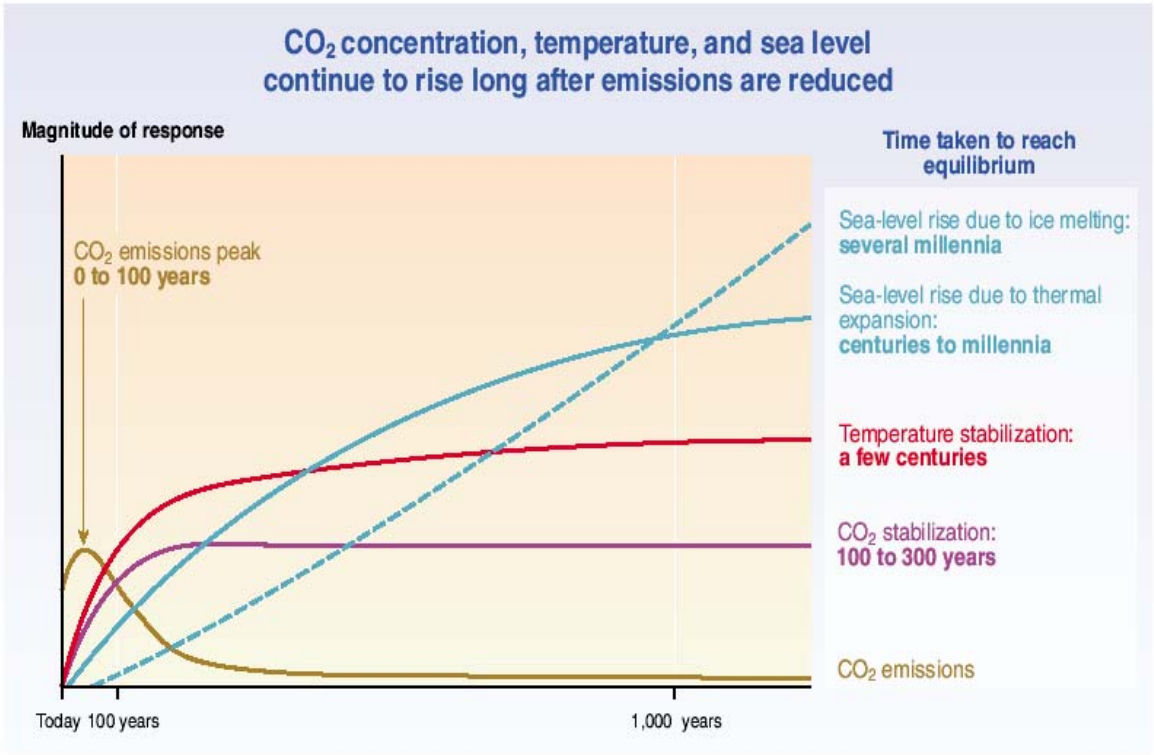
Source: NZ Climate Change Office (2005)

Figure 2: A renewable energy cost curve for New Zealand



Source: East Harbour Management Services (2005)
http://www.med.govt.nz/upload/26015/renewables.pdf

Figure 3: Climate response lags



Source: IPCC (2001)

Figure 4: When people are motivated to act

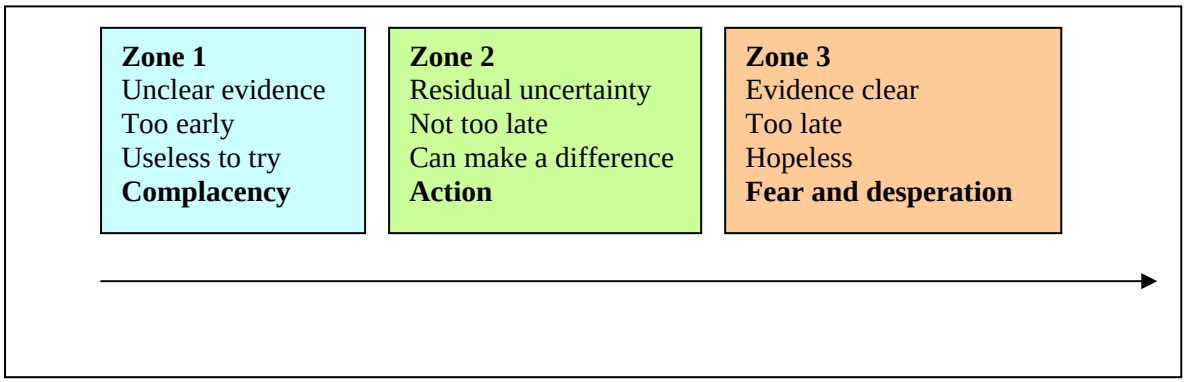


Figure 5: A pessimistic view (the Lovelock version)

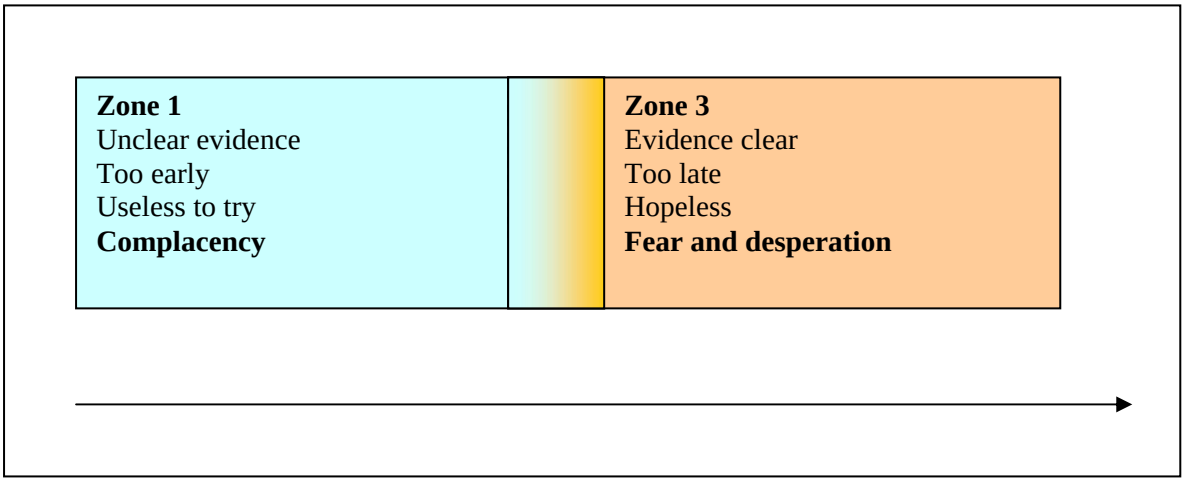
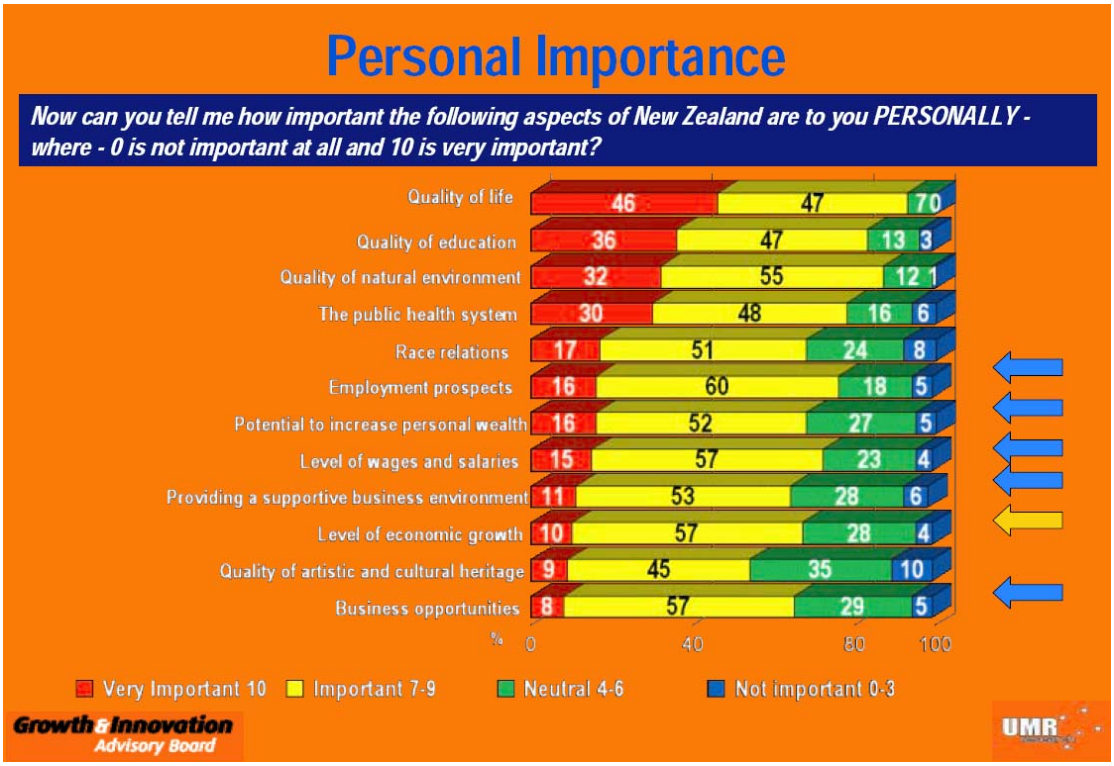
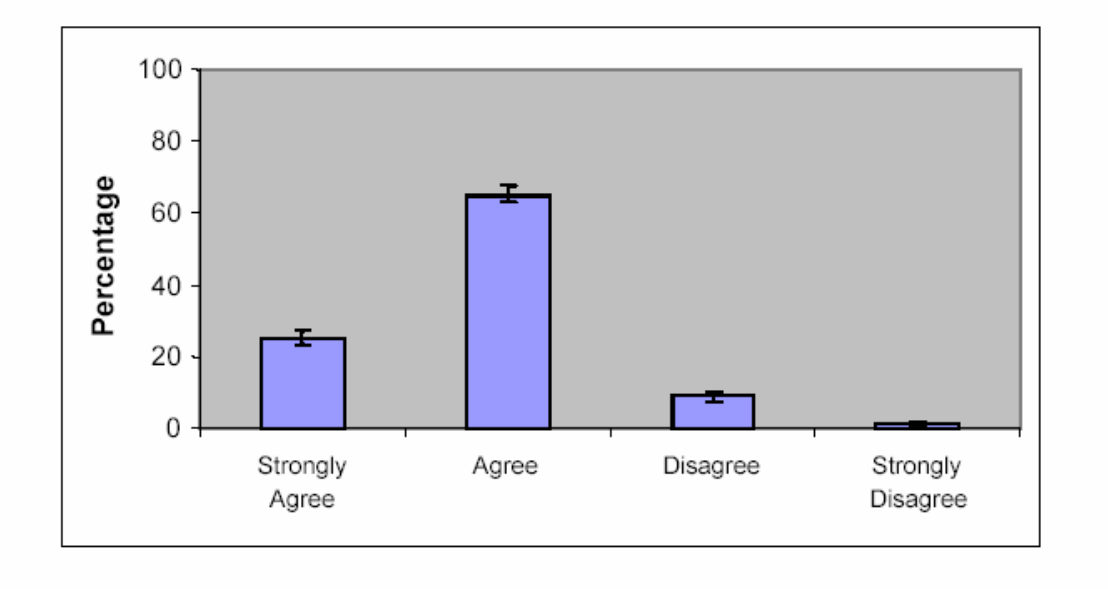


Figure 6: What New Zealanders consider important - survey results



Source: Growth and Innovation Advisory Board (2003)

Figure 7: Comparative valuation of economic growth and the natural environment (New Zealand Values Study, 2005): Response to question "Economic growth and development should only occur if it does not cause lasting damage to the environment"



Source: Rose, Huakau and Casswell (2005) **Economic Values. A Report from the New Zealand Values Study, 2005;** p.11