THE TREASURY
Kaitohutohu Kaupapa Rawa

Growth in a World of Limits: Challenges and Opportunities for Businesses and the Economy

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World Environment Day Business Symposium

Main Hall, Royal New Zealand Yacht Squadron, Auckland

10.05-10.30 AM, Wednesday 4 June 2008

Good morning.

It's a pleasure to be a part of this symposium and to hear from international and local leaders in the response to climate change.

Two years ago I covered climate change for the first time in a speech to a business audience about future economic challenges. Back then, confronting the economic implications of climate change for New Zealand and making a strong call for action was seen by some as bold. By last year, it was seen as topical. By now, it is seen as essential.

For the Treasury, responding to climate change is viewed as part of an even broader challenge of achieving sustainable economic growth in a world of limits. New Zealand is experiencing pressure on our natural resources such as water, and of course, our share of the atmosphere's ability to absorb greenhouse gases. Natural resource limits and the

impacts of climate change are becoming increasingly important factors in how we develop policy for economic growth. The price of natural resource inputs to the economy is also rising – as anyone filling up their petrol tank can attest.

Today I'd like to talk about the policy framework the Treasury uses for considering sustainability issues and the implications this has for businesses and the wider economy. A policy framework is a bit like setting the rules of the game, and then letting the players – in this case businesses – make decisions and compete within those rules.

Our vision is to be a world-class Treasury working towards higher living standards for New Zealanders. We recognise that living standards encompass a wide range of factors across the economic, social, environmental and cultural spectrum. So at the risk of sounding more like a gymnast than an economist, when the Treasury deals with sustainability issues, we strive for balance and flexibility. Our goal is to adopt policy frameworks that balance the needs of different components of overall wellbeing, while remaining flexible to changing circumstances.

In simple terms, there are two main questions that a policy framework needs to be able to answer: "What is an appropriate limit to place on resource use?" and "How should that limited resource use be allocated across the economy?"

Let me start with the first question. Setting limits on resource use can be a very tough task. It usually requires balancing different factors that can be hard to compare and hard to define. For example, allowing use of a given natural resource may lead to some degradation of it, but restricting use imposes real economic costs. Consider too that some resource use is of particular value to Maori. The one policy response can have both positive and negative impacts on the environment and both economic costs and benefits. While some argue it is wrong to put a price on environmental or other intangible impacts, we need a way to compare the costs and benefits of a given resource limit if we want robust decisions that balance the various impacts and maximise overall wellbeing.

The Stern Review is a well-known example of this type of analysis. Stern assessed the costs and benefits of taking action to reduce the impacts of climate change by reducing or mitigating emissions and thereby stabilising greenhouse gases in the atmosphere. His analysis involved quantifying scientific estimates of physical climate change impacts and comparing them to the economic and financial costs of reducing emissions. In other words, he compared the costs of taking action with the cost of doing nothing on climate change. He also considered what the distributional and social costs of taking action would be. So here we have analysis of a sustainability issue that takes account of impacts on people, the planet and the pocket.

In many ways, the second question of how to allocate natural resource use within an overall limit is easier, although it can involve significant distributional issues. There are a few things the allocation process should ensure.

First, resources should move to their highest value uses within an economic, social, environmental and cultural context.

Secondly, businesses and consumers should be allowed to respond flexibly to the incentives provided by, for example, an emissions trading scheme, through adapting their investment, production and consumption decisions. This lets them search out the cheapest way of achieving the environmental goal.

Thirdly, government should think through whether it wants to speed up, slow down, or leave alone the pace of change as the economy moves towards sustainability – in the interests of achieving the best balance between costs and benefits over time.

And fourthly, the process should provide businesses and investors with enough certainty to underpin long-term decision-making.

There is a wealth of research that backs using economic instruments to limit and allocate resource use as the lowest-cost way of achieving environmental goals. Under a permit trading scheme, for example, anyone wanting to use a particular resource has to have a permit, and the total amount of permits equals the limit set on using that resource. One result is that the price of that natural resource use fully reflects the cost to society. And another result is that permit trading allows the use of the resource to move to where it is most valuable.

These types of policy frameworks have been put into practice for decades, and one of the most successful examples is the trading of sulphur dioxide allowances in the United States. The US Acid Rain programme demonstrates the benefits of flexibility, with a cap-and-trade approach spurring innovation and producing earlier, faster, larger and cheaper reductions than forecast. What many people expected was a market price for sulphur dioxide allowances of anywhere between $600 and nearly $2,000 a ton. What the programme delivered was a price of $150 a ton. Early estimates that the programme could cost up to $25 billion per year were way off the mark, with the long-term annual cost expected to be around $1.0-$1.4 billion. And most importantly, power plants participating in the programme reduced their sulphur dioxide emissions by 22%, which was below the mandated levels.

Closer to home, New Zealand has operated a trading regime for fishing quotas since 1986. The total allowable catch for different commercial species is divided up into quotas that can be leased, bought, sold or transferred. By and large this system has helped New Zealand keep its fish stocks at sustainable levels, and is highly regarded internationally.

More recently, the Treasury has been participating with other agencies in the development of the Emissions Trading Scheme, or ETS.

As a signatory to the Kyoto Protocol, New Zealand agreed to take responsibility for its net emissions above 1990 levels over the 2008 to 2012 period. As you all know, this imposes some economic costs for New Zealand, as our net emissions are projected to exceed what they were in 1990. The ETS is about how those costs should be distributed through the economy so that a least-cost response can be generated.

While there is broad support for the ETS in principle, there are still some knotty issues that have to be worked through. Some of the “knots” you might have heard of include: not me; not now; not this way; and not until everyone else does it first.

Clearly, there are difficult transition issues, and these have to be worked through carefully and well. But the more you avoid taking hard action, the less you can avoid even harder consequences. Some in business have argued that we should delay any action until the shape of the international response to climate change becomes clear. In my view, it is better to respond to the challenge of reducing emissions early. Moving later just means that people and businesses face bigger adjustments and ultimately bigger costs, both domestically and internationally. Deferring action doesn't defer the costs; it just shifts them from the polluter to the taxpayer. It also risks undermining our international credibility and influence, making the negotiation of a future climate change agreement that is good for New Zealand more difficult.

While New Zealand is still tied up sorting out the details of how to meet our responsibilities during the first Kyoto commitment period, debate about the next Kyoto commitment period has already started. So the decisions we make on our climate change response now will matter not just for the present, but also for 2013 and beyond.

An ETS represents a flexible and least-cost way of achieving the emissions target. Its design brings together those four key considerations I spoke of earlier: the economic, social, environmental and cultural factors. Let me briefly explain some of its features.

Our national emissions cap, or 'Kyoto target', is New Zealand's contribution to the overall emission reduction target for all Annex 1 countries. The overall target is based on the assessment of the environmental impacts of given greenhouse gas concentrations in the atmosphere, while New Zealand's target is based on equitable burden-sharing across all Annex 1 countries, encompassing issues such as wealth.

New Zealand has taken an "all sectors, all gases" approach that will give the ETS wide coverage. This helps ensure that all opportunities for least-cost abatement measures are opened up, rather than a limited number of solutions in limited sectors. This approach also sets a high standard of integrity in an environmental sense. We are not ducking the issues that are hard for us – for example by excluding agriculture.

The proposed ETS design facilitates a smoother adjustment to a carbon-constrained economy. For example, sectors will be phased in over time. Free allocation is also provided where producers will find it difficult to pass on prices that reflect the increase in their costs, particularly producers that would otherwise suffer severe financial impacts competing against foreign counterparts that don't face emissions charges.

The final feature I'd like to point out is that the ETS will give flexibility to emitters about how they achieve their goals. There will be plenty of incentive in the scheme for innovative businesses to create and market emissions abatement processes and technologies.

Let me emphasise the importance of this last point. Another approach is directly regulating emission-reduction activities – essentially telling everyone what they have to do. But for this to be low cost for the economy, the government would need information about abatement opportunities that it simply doesn't have.

Schemes such as the ETS accept that businesses and consumers are in the best position to make decisions on their investment, production and consumption. The scheme is based

on the view that businesses, on average, can be relied on to make high-quality choices when they have high-quality information. The price faced by businesses through the ETS will give them the information on what value to place on emissions reductions. This spurs innovation through new technological developments and new production processes. And the flow-on from this is that environmental improvements often end up costing less than first assumed – just like we saw in the US Acid Rain programme. This can allow more environmental gains to be achieved than using a more cumbersome and costly regulatory approach, although of course adaptation measures will be necessary.

With clear signals that emissions will be costly, a growing number of companies here and abroad are taking action. Car makers are developing hydrogen fuel cell, electric and hybrid vehicles. Electricity generators are expanding the use of renewable energy such as wind and geothermal generation, and researching technologies such as tidal power. Airlines are looking at changes to their fuels and flight durations to cut emissions. Some of that fuel could come from Aquaflow, a Nelson-based company making biofuel from algae. Energy Mad, one of our fastest-growing companies, is a leading manufacturer of energy-saving light bulbs. Several New Zealand wineries are going carbon-neutral. And a decision to fund research into agricultural emissions should help our farmers curb their environmental impact. Even Japanese professional baseball is fighting global warming by shortening games to reduce carbon dioxide emissions at stadiums.

Action is being taken in the public sector too. The Treasury is one of the first six agencies chosen to advance the Government's commitment to the goal of a carbon neutral public service, so we have taken a number of successful steps to cut back on our power use, waste and travel.

It's good to see the concerted effort being put into tackling climate change and the high profile this important issue now has. It's also worthwhile to recognise that it is not the only serious sustainability issue New Zealand faces. In particular, we have some major matters to grapple with regarding the use of our water resources. Water problems vary in degree and kind in different regions, but it is clear that use of water resources is approaching its limits. There is also a strong connection with climate change through land use – climate change, emissions policy and water all affect land use; and land use affects both carbon emissions and water use. Another connection is that both climate change and water policy are long-term issues – but which need to be addressed soon if society is to avoid the major environmental and economic costs of doing nothing.

So what's happening with our water? There are three major elements to New Zealand's fresh water management problems that make striking a satisfactory balance between economic, environmental, social and cultural goals a huge challenge.

First, in some regions the demand for water for irrigation and urban supply means we are drawing more from our waterways than is acceptable. In Canterbury, an eight-fold increase in dairying since 1981 has contributed to a situation where irrigation accounts for 80% of the region's allocated water, and the province has 70% of New Zealand's irrigated land. Water allocation is now at the limits allowed within current environmental flows. Canterbury is therefore facing the increasingly important challenge of how to allocate this water in a way that produces the greatest economic return.

Second, bacteria, nutrients and other pollutants have made water quality in many rivers and lakes drop below tolerable standards. In Lake Taupo and the Rotorua Lakes, caps on nutrients are now being imposed to allow a gradual restoration of lake water quality, but the improvement will take decades. The caps will also have profound impacts on the potential for intensified land use.

And third, Maori interests in water are not always being adequately reflected in regional governance arrangements and policies.

As we have seen with the ETS, environmental limits – in this case for water use – have economic impacts, and the Treasury believes there is a strong case for using the principles that have informed the development of the ETS and other climate change policies to develop policy relating to water. To address water issues effectively, New Zealand will need seriously to consider an allocation scheme that makes it easier to move water between users and uses, and to offset higher use in one activity or location with reductions elsewhere in the same catchment. Having that degree of flexibility could be crucial to mitigating the economic impacts of water limits and promoting innovation to improve the balance between competing goals. More robust methods for allocating water in New Zealand could generate major benefits.

I believe New Zealand is up to the challenge of tackling big environmental issues like climate change and sustainable water use, and I believe New Zealand businesses are up to the challenge of thriving in a resource-constrained world. There are still enormous commercial opportunities within an environment of limited and increasingly scarce resources.

One of the roles of policymakers is to help create the conditions in which businesses can make the most of those opportunities. I've already talked about how comprehensive and transparent allocation frameworks can help businesses make efficient investment decisions on the use of natural resources. Complementing and supporting this are a number of other policy interventions that have been announced or are already in place. Some that you might be aware of include funding for our pastoral and food industries to help them improve the way in which they utilise and manage natural resources; demonstration plants for emerging technologies such as biomass generators; and tools for businesses to manage their energy use.

There are other areas where the public sector could potentially assist the private sector. One example might be to identify how consumers and corporates in our export markets are responding to the environmental footprint of products and services, and to identify where risks or opportunities lie. We saw the value of this when facing the food-miles argument in the British market that posed a risk to our export sector. It could prove valuable again as the European Union has recently signaled a move to introduce carbon footprint labels on all goods and services; and the leading British supermarket, Tesco is already in the process of introducing such a scheme. Through research that is part publicly funded, the potential flaws in the food-miles type of analysis are being highlighted, and a more environmentally sound life-cycle analysis is showing New Zealand products to be less carbon-intensive than many European counterparts.

Protecting our reputation in this way is vital. Opportunities to preserve, highlight and build upon our clean green brand are important to the future business growth of New Zealand. The value of this brand will only grow over time as the environmental limits of the world become more apparent, and consumers demand less resource-intensive production.

In closing, let me say the best way to prosper from and defend New Zealand's environmentally responsible reputation is to make sure we deserve it. We need to respond effectively to the challenges of emissions, water shortages and other natural resource limits, and we must also respond in a way that minimises the economic costs – and maximises the gains – from change. I believe the best way to do that is to ensure policies and approaches like the ETS send clear signals to businesses and consumers about the true costs of resource use, and then give them the flexibility to come up with their own innovative and cost-effective solutions.

There is little doubt that for the Treasury and other agencies in the public sector, sustainability and natural resource constraints will have a growing influence on policy development. Our aim is that policy should achieve the right balance between New Zealand's economic, social, environmental and cultural goals. We want to do our best to create an environment where businesses are free to pursue the opportunities that deliver sustainable economic growth in a world of natural resource limits, climate change risks and rising natural-resource prices.