



SECTION TWO

A new direction



THE CHALLENGE WE FACE

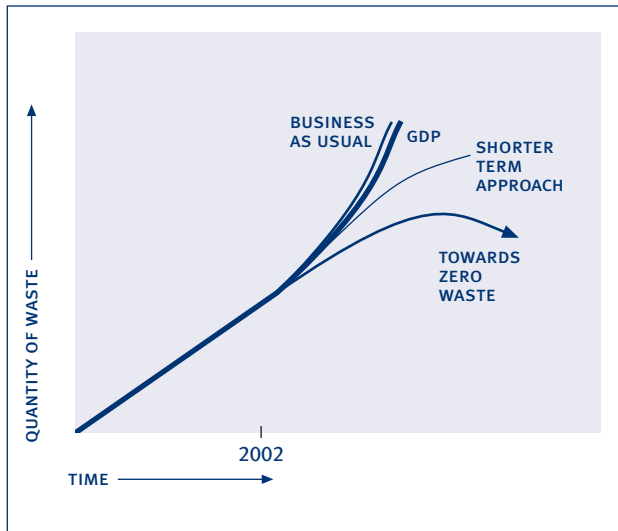
Breaking the link

Our challenge is to break the strong link between economic development and waste generation. We need *win-win* solutions to our waste problem that meet our need for environmental protection, social wellbeing and economic development.

In May 2001, OECD environment ministers, including New Zealand's environment minister, agreed that:

Decoupling environmental pressures from economic growth, while continuing to satisfy human needs, requires an integrated effort addressing consumption and production patterns, including encouraging more efficient resource use.¹²

Figure 1: Changing direction



NB: Diagram is illustrative only

Figure 1 illustrates the change of direction we need. Our current *business as usual* approach sees waste generation growing at a faster rate than the economy, represented here by GDP.

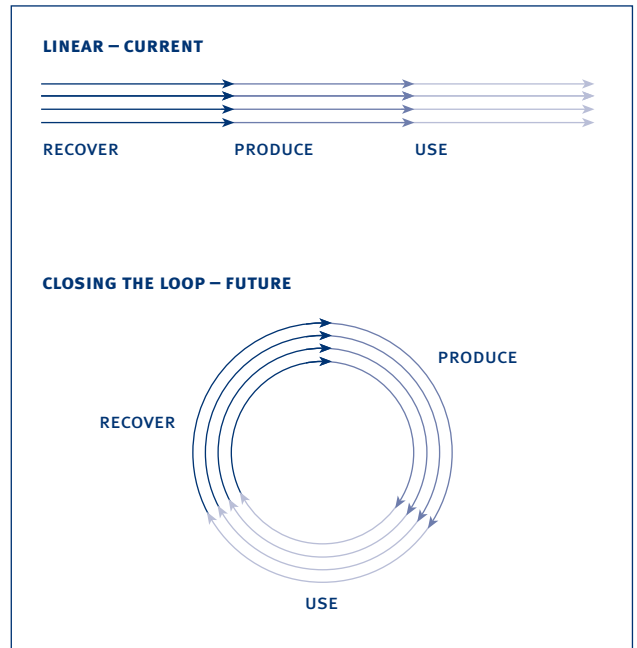
The shorter-term approach shows improvements we can make quickly in how we manage wastes, and in starting to reduce them. These include improving treatment and disposal standards, and educating the community and business sectors about waste.

On their own, though, these policies are unlikely to reduce the amount of waste we produce. Stronger measures will be needed to reverse waste generation rates and move them towards zero.

This change of direction will require *closing the loop* on resource use and waste generation. We must avoid producing waste materials, re-use them, or release them into our land, air and water only at a rate that will not compromise the ability of natural systems to support life.

Figure 2 shows two approaches to resource use. The current linear approach considers waste a natural part of production and consumption. The cyclical approach no longer accepts waste as a normal part of doing business.

Figure 2: Linear versus cyclical approaches to resource use



¹² OECD Environmental Strategy for the First Decade of the 21st Century, Adopted by OECD Environment Ministers Paris, 16 May 2001.

Why must we act now?

Right now, community, central and local government and international priorities give us a unique opportunity to make significant progress:

- **Government commitment:** Government is committed to sustainable development as a basis of future policy and effective decision-making and management right across New Zealand society and its economy. Sound waste minimisation and management play a key part in this commitment.
- **OECD policies:** Most of our OECD trading partners have instigated policies and legislation to reduce and better manage waste. New Zealand must develop its own policies and practices while not getting out of step with these trading partners. Our *clean green* image is useful in promoting tourism and exports. Poor waste management would damage both the reality and the image. Our record on waste has important implications for trade and tourism, and the sustainability of all New Zealand businesses.
- **Greater environmental awareness:** Heightened awareness of the environmental and social costs of *end-of-pipe* management has prompted community calls for better standards of treatment and disposal. Many now recognise the potential of waste to contaminate land, air and water and destroy or compromise the ability of these resources to sustain life.
- **Higher standards:** Concern about releasing sewage into water is prompting more stringent treatment standards and land-based disposal. There is a move away from old dumps to bigger, better engineered, and therefore more expensive, facilities. Finding geologically suitable sites is difficult and costly. As these factors drive up the cost of waste disposal, waste minimisation becomes more attractive.
- **Search for alternatives to dumping:** The NIMBY (*not in my backyard*) response is driving serious consideration of waste minimisation as an alternative to disposal. Though far safer than the old style dump, big, modern landfills are rarely welcome neighbours.
- **Maori as kaitiaki:** Maori have driven improvements in wastewater treatment and disposal. Tangata whenua have a large body of knowledge (matauranga Maori) based on customary practice, and a strong sense of their duty as kaitiaki. These have fuelled efforts to ensure that sewage sludge and bio-solids resulting from wastewater treatment are made safe before being deposited on land.

Matauranga Maori

Iwi, hapu and whanau want to be sure that waste is disposed of appropriately — in harmony with their values, and without damaging the environment that sustains tangata whenua. This means, for instance, maintaining mahinga kai, or food-gathering areas, large enough and healthy enough for present and future needs.

Inappropriate waste disposal can damage the relationship Maori have with their lands, waters, food-gathering areas, and wahi tapu. Dumping waste into mahinga kai diminishes the site's mauri and mahinga kai values. The interdependence of mahinga kai ecosystems means any contamination — even of one species — has a negative flow on to all species in the ecosystem, including people.

Contamination of a food source threatens the ability of tangata whenua to fulfil their manaakitanga responsibilities (their ability to host visitors), as well as to sustain themselves from that food source. This, in turn, puts pressure on other food sources and ecosystems.

- **Many contaminated sites:** Contaminated sites throughout the country, and the expense of remediating them, underline the importance of preventing the environmental degradation that results from poor waste management.
- **Local enthusiasm seeks government support:** Local government is required to manage waste and the effects of waste disposal, but they face legal and market obstacles in doing as well as they might. Local government has called for a partnership with central government to address waste minimisation, and is backed by strong community support and enthusiasm for action.
- **Community support for re-use and recycling:** There is significant community support for product re-use and recycling, and more efficient use of resources. Communities are increasingly concerned by the degree to which we waste valuable resources, and many people find the idea of burying potentially useful materials in the ground offensive.
- **Business and employment potential:** There is growing appreciation of the business development and employment potential of waste minimisation, and, in particular, opportunities to take advantage of domestic and international markets for a range of previously used materials.

Life Cycle Analysis in Southland

Southland is a large region, with a dispersed population. In the past, every small community had a small, unlined disposal site, and many farms in Southland continue to operate their own. These landfills will close and be replaced with a modern, engineered landfill. The Southland District Council has used the Wisard Life Cycle Analysis tool to assess the environmental impacts of its disposal methods.

Table 1 shows the quantity of waste disposed of in Southland in 1997 and projected disposal methods in 2007. Table 2 shows the expected environmental effects using different forms of disposal.

Table 1

| DISPOSAL METHOD | 1997 | | 2007 | |
|-----------------------|----------------|-----|---------------|-----|
| ON-SITE (FARM) | 9.002T | 50% | 4.501T | 25% |
| LANDFILL | 6.909T | 38% | 8.404T | 45% |
| GREENWASTE COLLECTION | 1.951T | 11% | 3.903T | 22% |
| RECYCLING | 0.138T | 1% | 1.192T | 7% |
| TOTAL WASTE | 18,000 TONNES* | | 18,000 TONNES | |

Table 2

| RESULTS: | 1997 | 2007 |
|--|---------|---------|
| WASTE (TOTAL TONNES) | 27,774* | 20,637 |
| TOTAL PRIMARY ENERGY (GJ) | 2,912 | -15,952 |
| AIR ACIDIFICATION (TONNES EQ PO ₄) | 0.11 | -0.18 |
| EUTROPHICATION (TONNES EQ H ⁺) | 137.78 | 43.98 |
| DEPLETION OF NON-RENEWABLE RESOURCES (TONNES/YEAR) | 0.26 | -6.18 |
| GREENHOUSE EFFECT (TONNES EQ CO ₂) | 16,944 | 7,274 |

A positive number shows an environmental burden and a negative number shows an avoided burden. Even though the volume of waste sent to landfill is expected to grow by 2007 (Table 1), the environmental impacts of this are offset by a reduction in uncontrolled dumping and more composting and recycling.

A life cycle analysis can be applied to any combination of re-use, recycling and disposal methods. This example shows the often significant reductions in environmental effects, such as greenhouse gas production and resource depletion, from reducing waste and improving the way we manage it.

* These figures differ due to landfill cover and capping requirements included in the analysis.

Source: *Life Cycle Tool for Waste Management in New Zealand: Wisard – Sensitivity Analyses Report; PriceWaterhouseCoopers in collaboration with URS.*

- **Waste management industry support:** There is a groundswell of enthusiasm for action throughout the waste management industry, typified by the Waste Management Institute of New Zealand's *Lifefterwaste* programme (see box page 38).
- **Meeting international obligations:** New Zealand has obligations under international environmental agreements. These include the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (ratified by New Zealand in 1994)¹³, and the 1986 Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (or SPREP — ratified in 1990).

Links with other government policies

This strategy has links with the recently released *National Energy Efficiency and Conservation Strategy*, as well as New Zealand's international obligations under the Kyoto Protocol and the Framework Convention on Climate Change.¹⁴

The benefits of minimising waste in terms of energy efficiency and greenhouse gas reduction can be significant. For example:

- preventing waste generation and re-using products and materials reduces energy use and generation of greenhouse gases
- diverting organic wastes from landfill reduces the generation of methane
- improving landfill management can reduce the release of greenhouse gases; the use of landfill gas for energy can replace other fuels.

13 The Basel Convention requires signatories to reduce the amount of hazardous waste they produce and minimise the environmental effects of moving and disposing of hazardous waste.

14 New Zealand's climate change programme is still developing policies enabling New Zealand to meet the greenhouse gas emissions target in 2008-2012. It is likely that future greenhouse

gas emissions will have a 'price', allowing emitters to assess abatement opportunities against the cost of buying emissions permits from the international market. A financial incentive will encourage reductions in emission-producing behaviour, such as poor landfill management and inefficient resource use in production systems.

VISION AND PRINCIPLES

Our vision of the future

Towards zero waste and a sustainable New Zealand is a vision for a society that values its environment and resources, and a guide to achieving it. People in such a society would use all resources efficiently and at a sustainable rate. They would no longer regard waste as inevitable, or see it as someone else's problem. They would identify and practice innovative methods for reducing waste and improving resource efficiency. They would respect others' environmental values and recognise the assault waste inflicts on these values.

Three goals reflect Government's renewed commitment to sustainable development and underpin this vision:

- **Society**
lower waste's costs and risks to society
- **Environment**
reduce environmental damage from generation and disposal of waste
- **Economy**
increase economic benefit by using material resources more efficiently.

Towards zero waste and a sustainable New Zealand requires new ways of thinking at every level of the community. It doesn't mean radical change — we don't have to avoid the products and services we normally use — but we do have to think smarter about the service we want from products and find better ways of getting it.

Towards zero waste and a sustainable New Zealand will require an upgraded information base for future waste management and minimisation. We must also identify economic incentives for reducing waste, including price-based incentives to improve the effectiveness and efficiency of resource and energy use.

Cutting down on the amount of waste we generate and discard is the long-term challenge this strategy is designed to meet.

Core principles

Six principles will guide central and local government in implementing this strategy. These are widely used in other developed countries and are in line with OECD principles for strategic waste prevention. They are not absolute but subject to equity, practicality and cost.

Global citizenship

Our responsibility to protect the environment extends beyond New Zealand's borders.

The impact of some wastes, such as those that deplete the ozone layer, are not confined to New Zealand. Other wastes cannot be treated here and have to be exported, while New Zealand processes some wastes for our Pacific neighbours. This principle recognises our responsibility to consider the global consequences of our actions in generating, managing, treating and disposing of wastes.

Kaitiakitanga/ stewardship

All members of society are responsible for looking after the environment, and for the impact of products and wastes they make, use and discard.

The Maori concept of kaitiakitanga expresses an integrated view of the environment and recognises the relationship between all things. Kaitiakitanga represents the obligation of current generations to maintain the life sustaining capacity of the environment for present and future generations. Stewardship is similar, acknowledging the role and responsibility we each have in managing the environment for the good of all. Fulfilling this obligation means managing all wastes to lessen their adverse environmental effects.

Extended producer responsibility

Producers have a degree of responsibility for their products throughout the product's lifecycle, from production through to final disposal.

This principle encourages those manufacturing or marketing goods to find ways of reducing a product's environmental impact throughout its life. The principle may not apply to all products.

Full-cost pricing

The environmental effects of production, distribution, consumption and disposal of goods and services should be consistently costed, and charged as closely as possible to the point they occur.

This principle encourages minimisation of environmental effects by ensuring full environmental costs are reflected in product and service prices, and paid as closely to their source as possible.

Life-cycle principle

Products and substances should be designed, produced and managed so all environmental effects are accounted for and minimised during generation, use, recovery and disposal.

This principle requires consideration of all the environmental effects of production, use and disposal on our land, air and water.

Precautionary principle

Where there is a threat of serious or irreversible damage, lack of full scientific certainty should not be a reason for postponing cost-effective measures to prevent environmental degradation or potential adverse health effects.¹⁵

Where decision-makers have limited information or understanding of the possible effects of an activity, and there are significant risks or uncertainties, a precautionary approach should be taken.

¹⁵ Principle 15 of the Rio Declaration on Environment and Development.