



Ministry for the
Environment
Manatū Mō Te Taiao

The New Zealand **Waste Strategy**

REDUCING HARM, IMPROVING EFFICIENCY



Published in October 2010 by the
Ministry for the Environment, Manatū Mō Te Taiao,
PO Box 10362, Wellington 6143, New Zealand

ISBN: 978-0-478-33297-1 (print)
978-0-478-33298-8 (electronic)

Publication number: ME 1027

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Ministry for the Environment's website:
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Foreword

The revised New Zealand Waste Strategy sets out the Government's long-term priorities for waste management and minimisation.

The Strategy's two goals provide direction to local government, businesses (including the waste industry), and communities on where to focus their efforts in order to deliver environmental, social and economic benefits to all New Zealanders. The goals are:

- reducing the harmful effects of waste
- improving the efficiency of resource use.

The Strategy's flexible approach will ensure waste management and minimisation activities are appropriate for local situations.

Local government has played a lead role in waste management and minimisation over the past decade. I trust this good work will continue – especially with the ongoing responsibilities for territorial authorities under the Waste Minimisation Act 2008 (the Act).

Getting waste disposal pricing policies right is crucial to improving waste minimisation. The Act helped change the price signals around waste by introducing the waste disposal levy and generating funding for waste minimisation initiatives through the Waste Minimisation Fund and territorial authority levy payments.

The purpose of the levy is to increase the price of waste disposal to better reflect the cost of waste on the environment, society and the economy and to generate money for waste minimisation initiatives.

The Fund enables projects that improve waste management and minimisation to be developed and implemented. These projects can vary from the construction of new waste infrastructure to the advancement of new markets for waste.

The inclusion of waste disposal facilities in the emissions trading scheme will also encourage the climate change impacts of landfill gas emissions to be reflected in waste disposal charges.

Implementing and administering the Waste Minimisation Act is the focus of central government's action on waste. Waste-related initiatives under the Resource Management Act 1991 and the Hazardous Substances and New Organisms Act 1996 are also under way – for example, the proposed National Environmental Standard for Assessing and Managing Contaminants in Soil.

Due to better environmental controls and the hard work of local government, businesses and the community, there has been significant progress in waste management and minimisation over the past decade.

Waste is now generally disposed of in larger, better managed and designed disposal facilities and the majority of New Zealanders now have access to a range of recycling services. For example, in 2006, 97 per cent of New Zealanders had access to either kerbside recycling or drop-off centres. The waste industry has also stepped up to higher standards and has embraced new opportunities.

In the future, I encourage businesses to develop product stewardship schemes, particularly for products that may have a harmful effect on the environment when they become waste.

This revised Strategy builds on the good work already under way and describes how we can all contribute to the goals of reducing the risk of harm from waste and improving the efficiency of resource use.



Hon Dr Nick Smith
Minister for the Environment

The **change in context** for the New Zealand Waste Strategy

The New Zealand Waste Strategy released in 2002 filled a gap in the legislative framework for managing and minimising waste by setting targets to move New Zealand towards 'zero waste'. Since 2002, a range of activities and regulatory changes have resulted in progress towards these targets.

Progress to date

These activities and regulatory changes have only been possible through considerable investment from central and local government, businesses (including the waste industry), and communities.

- There has been a major improvement in the access to and use of recycling services. In 2006, 73 per cent of people had access to kerbside recycling, up from 20 per cent in 1996; and 97 per cent had access to either kerbside recycling or drop-off centres.
- More stringent application of regulatory requirements provided by the Resource Management Act has resulted in the closing of a number of substandard disposal facilities. In 1995, there were 327 operational disposal facilities. Today, 54 operational waste disposal facilities are registered with the Online Waste Levy System.
- The increased uptake of best practice guidelines for managing disposal facilities means the disposal of waste is now generally concentrated in larger, better designed and managed facilities using leachate collection systems, engineered liners, and systems for recovering methane gas.
- The introduction of the Waste Minimisation Act 2008 has significantly enhanced the regulatory framework for efficient resource use. For example, the introduction of the waste disposal levy has contributed to an increase in the cost of waste disposal, which may encourage more recycling and other waste minimisation activities.

But there's still more to do

Although there have been considerable improvements in access to recycling services and environmental controls around disposal facilities, waste management and minimisation practices still vary around the country and further improvements can be made.

Research continues to highlight the value of recycling. However, collecting and transporting materials for recycling, reuse and recovery can be costly due to New Zealand's small and dispersed population. Despite this, waste reuse, recycling and recovery is often technologically feasible and increasingly economically viable. Local government, businesses and communities are encouraged to increase access to kerbside recycling, particularly in urban areas where this is economically viable.

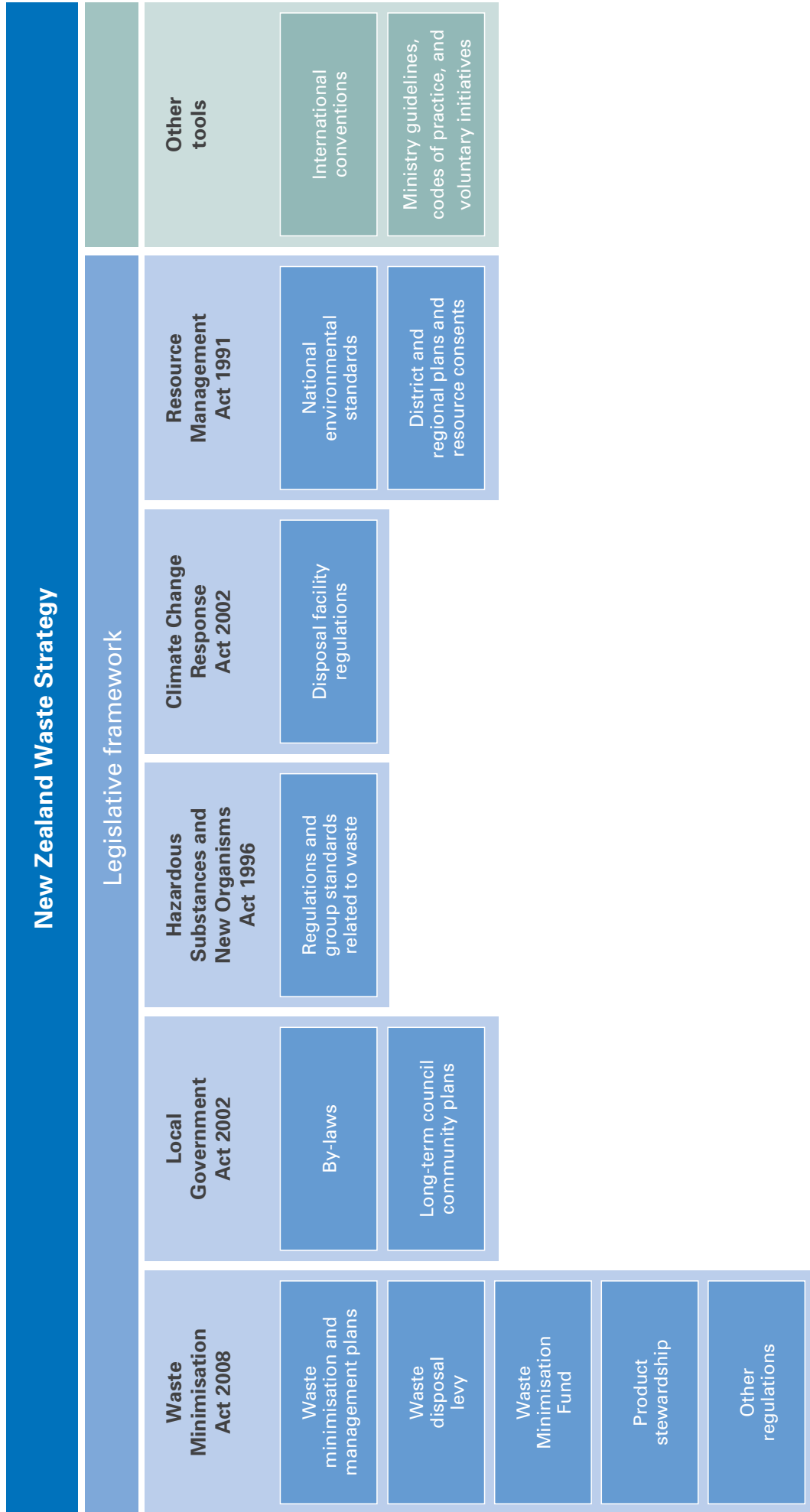
The lack of data about waste hampers our ability to plan appropriate activities to improve waste management and minimisation.

Reassessing the Strategy

Following the considerable progress of the past eight years it is now timely to reassess the New Zealand Waste Strategy. The wider waste management and minimisation landscape has changed, with the Strategy now playing an overarching role in the comprehensive toolkit for managing and minimising waste (see the diagram on the following page and Appendix 1).

While the 'zero waste' vision of the 2002 Strategy was ambitious, many of its targets were unable to be measured or achieved. The revised Strategy enables a more flexible approach to waste management and minimisation through two high level goals: reducing harm and improving efficiency.

The toolkit for **managing and minimising waste** in New Zealand



New Zealand's goals for **managing** and **minimising waste**

The New Zealand Waste Strategy provides high-level direction to guide the use of the tools available to manage and minimise waste in New Zealand. The Strategy also allows for a flexible approach that can be adapted to different situations.

To convey this high-level direction, the Strategy has two goals:

Goal 1: Reducing the harmful effects of waste

When planning waste management and minimisation activities, local government, businesses and communities should assess the risk of harm to the environment and human health from waste to identify and take action on those wastes of greatest concern.

Goal 2: Improving the efficiency of resource use

When planning waste management and minimisation activities, local government, businesses and communities should improve the efficiency of resource use to reduce the impact on the environment and human health and capitalise on potential economic benefits.

Goal 1: Reducing the harmful effects of waste

There is a risk that waste will cause harm to the environment or human health.

The level of risk can be established by using appropriate criteria to assess both the likelihood of the harm occurring and its potential consequences.

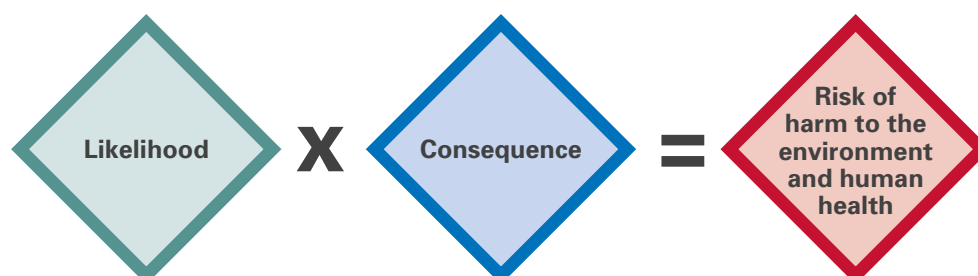
Reducing the risk of harm means taking steps to reduce the likelihood of it occurring or, if unavoidable, managing its consequences.

When planning waste management and minimisation activities, local government, businesses and communities should identify wastes of concern and assess the risk each presents so a decision can be made on how to most effectively allocate waste management and minimisation effort and resources.

Examples of factors to consider when identifying wastes are outlined in Appendix 2. Useful guidance for analysing the likelihood of harm occurring and its consequences can also be found in the international standard ISO 31000:2009 Risk Management and the Australia New Zealand Handbook on Risk Management Guidelines HB 436:2004.

Once the level of risk has been determined for a range of wastes, action should focus on those that pose the highest level of risk.

The **risk equation**: calculating the **risk of harm**



Goal 2: Improving the efficiency of resource use

Resource efficiency is about getting more from less. There is significant potential for New Zealand to improve productivity and reduce waste by using resources more efficiently when producing and consuming goods and services.

Resource efficiency in production could mean:

- improving the ratio of outputs to inputs
- reducing and reusing waste products
- minimising what needs to be disposed of at the end of a product's life.

Resource efficiency in consumption could mean:

- choosing products that are reusable, durable and able to be repaired rather than discarded
- choosing products with less packaging
- choosing recyclable products and packaging.

Historically, the greater the economic growth, the greater the consumption of goods and services. This means more resources are used in production and more waste is subsequently generated. We can separate waste generation from economic growth by using fewer resources when producing goods and services or by getting more value from the resources used, including reusing and recycling wastes.

Improving resource efficiency can provide long-term cost savings by reducing both resource inputs and waste outputs and therefore disposal costs. There are also economic opportunities around developing new technologies to help prevent waste and reuse materials and to improve how waste is managed.

Businesses have a particular role in improving efficiency – as waste generators and as designers, manufacturers and distributors of the goods and services we use. For example, producing lighter, thinner packaging is one way the packaging industry is reducing waste.

The resource recovery industry is growing. This has been boosted by the development of commercial operations to collect materials for recycling or reuse.

To support New Zealand's moves towards improving efficiency, a change in the way we all buy and dispose of goods and services is needed. Pricing policies that reflect the full costs associated with waste are one way to instigate this behaviour change.

Taking responsibility

It is important to understand how central government, local government, the waste industry, businesses and communities will be affected by the New Zealand Waste Strategy.

Central government

Central government is responsible for implementing and administering the legislative framework for managing and minimising waste. Central government also ensures New Zealand complies with multilateral environmental agreements and international conventions.

The Government provides high-level direction through the New Zealand Waste Strategy to local government, businesses and communities on where to focus their waste management and minimisation efforts.

The Ministry for the Environment also publishes guidelines to promote good practice in waste management and minimisation (including managing contaminated sites). These guidelines can be found on the Ministry for the Environment's website, under 'publications' – www.mfe.govt.nz/publications.

Local government

Regional councils

Under the Resource Management Act, regional councils regulate the environmental effects of waste disposal facilities by granting and monitoring resource consents.

Regional councils can also play an important role in facilitating a collaborative approach to waste management and minimisation planning amongst territorial authorities.

Territorial authorities

Territorial authorities have a statutory responsibility to promote effective and efficient waste management and minimisation within their district, in accordance with the Waste Minimisation Act.

Under the Act all territorial authorities must review their waste management and minimisation plans (WMMPs) by 1 July 2012 and every six years thereafter. When reviewing their WMMPs territorial authorities must have regard to the New Zealand Waste Strategy.

Territorial authorities should use their WMMPs to guide their spending of their portion of the waste disposal levy in ways that maximise opportunities to minimise waste.

The waste industry

Good practice improvements can be driven by industry-led initiatives such as guidelines and codes of practice.

The waste industry has a role in increasing the range of services available and ensuring incentives or prices affect customers in a way that leads to a reduction in waste.

The industry also plays a key role with harmful wastes as their effective management and minimisation often requires technical knowledge and links to other production processes.

Businesses and communities

Businesses can improve resource efficiency in the production and consumption of goods and services. This will not only reduce waste generation but also provide cost savings and reduce environmental impacts.

Environmental impacts may also be reduced through industry-led product stewardship schemes, which are particularly encouraged for products that may be harmful to the environment when they become waste.

Businesses are encouraged to adopt and embrace programmes and join networks that aim to reduce environmental impacts while enhancing productivity.

Individuals can help minimise waste by changing their behaviours at home and work, supporting businesses which are reducing their environmental impacts through efforts such as product stewardship, or by joining community and voluntary groups. Individuals and community groups are critical to the success of recycling services, resource recovery, and education programmes about waste minimisation.

Glossary

Disposal facility	Defined by the Waste Minimisation Act 2008 as a facility, including a landfill, at which waste is disposed of, including household waste, and which operates at least in part as a business to dispose of waste.
Diverted material	Defined by the Waste Minimisation Act 2008 as anything that is no longer required for its original purpose and, but for commercial or other waste minimisation activities, would be disposed of or discarded.
Hazardous waste	Materials that are flammable, explosive, oxidising, corrosive, toxic, ecotoxic, radioactive or infectious. Examples include unused agricultural chemicals, solvents and cleaning fluids, medical waste, and many industrial wastes.
Organic waste	Includes garden waste, kitchen waste, food process wastes, and sewage sludge.
Territorial authority	Defined by the Local Government Act 2002 as a city council or a district council.
Waste	Defined by the Waste Minimisation Act 2008 to: (a) mean anything disposed of or discarded; and (b) include a type of waste that is defined by its composition or source (for example, organic waste, electronic waste, or construction and demolition waste); and (c) to avoid doubt, includes any component or element of diverted material, if the component or element is disposed of or discarded.
Waste minimisation	Defined by the Waste Minimisation Act 2008 to mean reduction of waste and the reuse, recycling and recovery of waste and diverted material.
Risk	In the context of reducing the risk of harm, risk means the potential effect of waste before local government, businesses and communities agree a plan to reduce the likelihood or consequence of harm to the environment and human health in their area.
Likelihood	A qualitative (or quantitative) description of probability or frequency.
Consequence	The outcome of an environmental or human health related event expressed either quantitatively or qualitatively. There can be a range of possible outcomes associated with such an event.

Toolkit for managing and minimising waste

Legislative framework

Waste Minimisation Act 2008

The purpose of the Waste Minimisation Act 2008 (the Act) is to encourage waste minimisation and a decrease in waste disposal to protect the environment from harm and provide environmental, social, economic and cultural benefits.

The Act introduced several new tools for managing and minimising waste. The Act provides:

- clearer responsibilities for territorial authorities in managing and minimising waste, including requirements for reviewing and implementing waste management and minimisation plans (WMMPs)
- a levy of \$10 per tonne (plus GST) on waste disposed of at disposal facilities, to be used for funding waste minimisation activities undertaken by territorial authorities, businesses and community groups
- central government recognition of product stewardship schemes (through accreditation) and the ability to impose mandatory product stewardship schemes for priority products
- the power to make regulations to collect information and to impose standards for various aspects of waste minimisation.

Responsibilities of territorial authorities

All territorial authorities must adopt WMMPs that include methods for reducing waste. Waste management plans prepared under the Local Government Act 2002 are deemed to be WMMPs under the Waste Minimisation Act.

Territorial authorities must review their WMMPs by 1 July 2012 and then at intervals of no more than six years thereafter.

Before reviewing their WMMPs territorial authorities must conduct a waste assessment to establish background information for their WMMPs. The assessments must include a set of options to meet the forecasted waste-related demands of the district.

The Waste Minimisation Act requires territorial authorities to spend funding received from the waste disposal levy (described below) according to the priorities set out in their WMMPs, which in turn must have regard to the New Zealand Waste Strategy.

The WMMPs should also identify how territorial authorities will measure progress on their goals and targets for waste management and minimisation in their district and in relation to their expenditure of funds from the waste disposal levy.

Waste disposal levy and Waste Minimisation Fund

From 1 July 2009, the Waste Minimisation Act introduced a waste disposal levy of \$10 per tonne (plus GST) on all waste disposed of at disposal facilities. The purpose of this levy is to:

- raise revenue to promote and achieve waste minimisation
- recognise the cost of waste disposal on the environment, society and the economy by increasing the cost of waste disposal.

Fifty per cent of the funds raised by the levy go directly to territorial authorities. This allocation is calculated on a population basis. Payments are made quarterly and must be spent only to promote or achieve waste minimisation and in accordance with each territorial authority's WMMP.

The other fifty per cent of the funds raised by the levy money (minus administration costs) forms the Waste Minimisation Fund, which was set up to boost New Zealand's performance in waste minimisation through:

- investment in infrastructure and systems for waste minimisation
- building educational and promotional capacity.

The Fund will help fund waste minimisation projects that increase resource efficiency, increase reuse, recovery and recycling, and decrease waste disposed of at disposal facilities. The Minister for the Environment sets the criteria for the Fund and makes the final decisions about which projects receive funding.

Product stewardship

The purpose of product stewardship as set out in the Waste Minimisation Act is to encourage people and organisations involved in the life of a product to share responsibility for:

- ensuring effective reduction, reuse, recycling or recovery of products
- managing environmental harm arising from the product when it becomes waste.

Product stewardship schemes are initiatives that help reduce the environmental impact of manufactured products. When a product stewardship scheme is introduced, anyone involved in the product's life cycle, such as producers, brand owners, importers, retailers and consumers, accepts responsibility for the environmental effects of that product.

The Act provides a regulatory framework for establishing and accrediting product stewardship schemes. At this time, product stewardship schemes are voluntary, but priority products may be regulated to ensure producers and others in the supply chain share responsibility for end-of-life products.

Local Government Act 2002

The Local Government Act 2002 (LGA) requires territorial authorities to produce a long-term council community plan (LTCCP) every three years from 2006. The LTCCP describes the activities of the territorial authority, outlines the financial strategy, and provides a long-term focus for its decision-making. The LTCCP discusses the first three years in detail and outlines the following seven years.

A territorial authority's WMMP will be influenced by desired community outcomes (as outlined in an LTCCP) and, once adopted, implementation of the WMMP will need to be incorporated into the LTCCP.

Under section 145 of the LGA, territorial authorities may pass bylaws to protect the public from nuisance and maintain public health and safety. The LGA also sets out the powers of territorial authorities to enforce bylaws.

In addition to the power to make bylaws under the LGA, territorial authorities may also pass bylaws specifically relating to waste under the Waste Minimisation Act. Any bylaw must not be inconsistent with the territorial authority's waste management and minimisation plan.

Hazardous Substances and New Organisms Act 1996

The Hazardous Substances and New Organisms Act 1996 (HSNO) and its regulations control the import, manufacture, use and disposal of manufactured chemicals that have hazardous properties, as well as the introduction of new organisms into New Zealand.

Hazardous substances are defined in the HSNO Act and include substances that meet thresholds for being one or more of the following: explosive, flammable, capacity to oxidise, toxicity (including chronic toxicity), and ecotoxicity (with or without bioaccumulation). The substance can meet these criteria itself or generate a substance that meets the criteria when in contact with air or water.

Provisions relating to group standards were added to the HSNO Act in 2005. These are used to regulate handling and management of groups of substances and could be used to manage hazardous wastes.

Climate Change Response Act 2002

The New Zealand Emissions Trading Scheme (NZ ETS), under the Climate Change Response Act 2002, will help New Zealand meet its international climate change obligations and reduce emissions. The NZ ETS will result in a carbon price that will encourage people to carefully assess behaviours and investment decisions.

Under the legislation, operators of waste disposal facilities have mandatory obligations from 2012. By the end of March 2013, operators of disposal facilities will be required to report total emissions for the 2012 calendar year.

From 2014, disposal facility operators are required to report emissions by 31 March and surrender a matching number of emission units by 31 May for the preceding calendar year. As such, full NZ ETS obligations begin in 2013.

Resource Management Act 1991

The environmental impacts of waste facilities, such as disposal facilities, recycling plants and cleanfills, are controlled through the Resource Management Act 1991.

Consents are required for new disposal facilities, and are generally also required for controlling and monitoring discharges from closed landfills.

Depending on the requirements of district and regional plans, waste facilities generally require consents for land use, discharges of leachate, discharges of waste onto land, discharges of stormwater, and discharges of disposal facility gas to air.

Resource consent applications for disposal facilities generally consider:

- the nature of the underlying geology
- the proposed disposal facility control measures, such as liners and collection systems for leachate and disposal facility gas
- the proposed disposal facility management plan
- distances to groundwater, surface water and surrounding properties
- the type(s) of wastes proposed to be deposited at the disposal facility (such as hazardous waste)
- potential impacts from a land-use perspective, for example, light and noise pollution, hours of operation, impact on roading networks, and the control of nuisances, such as odour and vermin.

The National Environmental Standards for Air Quality prohibit open burning of toxic materials, such as tyres, bitumen and waste oil, and fires at landfills.

The Standards also required that, by October 2007, all operating landfills with a capacity of 1 million tonnes or more would collect and manage landfill gas (largely methane from decaying organic matter). In 2006, 23 per cent of landfills were collecting landfill gas for beneficial use, compared with 5 per cent in 1998.

Contaminated sites, including closed disposal facilities, are the legacy of poor management of hazardous substances and waste. The proposed National Environmental Standard for Assessing and Managing Contaminants in Soil will set a standard at which land is considered safe for human health.

The proposed standard will also ensure that land affected by contaminants in soil is appropriately identified and assessed at the time the land is developed and, if necessary, remediated or the contaminants contained to make the land safe for human use.

Other tools

International conventions

New Zealand is party to a number of international conventions that are relevant to waste, namely the Stockholm, Basel and Waigani Conventions.

The Stockholm Convention on Persistent Organic Pollutants commits governments to protect human health and the environment by reducing and, where feasible, eliminating the production and environmental releases of listed persistent organic pollutants (POPs), such as polychlorinated biphenyls (PCBs).

The Convention requires that New Zealand collects and arranges for the destruction of specific waste chemicals, and that we properly manage material and sites that are contaminated with POPs.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal aims to achieve the environmentally sound management of hazardous wastes through the appropriate regulation of hazardous waste movement across national boundaries.

The Convention applies a prior informed consent process to transboundary movements of hazardous wastes. To implement the Convention, New Zealand requires those exporting hazardous waste to get a permit to ensure the waste is only shipped to countries or facilities where environmentally sound management of the waste can be ensured.

The Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region (the 'Waigani Convention') provides additional provisions concerning problems with hazardous wastes in Pacific Island states.

Guidelines

The Ministry for the Environment has published guidelines to promote good practice in waste management and minimisation, including contaminated sites. The guidelines can be found on the Ministry's website, under 'publications' – www.mfe.govt.nz/publications.

Good practice improvements are also driven by industry-led initiatives (such as guidelines and codes of practice).

Factors to consider when assessing harm

The factors to consider below are examples only and do not indicate priorities for action.

Examples of harmful properties

Intrinsic properties of hazardous substances

Corrosiveness: The ability to destroy or irreversibly damage another surface or substance it comes into contact with. Examples include acids, such as sulphuric, nitric and hydrochloric acids. The main hazards to people include damage to the eyes, the skin, and the tissue under the skin; inhaling or swallowing a corrosive substance can damage the respiratory and gastrointestinal tracts.

Capacity to oxidise: Capable of reacting chemically with oxygen. Examples include the oxidation of carbon to yield carbon dioxide, or the reduction of carbon by hydrogen to yield methane.

Explosiveness: Capable of sudden expansion owing to a release of internal energy; and includes the capability to generate deflagration (subsonic combustion), or pyrotechnic effects. Examples include nitroglycerine or grain dust.

Flammability: How easily something will burn or ignite, causing fire or combustion.

Toxicity (including chronic toxicity): The degree to which a substance is able to damage an exposed organism. Toxicity can refer to the effect on a whole organism, such as an animal, bacterium or plant, as well as the effect on a substructure of the organism, such as a cell (cytotoxicity) or an organ (organotoxicity), such as the liver (hepatotoxicity). Note that the effects are dose-dependent.

Ecotoxicity (with or without bioaccumulation): The potential for biological, chemical or physical stressors to affect ecosystems. Stressors might occur in the natural environment at densities, concentrations or levels high enough to disrupt the natural biochemistry, physiology, behaviour and interactions of the living organisms that make up the ecosystem.

Note: hazardous substances also include those that, on contact with air or water, generate a substance with any one or more of the above properties.

Biological hazards

Infectious disease: A clinically evident illness resulting from the presence of pathogenic microbial agents, including pathogenic viruses, pathogenic bacteria, fungi, protozoa, multicellular parasites, and aberrant proteins known as prions. These pathogens are able to cause

disease in animals and/or plants. Infectious pathologies are also called communicable diseases or transmissible diseases due to their potential to transmit from one person or species to another by a replicating agent.

Other forms of harm

Mechanical injury: The ability to result in cuts or grazes. Examples include broken glass and other sharp objects.

Nuisance: The ability to detract from amenity values. Examples include unwanted sights, sounds or smells.

Greenhouse gas emissions: The ability to emit greenhouse gases. Examples include decomposing organic waste.

Examples of methods to minimise exposure

Compliance: Is the labelling, packaging, handling, transportation and disposal of the waste compliant with applicable Hazardous Substances and New Organisms Act and Resource Management Act controls?

Labelling: Does the waste's labelling accurately outline all the hazards or potential hazards to both people and the environment if the waste, or elements of the waste, are exposed to the wide range of conditions that could arise? If there are hazards or potential hazards, does the labelling outline a protocol(s) for minimising the effect of the hazard or minimising the risk of the hazard occurring?

Packaging: Does a waste's packaging protect both people and the environment if the waste or elements of the waste are exposed to the wide range of conditions that could arise?

Handling and transport: Is the waste handled (for example, stored or transported) in accordance with relevant protocol(s)? Does the handling and transport of the waste protect against any hazardous compound effects that would arise if the waste were to be combined with other wastes?

Disposal: Are there cost-effective means of disposing of a waste once it has reached the end of its life that do not pose a hazard or potential hazard to people and the environment?

Minimising volume: Can the waste or elements of the waste be diverted, recovered or reused? Are there any other measures that could be put in place to minimise the volume of the waste?

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