

Industrial Waste: Regulation and Policy

I Introduction

The growth of humankind and industrialisation has caused major damage to the natural environment. Many of these harms have resulted from what is disposed or discarded of. While some individuals consciously purchase goods that result in low waste, much waste has already occurred during production. For every household rubbish bag placed at the kerb, approximately 71 rubbish bags of waste are created from industries such as agriculture, mining, logging, oil and gas exploration and packaging, in the US.¹ Yet, with such a large problem, major industries in New Zealand face little effective regulation. This paper reviews the state of New Zealand's waste, the history of waste regulation and the existing measures regulating industrial waste. Finally, this paper suggests potential developments to encourage waste reduction and better uses of resources.

II Waste in New Zealand

Every product has a hidden history - how that product was made. US research indicates that about 94% of the materials used in manufacturing durable products become waste.² New Zealand is also one of the highest per capita producers of waste,³ with approximately 1500 kilograms of solid waste per person being produced during 2006.⁴ Organic waste comprises the largest proportion, followed by rubble, hazardous waste and timber.⁵ Much waste in landfills also includes products like plastic bottles and batteries which can take hundreds of years to degrade and are potentially hazardous.⁶ In terms of value, New Zealand produces about \$250 million worth of potentially reusable resources annually that instead become

¹ Zero Waste "Facts and Figures" (2015) Zero Waste New Zealand <<http://www.zerowaste.co.nz/>>.

² Paul Hawken, Amory B. Lovins, and L. Hunter Lovins, *Natural Capitalism: Creating the Next Industrial Revolution*, (Little Brown Company, Snowmass, 1999). Zero Waste "Facts and Figures" (2015) Zero Waste New Zealand <www.zerowaste.co.nz/>.

³ (18 June 2008) 647 NZPD 16725.

Statistics New Zealand "New Zealand in the OECD" (2005) Statistics New Zealand Tātuaranga Aotearoa <www.stats.govt.nz/browse_for_stats/>.

⁴ Ministry for the Environment "Environment New Zealand 2007" (2007) Ministry for the Environment <www.mfe.govt.nz/> at 127.

⁵ Ministry for the Environment "Solid Waste Composition" (2009) Ministry for the Environment <www.mfe.govt.nz/> at 1.

⁶ Rick LeBlanc "How Long Does It Take Garbage to Decompose" <www.recycling.about.com/>.

waste.⁷ From landfills, almost 65% of the waste could be composted or recycled. Not only is there a lot of waste, much of it has value and other uses.⁸

The Ministry for the Environment (MfE) states that the main waste problems are the inefficient use of materials and energy, environmental effects of waste disposal, the volume of waste generated and a lack of understanding of waste creation and disposal.⁹ Much emphasis and effort has been put into encouraging individuals to change their behaviour. Yet, little focus has been on businesses/industry who contribute significantly to the waste problem. One example is New Zealand Steel's Glenbrook Mill which produces 140,000 tonnes of metal waste annually that cannot be reused, recycled or sold.¹⁰ Another example is construction and demolition waste which is approximately 820,560 tonnes annually. This figure increased from 17% of the total waste stream in 1995, to 27% of the total waste stream in 2007.¹¹ Finally, a single New World supermarket can produce approximately 132 tonnes of waste annually.¹²

In sum, there is scope for businesses/industries to use resources more efficiently. Part of the problem is that wasteful behaviour in the past has been tied to an improved bottom line. OECD reports indicate that the volume of waste created by a country traditionally reflects its level of economic activity.¹³ However, one improvement the MfE estimated was the amount of waste disposed to landfills actually decreased over the period 1995 to 2006. During this period, inflation adjusted gross domestic product increased by 40 per cent.¹⁴ This indicates a weakening of the link between economic growth and waste, especially since much of the growth over 1995-2006 was in industries that are major waste producers.¹⁵

⁷ (11 September 2008) 650 NZPD 18830.

⁸ Motive "Reduce Your Rubbish" (2003) Motive Case Studies <www.motive.co.nz/>.

⁹ Ministry for the Environment "Waste Minimisation in New Zealand: A discussion document from the Ministry for the Environment" (2009) Ministry for the Environment <www.mfe.govt.nz/> at 5.

¹⁰ New Zealand Steel "Redefining Waste" New Zealand Steel <www.nzsteel.co.nz/>.

¹¹ Mahara Inglis "Construction and Demolition Waste – Best Practice and Cost Saving" (2007) <www.branz.co.nz/> at 2. Ministry for the Environment "Solid Waste Composition" (2009) Ministry for the Environment <www.mfe.govt.nz/> at 11.

¹² Anne Gibson "Supermarket cuts waste 67%" (13 June 2014) New Zealand Herald <www.nzherald.co.nz/>.

¹³ Ministry for the Environment "Waste Minimisation in New Zealand: A discussion document from the Ministry for the Environment" (2009) Ministry for the Environment <www.mfe.govt.nz/> at 5.

¹⁴ Ministry for the Environment "Environment New Zealand 2007" (2007) Ministry for the Environment <www.mfe.govt.nz/> at 127.

¹⁵ Ministry for the Environment "Environment New Zealand 2007" (2007) Ministry for the Environment <www.mfe.govt.nz/> at 127.

III History of Waste Regulation

During the early years of colonial settlement in New Zealand waste was not considered a large problem.¹⁶ Many resources were organic or durable, such as food, clothing and equipment. Particularly because of the technological and geographic limitations faced by early settlers, resources had to be used effectively.¹⁷ Generally, the approach taken was “waste not want not”.¹⁸ Often because of the limited ability to transport large amounts of waste, little of it was kept offsite, unlike the current system. In other words the current “out of sight, out of mind” approach wasn’t prevalent, rather people usually had to live with their waste.

Early concerns about waste largely related to its impact on human health.¹⁹ In particular, the Health Act 1876 provided for the removal of refuse from premises,²⁰ and where a health board had jurisdiction, it could provide public refuse receptacles and locations for the deposit of rubbish.²¹ Additionally, the establishment of city, borough and county councils as well as town boards provided the ability for local bodies to establish bylaws relating to waste.²² However, local authorities could and did ignore the Health Act with impunity.²³

The treatment of waste as a health issue continued through subsequent Health Acts, where local authorities had the ability to create bylaws for improving, promoting, or protecting public health or preventing anything injurious to health.²⁴ Similar provisions continue in the current Health Act. However, the focus shifted with both a growing population and urbanisation. More goods were bought and available rather than grown, homemade or unobtainable. The economy grew and initially local authorities, who had responsibility for creating bylaws appeared to show little concern about waste, provided it was not injurious to

¹⁶ Helgard Wagener “The Waste Minimisation Act 2008 and the Ability of Territorial Authorities to Manage Solid Waste” (2009) 13 N.Z. J. Env'tl L 295 at 298.

¹⁷ Christopher David Musser “The other side of paradise: consumer society and suburban waste management” (MA thesis, University of Auckland, 2001) at 93.

¹⁸ Helgard Wagener “The Waste Minimisation Act 2008 and the Ability of Territorial Authorities to Manage Solid Waste” (2009) 13 N.Z. J. Env'tl L 295 at 298.

¹⁹ Helgard Wagener “The Waste Minimisation Act 2008 and the Ability of Territorial Authorities to Manage Solid Waste” (2009) 13 N.Z. J. Env'tl L 295 at 298.

²⁰ Health Act 1876, s 47.

²¹ Health Act 1876, s 50.

²² The Municipal Corporations Acts 1867, 1876 & 1886; the Counties Acts 1876 & 1886; and the Town Districts Act 1881.

²³ Geoffrey W. Rice “The Making of new Zealand’s 1920 Health Act” (1988) NZJH 22 1 02.

²⁴ Health Act 1956, ss 25, 29, 64, 123 & 123A.

public health or a nuisance. Eventually, however, local authorities adopted the role of removing household solid waste.²⁵ This was problematic as landfill sites were often chosen poorly. For example, in 1898 an Auckland refuse dump and sewerage disposal area were situated close to the collecting ponds of Western Springs, which at the time was the main water supply to Auckland. Subsequently water quality was affected.²⁶ The approach adopted, which still remains was “out of sight, out of mind”.

A growing awareness of the effects of production and consumption arose during the late 1980s. Action was taken through the Resource Management Act (RMA), a major piece of environmental legislation. However, the RMA does not focus on waste and does not set out specific objectives for how councils or businesses should manage waste.²⁷ Rather, it provides broad considerations relating to waste. For example, a principle of the Act is “avoiding, remedying, or mitigating any adverse effects of activities on the environment”.²⁸ The RMA also allows for the introduction of national environmental standards, regulations and policy statements. Currently none of these have been put in place in relation to waste. Some changes relating to waste have, however, occurred under the RMA, for example, fires are now prohibited in landfills.²⁹ Local authorities also have the ability to regulate the discharges into the environment (land, air or water) through regional planning and discharge consent requirements. For example the dumping of waste from ships and aircraft.³⁰

Under the RMA and the Local Government Act 2002 (LGA) the primary responsibility for waste management lies with territorial authorities. These two Acts were the key regulatory mechanisms for waste prior to the Waste Minimisation Act (WMA). The LGA allows for territorial authorities to pass bylaws to maintain public health and safety and protect the public from nuisance.³¹ Territorial authorities have also been required to adopt waste management plans under the LGA.³² These plans have “to make provision for the collection

²⁵ Christopher David Musser “The other side of paradise: consumer society and suburban waste management” (MA thesis, University of Auckland, 2001) at 94-95.

²⁶ Christopher David Musser “The other side of paradise: consumer society and suburban waste management” (MA thesis, University of Auckland, 2001) at 94-95.

²⁷ Helgard Wagener “The Waste Minimisation Act 2008 and the Ability of Territorial Authorities to Manage Solid Waste” (2009) 13 N.Z. J. Envtl L 295 at 307

²⁸ Resource Management Act, s 5(2)(c).

²⁹ Resource Management (National Environmental Standards Relating to Certain Air Pollutants, Dioxins, and Other Toxics) Regulations 2004, R 6, 25, 26 & 27.

³⁰ Resource Management Act, s 30(1)(d)(iva).

³¹ Local Government Act 2002, ss 145-146.

³² Local Government Act 2002, s 286.

and reduction, reuse, recycling, recovery, treatment, or disposal of waste".³³ Other Acts also play a role in waste control, such as the Hazardous Substances and New Organisms Act (HSNO) and the Litter Act. The HSNO primarily relates to waste through controlling the manufacture and disposal of hazardous substances that pose significant risks to human health and/or the environment.³⁴ And the Litter Act allows local authorities to regulate litter and illegal dumping.³⁵

Until 2002 there was little guidance on the issue of waste management, rather councils had wide discretion. There was a need for national leadership, with the response from the MfE being *The New Zealand Waste Strategy*.³⁶ The strategy focusses on waste prevention, rather than disposal, but its role and importance for councils was unclear. Now, under the WMA councils must consider the waste strategy in their waste management and minimisation plans.³⁷ The strategy was revised in 2010, with the goals of reducing the harmful effects of waste and efficient resource use.³⁸ Businesses are seen to play a large role in achieving these goals and are encouraged to improve the ratio of outputs to inputs as well as reducing and reusing waste products. While the strategy is not binding, it remains a part of New Zealand's approach to waste management and is the setting in which the WMA has been enacted.³⁹

IV Current Waste Regulation

The WMA, RMA, HSNO, Litter Act, LGA and waste strategy are all part of the current waste minimisation framework. The WMA is the first piece of legislation to focus solely on waste in New Zealand. The purpose of the Act is to encourage waste minimisation and to decrease waste disposal in order to protect the environment from harm and provide environmental, social, economic and cultural benefits.⁴⁰ It continues the sustainability objectives of the RMA and LGA. The main provisions of the Act are a \$10 levy per tonne on

³³ Local Government Act 1974, s 539. Adopted in Waste Minimisation Act 2008, s 44.

³⁴ Hazardous Substances and New Organisms Act 1996.

³⁵ Litter Act 1979.

³⁶ Ministry for the Environment "The New Zealand Waste Strategy: towards zero waste and a sustainable New Zealand" (2002) Ministry for the Environment.

³⁷ Waste Minimisation Act 2008, s 44(c).

³⁸ Ministry for the Environment "The New Zealand Waste Strategy: reducing harm, improving efficiency" (2010) Ministry for the Environment at 5.

³⁹ Helgard Wagener "The Waste Minimisation Act 2008 and the Ability of Territorial Authorities to Manage Solid Waste" (2009) 13 N.Z. J. Env'tl L 295 at 299.

⁴⁰ Waste Minimisation Act 2008, s 3.

waste disposed to landfills, requiring and promoting product stewardship schemes, mandatory waste reporting, establishing a Waste Advisory Board and clarifying territorial authority responsibilities in relation to waste.

The levy on waste aims to disincentivise waste generation.⁴¹ If businesses put large amounts of waste into landfills, they will pay for it. However, the levy's primary purpose is to raise funds for waste minimisation initiatives.⁴² The revenue generated is split 50 per cent for territorial authorities to implement their waste management plans and 50 per cent funding waste minimisation projects.⁴³ The amounts collected are not insignificant, which reflects the amount of waste going to landfills. For example, the Auckland Council was predicted to receive \$5 million per year towards waste minimisation projects.⁴⁴ Subsequently, the Council has given grants for a range of initiatives, for example Eco Stock Ltd received \$50,000 to purchase equipment that turns food waste into stock feed.⁴⁵ The problem is the levy doesn't directly combat waste generation, rather it is a charge which may discourage waste. It is also unlikely to be effective at the current \$10 per tonne rate, which was set to assess the impact on waste disposal.

Another key element of the WMA is the introduction of product stewardship regimes. The Minister for the Environment may declare a product to be a priority product if it causes significant environmental harm when it becomes waste or if there are significant benefits from reduction, reuse, recycling, recovery or treatment of the product.⁴⁶ A product stewardship regime can then be implemented.⁴⁷ Guidelines relating to the expected reduction in environmental harm and disposal objectives for the product can also be introduced.⁴⁸ Beyond this, the Act allows for regulations controlling or prohibiting the manufacture, disposal or sale of any products containing specified materials.⁴⁹ Thus the Minister has wide

⁴¹ (11 September 2008) 650 NZPD 18830 .

⁴² Helgard Wagener "The Waste Minimisation Act 2008 and the Ability of Territorial Authorities to Manage Solid Waste" (2009) 13 N.Z. J. Env'tl L 295 at 330.

⁴³ Ministry for the Environment "Waste Minimisation in New Zealand: A discussion document from the Ministry for the Environment" (2009) Ministry for the Environment <www.mfe.govt.nz/> at 9.

⁴⁴ Auckland Council "Auckland Council Waste Assessment" (2011) Auckland Council <www.aucklandcouncil.govt.nz/> at 16.

⁴⁵ Scoop Independent News "Recipients named for \$500,000 'zero waste' fund" (2013) Scoop <www.scoop.co.nz/>.

⁴⁶ Waste Minimisation Act 2008, s 9(2)(a).

⁴⁷ Waste Minimisation Act 2008, ss 9(2)(b) & 10.

⁴⁸ Waste Minimisation Act 2008, s 12.

⁴⁹ Waste Minimisation Act 2008, s 23(1).

powers to make effective restrictions on products that can be particularly harmful to the environment.

The Waste Minimisation Fund can be used as an incentive to encourage waste minimisation efforts by businesses, while the Minister's powers can be used to force businesses/industry to use better production methods and materials. Even the threat of the use of the Minister's powers could cause industry to change. In other words there is both a carrot (waste minimisation funding) and a stick (the use of the Minister's powers) for businesses under the WMA. This focus on businesses/industry changing is reflected in the Hansard prior to enactment, where it was stated the WMA was designed to "motivate manufacturers to redesign their products and packaging to reduce the amount of waste created in the first place – at the beginning of the pipe".⁵⁰

To date, however, the Minister has not used his powers, no priority products have been identified, nor have mandatory product stewardship regimes or restrictions been put in place. In fact, recently marine conservation organisation Our Seas Our Future campaigned for the Minister to phase out single-use plastic bags. The campaign specifically makes use of the Act, requesting that plastic bags be treated as a priority product.⁵¹ Despite a petition, which currently has 11,266 signatories,⁵² the Minister refused to act, claiming plastic bags make up a "tiny portion" of waste and the government does not think a ban is justified.⁵³ This has resulted in a private members bill being drafted.⁵⁴ While plastic bags may constitute a small proportion of waste and the Minister is "focussing on the waste that makes up a far greater proportion of that which goes to landfill",⁵⁵ nothing has been done about any of these products that constitute a larger proportion of waste. Considering the Act has been in force for six years, and waste is viewed as an environmental priority by both Government and individuals, it appears the Act is underutilized.⁵⁶

⁵⁰ (11 September 2008) 650 NZPD 18830.

⁵¹ Our Seas Our Future "Phase out single-use plastic bags in New Zealand" (2015) Change.org <www.change.org/>.

⁵² Our Seas Our Future "Phase out single-use plastic bags in New Zealand" (2015) Change.org <www.change.org/>.

⁵³ Jonathan Carson "Plastic bag phase-out plan rubbished" (28 May 2015) <www.stuff.co.nz/>.

⁵⁴ Rachel Thomas & Nancy El-Gamel "Greens want a plastic bag-free New Zealand" (15 May 2015) <www.stuff.co.nz/>.

⁵⁵ Jonathan Carson "Plastic bag phase-out plan rubbished" (28 May 2015) <www.stuff.co.nz/>.

⁵⁶ Auckland Council "Auckland Council Waste Assessment" (2011) Auckland Council <www.aucklandcouncil.govt.nz/> at 21. Peter Neilson "Peter Neilson On... The Waste Minimisation Bill" (July 2006) New Zealand Management <www.management.co.nz/>.

In addition to mandatory product stewardship for priority products, accreditation is also provided for businesses that adopt voluntary product stewardship regimes. Several voluntary product stewardship regimes exist in areas such as packaging, whiteware, oil, tyres, cellphones and paint.⁵⁷ The regime requires the provision of significant information relating to the product and the applicant must also outline the measurable waste minimisation objectives for the product and timeframes for meeting these. If these criteria are met accreditation must be granted.⁵⁸ The voluntary stewardship regimes provide a method for further encouraging waste minimisation by businesses and have caused some change.⁵⁹

V Potential Developments

The WMA is the most significant waste legislation Parliament has enacted, however, it has widely been accepted that it is only one part of dealing with the waste problem.⁶⁰ Within the WMA the first action that can be taken is for the Minister to set performance standards prescribing specific waste minimisation targets for the implementation of regional waste management and minimisation plans.⁶¹ If councils fail to meet such standards, Ministerial guidance could be given. Such an approach would give more direction to councils and encourage a consistent approach nationwide. Consequently this would mean councils would be able to provide greater certainty and direction to businesses/industry for reducing waste.

The second proposed change is for more active use of the WMA's mandatory product stewardship regimes, or at least more consideration as to whether a product should be given priority status. Consultation with the Waste Advisory Board and the public about the harms caused by products such as plastic bags and mobile phones would prove a useful starting point. The current approach means the Minister's powers are dormant.

⁵⁷ Helgard Wagener "The Waste Minimisation Act 2008 and the Ability of Territorial Authorities to Manage Solid Waste" (2009) 13 N.Z. J. Envtl L 295 at 329.

⁵⁸ Waste Minimisation Act 2008, s 15.

⁵⁹ Plastics NZ "Product Stewardship" (2015) Plastics NZ <www.plastics.org.nz/>.

⁶⁰ (11 September 2008) 650 NZPD 18830. (18 June 2008) 647 NZPD 16725.

⁶¹ Waste Minimisation Act, s 49.

The third action that could be taken is increasing the levy for waste disposal to landfills. Currently, a \$10 levy does not provide a significant enough deterrent to reduce waste.⁶² Perhaps higher rates could be trialled nationwide over a period of time to examine the impact. It is vital to determine and implement the levy amount that will provide the optimal waste deterrence. If this occurs then there would be two potential effects. The first, most likely effect, is to make businesses think about the level of waste they produce and consider reducing it. The second effect is that businesses put in place measures to reduce their waste. The most direct action that can be taken under the WMA however, is for the Minister to prohibit the manufacture or sale of products containing specific materials.⁶³ This is a significant power and its use could effectively reduce particularly harmful wastes as well as the amount of waste created. Such an approach has worked in Ireland, South Africa and Bangladesh where plastic bags are banned.⁶⁴ All these options are available and achievable and would make the WMA more effective.

More generally a greater emphasis needs to be placed on production waste. Specifically, changes need to be made to the development and design of many products. If consumers purchase low waste products, for example those with minimal packaging, then less waste goes to landfills. This requires the options consumers have to be changed from high waste to low waste. Such a change needs to occur on the production side first. This could be achieved either through further legislation, using the WMA or educating businesses and individuals.⁶⁵ Considering 85% of New Zealanders are either unsure or do not think there are laws aimed at reducing waste,⁶⁶ and 93% of people know little or nothing about the WMA, education about waste and the WMA is crucial.⁶⁷ Businesses need to know about the WMA because it can affect the whole production process. A starting point would to clarify the role of businesses under the WMA.

Businesses also need to learn that reducing waste can make sense both in terms of the environment and profits, the two are not mutually exclusive. Businesses would be more likely

⁶² (18 June 2008) 647 NZPD 16725.

⁶³ Waste Minimisation Act 2008, ss 22 & 23.

⁶⁴ (18 June 2008) 647 NZPD 16725.

⁶⁵ (18 June 2008) 647 NZPD 16725.

⁶⁶ UMR Research “Public Awareness of the Waste Minimisation Act and Waste Disposal Levy” (February 2011) Ministry for the Environment <www.mfe.govt.nz/> at 4.

⁶⁷ UMR Research “Public Awareness of the Waste Minimisation Act and Waste Disposal Levy” (February 2011) Ministry for the Environment <www.mfe.govt.nz/> at 4.

to change their production processes or at least review them if they knew the potential cost savings. For example, a Waikato plastics company was generating 6.55 tonnes of plastic waste annually. The company decided to regrind on site, saving \$15,400 per annum in raw materials.⁶⁸ This was a better cost and environment option than sending it to a recycler or landfill.⁶⁹ Internationally, companies like Xerox and Subaru have also made major cost savings through reducing waste.⁷⁰ Subaru reported that 99.8% of its Indiana plant's refuse is reused or recycled, saving millions of dollars per year.⁷¹ Overall, a focus on production where waste is treated as a resource is necessary.⁷²

VI Conclusion

Waste in New Zealand is a growing problem, it is costly for businesses and harms the environment. Approaches towards waste have changed throughout New Zealand's history, from the colonial era where waste had to be minimised due to a lack of transportation and resources, to waste being treated as a health issue through successive Health Acts and finally to the current era of the WMA and supporting framework. The WMA, in particular provides a foundation for improving the amount of waste produced and has specific mechanisms that can target some of the biggest waste producers, namely businesses/industry. However, more can be done in both within the WMA and beyond. Changes such as setting targets for councils, using mandatory product stewardship regimes, and increasing levies can all have a positive effect on waste. Of particular importance is educating businesses, as low waste can be both good for the environment and profits. Finally, action is needed, not just by government but also businesses/industry, starting with a shift in attitude towards waste away from 'out of sight, out of mind'.

⁶⁸ Plastics NZ "Waste Reduction" (2015) Plastics NZ <www.plastics.org.nz/>.

⁶⁹ Plastics NZ "Waste Reduction" (2015) Plastics NZ <www.plastics.org.nz/>.

⁷⁰ Chris Woodyard "It's waste not, want not at super green Subaru plant" (19 February 2008) USA Today <www.usatoday30.usatoday.com/>.

⁷¹ Chris Woodyard "It's waste not, want not at super green Subaru plant" (19 February 2008) USA Today <www.usatoday30.usatoday.com/>.

⁷² (11 September 2008) 650 NZPD 18830.