

# Zero Waste

## New Thinking for a Sustainable Society

Notes from a presentation by Warren Snow at the 2<sup>nd</sup> Waste Not Asia Conference July 2001

Over the last two hundred years mankind has created a system of production and consumption based on the premise that natural resources are endlessly available and that waste can be poured into nature forever. The result is that almost the entire output of the human industrial system is waste. Materials are flowing through society, being converted into waste and ending up as in nature at a faster than at any time in history.

The same industrial system that created the problem has created two solutions for waste - landfills and incineration. A landfill is just a big hole in the ground; a better name would be a 'toxic waste pit'. New research tells us that landfills will have to be looked after for up to a thousand years and yet the aftercare requirements in many landfill contracts are as short as thirty years. The big waste companies walk away with massive profits and leave the community for many generations to deal with the heavy metals, toxins, gases, damage to the environment and the loss of land. The other industrial solution is to burn waste, with all the consequent toxic releases into the atmosphere and dangerous residues that still require disposal to landfill. Add to this the loss of valuable resources, jobs and embodied energy. We are becoming victims of our own 'old' thinking.

Both of these solutions are born of a system that still believes it can triumph over nature, that man can always create a new solution to the problems that man creates. But these solutions create serious problems further down the road. We need a new vision, a new approach, and a new solution to waste.

Communities around the world are rising up against waste, fighting landfills and incinerators and in many cases stopping them<sup>1</sup>. But for every one that's stopped, ten more are proposed and the corporations that propose them have huge resources. These corporations believe they are solving a serious problem for society but their technologies don't eliminate waste, they simply transform it through burning or hide it through burying. The problem is that burying and burning technologies are based on the same old thinking that created the industrial system that created the problem of waste in the first place.

We must fight to stop incinerators and landfills, but we also need to offer a better and safe solution, one that everybody can agree with, one that everybody can stand for. Zero Waste provides people who are 'anti' something with a real positive alternative. Zero Waste is 'for' something - a new industrial system - it's the design principle for a sustainable society.

All around the world, surveys show community support for and participation in recycling at consistently over ninety percent. Yet recycling will never fundamentally change the nature of the industrial system because it deals with final outputs at the end of pipe. It has no impact on the design of the products and services that flow through communities that end up as waste and require burying or burning.

The good news is that Zero Waste can out-compete existing waste disposal technologies. Not only from the social and environmental perspective but also the economic<sup>2</sup>. As a new vision and strategy for society Zero Waste is attracting support from surprising quarters. People from business, cities, government, international consultancies, small business, community groups, inventors, entrepreneurs, and financiers are coming to see Zero Waste as a driver for creating sustainable communities. It's practical, realistic and economic and gives everybody who is concerned for the fate of the planet hope that they can make a difference. We can pull

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<sup>1</sup> Gaia is becoming recognised throughout the world as a key part of the community based anti-incineration movement and as such is a bright shining light of hope for the many people who suddenly find that there is going to be a huge landfill or incinerator in their back yard.

<sup>2</sup> Go to [www.zerowaste.co.nz](http://www.zerowaste.co.nz) for studies demonstrating the economics of resource recovery and recycling

back from the brink of economic and environmental disaster and create a new society based on an industrial system that creates more and more value with less and less through-put of materials - a closed loop materials efficient society. Zero Waste means nothing less than the total and radical redesign of the industrial system.

A significant benefit of Zero Waste is that it favours local communities and local economies<sup>3</sup>. When materials start to circulate in the economy, local opportunities are created and start to reverse the forces of globalisation, which until now have increasingly marginalised small and rural communities, and certain sectors of society. People on low incomes and with less education are finding local opportunities for training and employment as more and more industries spring up around the materials that are being diverted back into the economy or nature. Zero Waste is a breakthrough strategy for a society in crisis. Incremental change won't bring about the change we urgently need. We need a totally new way of looking at the problem, something that creates new thinking - a new vision, and a new target for society. Zero Waste is that new vision and target.

In New Zealand we have set a national target date of Zero Waste by 2020. The New Zealand government have not adopted it yet but our campaign is based around the aim of encouraging the New Zealand government to adopt a national strategy of Zero Waste by 2020.

The New Zealand story so far is that since setting up the Zero Waste New Zealand Trust in 1997 we have helped galvanise a network of around 50 community-based groups that have set up local action campaigns to reduce waste in their communities. Many of these groups have won contracts from their councils to provide education resources in schools or to actually take control of parts of the waste stream. A number of them run transfer stations, which they have turned, into resource recovery centres. Some of them have won quite large contracts to run kerbside recycling programmes or waste collection systems. They are using the money or the funds from these waste collection systems to redesign processes that will result in high diversion of waste from landfill – and to help achieve other social objectives.

We have been able to convince (40%) of New Zealand's municipalities to adopt targets of Zero Waste by 2015. This doesn't necessarily mean that all of these municipalities have done a lot more than the councils that haven't adopted Zero Waste, its just that they now have a new vision, and target so that when decisions are made by council staff on waste they must take into account that at the very top of their waste policy is this official target 'Zero Waste by 2015'. All of their planning and waste systems must now be designed around this target. This is resulting in changes in the way that contracts are written and the design of waste systems that focus on resource recovery. Transfer stations are being converted into Resource Recovery Centres and Resource Recovery Centres are being designed from the ground up with recovery in mind. Our whole aim is to starve landfill. New Zealand does not have incineration at this point. An attempt to establish a large incineration plant was successfully blocked from coming to New Zealand through a combination of community action and inability of the company to meet local environmental requirements.

To keep community groups active and to encourage them, we provide small grants to enable them to meet and network and seeding grants for various projects. We also provide grants for training that will assist groups to better manage local community based recycling programmes

We have a number of people setting up small business as 'Zero Waste Advisors'. These people are very important to the campaign and specialise in different areas such as hospital waste, resource recovery centre design, waste audits, management, training, kerbside recycling, contracts, community based businesses etc etc. We try to support Zero Waste advisors because if their businesses become successful through our initial support then we have more people on the ground advising on the correct way to set up Zero Waste systems. The success of the whole Zero Waste campaign in New Zealand is dependant on community groups, cities, institutions and businesses getting the right advice. Too many existing consultancies and advisors in the past have been unaware of the power of waste reduction and recycling and even less of the Zero Waste concept

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<sup>3</sup> Go to [www.zerowaste.co.nz](http://www.zerowaste.co.nz) for studies on the economic benefits to communities from recycling and the recovered materials industry

and so have tended to advise on how to build bigger and better waste systems. In some cases they have even recommended that cities not recycle because it is not economic, when this is totally incorrect. By having our own advisors we know that they will give the correct information and also work with their customers to make sure their waste minimisation projects are implemented properly.

We have recognised the need to provide support for entrepreneurs who are inventing new products, machines and processes that use recycled materials. Many small communities in New Zealand have suffered through the liberalising of the economy and the impacts of globalisation. Development of recycling and recovered materials industries can reverse those impacts and create employment and business opportunities in economically hard hit communities. Inventors and entrepreneurs are coming up with new ideas for the use of recovered materials and a number of businesses are exporting materials, products, technologies and even expertise. A number of these businesses wouldn't have got off the ground if it weren't for either a small seed grant to help them develop their invention or through technical support<sup>4</sup>. Up until now the traditional banking system has not recognised recycling and lack of access to capital has been a major impediment to the building of the industry.

A recent study showed that New Zealand is currently exporting around \$100 million worth of recycled materials, recycling machinery, recycled products and recycling consultancy services.

The Zero Waste New Zealand Trust holds conferences and seminars around New Zealand and the sponsorship of these events helps to keep ideas flowing and support to keep the movement strong. It is impressive to see the number of jobs that small communities can create through reuse, recycling and disassembly. Community recycling businesses are often able to reach deeper into the waste stream than the market economy could ever do because their drivers are quite different to those of private enterprise. They want to create jobs and wealth for their community. They want a future for their children and are prepared to work at far smaller margins than private operators would ever think of, sometimes even at a loss in order to maintain a service that will keep people employed in their community. In the long run the communities that have done this have ended up with greater waste reduction outputs and greater numbers of people employed.

A survey in Auckland of 65 businesses, four years ago showed that those 65 businesses were employing over 1700 people and contributing \$133 million dollars per annum to the economy. All of them were in growth mode and some had problems getting access to finance. Over the last two years we have set up a specialised fund called the 'Recycloans Fund' in recognition of this problem. The Recycloans Fund is dedicated to supporting the recovered materials industry and fundraises to lend money to new recycling initiatives and people making products from recovered materials. There is also a very successful fund in Christchurch City in the South Island – the Recovered Materials Foundation that has a track record at finding new uses for recovered materials and assisting new businesses.

In New Zealand we consider that our clean environment is our nation's biggest asset, inextricably linked to the success of our export and tourism industries. Current waste disposal methods pose serious threats to our reputation as a clean source of food and products for the world and as a clean tourist destination. Cheap disposal either to landfill or by incineration is a threat to our efficiency and industrial competitiveness.

New Zealand with a population of less than four million is littered with old landfills. Most of them are near or on sensitive marine and fresh water systems. One city can count 50 old closed landfills, all this in less than a hundred years. On the worldwide scene we know that increasing population multiplied by increasing consumption is resulting in increased waste and decreased overall quality of life. We cannot allow old thinking to guide our destiny. Old thinking creates landfills; toxic waste pits with endless leaching of heavy metals and toxins into our environment. Old thinking designs incinerators and tries to bluff us that they are safe. We must stand against these but we must also project a new vision and that vision is Zero Waste.

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<sup>4</sup> The Recycloans Fund In Auckland and the Recovered Materials Foundation in Christchurch provide loans to businesses making products from recycled materials.

A crisis demands action, a breakthrough. Zero Waste in itself is not a technology but rather a basket of technologies that can compete head to head with landfill and incineration. Already Zero Waste is changing the way businesses, institutions, communities, schools and individuals think about waste. We are slowly educating people to think beyond the end of the pipe; to see that the whole supply chain is their responsibility and that every time they buy something they must think of where it will end up at the end of its life.

We want everybody to take personal responsibility; we want designers to design products that are durable, repairable and easy to disassemble for recycling and made of materials that can easily be incorporated harmlessly back into nature or back into the industrial system.

We want manufacturers to invest in new design, to create products with no waste, to eliminate wasteful packaging and to take responsibility for the whole lifecycle of their products.

We want retailers to ask their buyers to think about every single product that they buy and to demand that their suppliers create products in an environmentally sound way with fair labour conditions and no waste. Retailers must provide systems for consumers to return goods for disassembly and to start moving from selling products to leasing and servicing. We want universities and schools to teach Zero Waste as part of their basic curriculum and to have their own recycling systems in place. We want them to teach people to be responsible when they leave school for helping to redesign the industrial system so that human society can truly be part of nature. We want them to deeply understand that the human economy is a subset of nature not the other way around.

We want consultants and engineers to retrain and gain new systems of understanding around waste, and to train in the Zero Waste technologies that are being created around the world. We want community organisations to work with local authorities and municipalities to create sustainable employment opportunities by eliminating waste at the end of the pipe and returning all recycled materials back into the industrial system or harmlessly back into nature.

We want governments to take the leadership role and to put the vision of a Zero Waste society forward for their communities and industries to make their countries more competitive. Those countries that don't aim for Zero Waste will increasingly become less efficient and competitive and their economies will decline.

The road to Zero Waste is a journey. To succeed we have to be focused and clear on where we are going on any journey. The vision and the target must be Zero Waste. We need a date to go with that vision and we believe that 2020 is achievable. Many large companies around the world have set Zero Waste business goals and some of them are already close to achieving it in at least some of their processes<sup>5</sup>.

There are three core principles for setting a Zero Waste strategy

1. The first principle is '**End cheap waste disposal**'. The only way to make Zero Waste possible is for the true cost of disposal to be charged to the waste generators. If we were to charge the true cost of disposal nobody would be able to design something that was going to end up in a landfill or incinerator because the cost of that product would be too high and nobody would buy it.
2. The second principle is '**Design waste out of the system**'; Zero Waste is an end-of-pipe' strategy but above all it is a design principle. We must design waste out of the system if we are to achieve Zero Waste and we must design the strategies that will enable the supply chain to be radically changed so that it all points up and down the chain, each person is playing their part in creating closed looped, resource efficient systems.
3. The third principle is '**Engage the people**'. No vision and no target will be successful if we do not engage every single person and help them to believe that it is possible to move towards the target. This is what we are attempting in New Zealand.

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<sup>5</sup> Ricoh, Toyota, 3m.

There is still a long road ahead and there are many critics waiting and watching for us to fail. Our vision is strong and our target is firm, we are slowly building the infrastructure for a Zero Waste economy and society. If in New Zealand we set a target of Zero Waste by 2020 we will once again be leaders.

Finally we take our lead from other examples where New Zealand has led on other important issues. New Zealand was the first country in the world to give women the vote and the first country in the world to ban nuclear weapons. Our hope is that New Zealand will be the first country in the world to set a national target of Zero Waste by 2020. My colleagues and I believe that this is totally feasible and we are working as hard as we can to research the technologies, the processes and the social inventions that will help us to achieve our goal. We challenge other groups, institutions, people and even countries to join us in this quest. It doesn't really matter who is first as long as we are all aiming for the same vision. With new thinking we can create a sustainable future. Zero Waste is the design for that sustainable future.

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