REBOOTING RECYCLING
WHAT CAN AOTEAROA DO?

A DISCUSSION PAPER PRESENTED BY
THE WASTE MANAGEMENT INSTITUTE
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wasteMINZ

SUMMARY POINTS

THE MARKET FOR **RECYCLED MATERIALS HAS COLLAPSED** BECAUSE CHINA IS, IN EFFECT, SHUTTING OUT OUR RECYCLABLES

MANY COUNCILS AND RECYCLING OPERATORS IN NEW ZEALAND ARE **STRUGGLING TO COPE** DUE TO THE LACK OF MARKETS AND LOWER INCOME

ACTION IS REQUIRED – THIS ISSUE WILL NOT RESOLVE QUICKLY OR BY ITSELF

THE CURRENT CRISIS IS ULTIMATELY A RESULT OF THE WAY WE MANAGE MATERIALS BEING **FUNDAMENTALLY BROKEN**. SHORT-TERM FIXES, WHILE IMPORTANT, WILL NOT BE ENOUGH

THIS IS A GREAT CHANCE TO MOVE TO A **BETTER MODEL**, ONE THAT WORKS

MOVING TO A BETTER MODEL WILL REQUIRE EVERYONE TO **WORK TOGETHER**

GOVERNMENT MUST CONSIDER **SHORT-TERM ACTIONS** INCLUDING ENABLING ACCESS TO LEVY FUNDING, COMMUNICATIONS AND GETTING BETTER DATA

GOVERNMENT MUST ALSO CONSIDER **MEDIUM TO LONG-TERM ACTIONS** THAT WILL START TO BUILD A **CIRCULAR ECONOMY**. ACTIONS LIKE REVISING THE NATIONAL WASTE STRATEGY, CHANGES TO THE WASTE DISPOSAL LEVY, PRODUCT STEWARDSHIP AND DESIGN, BUILDING DATA SYSTEMS, GOOD PRACTICE GUIDANCE, COMMUNICATIONS AND POSITIVE PUBLIC PROCUREMENT.

ALL ACTIONS PROPOSED CAN BE ACHIEVED **WITHIN CURRENT LEGISLATION**. SIMILARLY, THE **FUNDING MECHANISMS ALREADY EXIST**.

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What exactly is the problem?

In simple terms, the international market for recycled materials has collapsed because China is no longer accepting the quantity of material for recycling that they used to.

Plastic, paper, and metal collected for recycling is traded internationally as a commodity. Historically China has been the largest buyer for this material and purchased over 50% of all the world's recyclables.[1]

In July of 2017, China announced restrictions on the import of 24 types of material into the country. The new policy was termed 'National Sword'. National Sword has now been replaced by 'Blue Sky' which essentially extends the restricted imports policy.

The part of the policy that has created issues in the recycling industry are new strict standards for mixed paper and mixed plastic. These materials can still theoretically be imported into China, but they are required to have very low levels of contamination – 0.5%. The majority of kerbside recycling systems are not able to produce levels of contamination this low (around 2-4% is typical).

So, while China has not directly banned imports of recyclable materials, National Sword/Blue Sky has had the effect of drastically reducing demand in the biggest market. The reduction in demand has seen prices for these and related grades of material fall dramatically. Sellers of these commodities have sought other markets, but there is not sufficient capacity currently in the plants outside of China to process all the materials. This has meant stockpiles are building up and some material may not be able to find an end market.

Unless solutions are found urgently, material collected for recycling could end up being landfilled.

This would damage the public trust in our kerbside recycling systems that has been built up over many years.

1 https://www.pri.org/stories/2018-01-01/mountains-us-recycling-pile-china-restricts-imports. Velis C.A. (2014). Global recycling markets - plastic waste: A story for one player – China. Report prepared by FUELogy and formatted by D-waste on behalf of International Solid Waste Association - Globalisation and Waste Management Task Force. ISWA, Vienna, September 2014.

What effect has it had in New Zealand?

New Zealand can process approximately half of the paper and cardboard that is collected here but only a small proportion of the plastic – with no significant local processing of 3-7 plastics. Like most other countries with kerbside recycling, New Zealand has sent a lot of its collected recyclables to China, in particular, mixed paper and mixed plastic.

Paper and plastics are usually two of the most valuable kerbside commodities for recyclers in terms of revenue. Paper because it makes up the largest amount by weight (40-50%) and plastic because some grades can command high prices. The large falls in price, and the difficulty in finding markets for these grades of material is therefore severely affecting the economic viability of local collections.

A recent survey of councils and recycling operators[2] found that:

Four of the nine operators surveyed are stockpiling mixed plastics 3-7

82% of the councils surveyed indicated that they have been affected by the Chinese restrictions and are selling 3-7 plastics at a lower price, stockpiling, or struggling to find new buyers.

Although the issue with mixed paper is less pronounced, 40% are still indicating they are having to sell mixed paper at a lower price, stockpiling, or struggling to find new buyers.

The situation has now reached a critical point; our recycling system is in crisis!

This raises the spectre that recyclable materials going to landfill could be the next step.

2 WasteMINZ March 2018. Responses were received from 38 councils, and nine recycling operators.

What is likely to happen next?

It is not expected that market prices and demand will return to pre-National Sword levels in the foreseeable future.

The restrictions that China has imposed are due to expire at the end of 2018, however just as 'Blue Sky' replaced 'National Sword' in March this year, it is likely that there will be further extensions of the restrictions. These moves by the Chinese are officially "To protect China's environmental interests and people's health"[3], but it is also believed that the move is designed to encourage the development of higher levels of their own domestic recycling. The latest policy changes are part of a history of China having to deal with significant quantities of contaminated material coming into the country.[4]

It remains to be seen to what degree processors outside of China scale up to process the material that is looking for a market. Some scaling up will almost certainly occur, but it is unlikely to match the capacity of China. The risk for other processors scaling up is that it is unknown whether and to what degree China could relax restrictions in the future. There is also a risk for sellers that alternative markets to China could start to impose stricter standards if they receive too much contaminated material like China had been.

3 WTO Notification G/TBT/N/CHN/1211 18 July 2017

4 The most notable of these was the 'Green Fence' initiative in 2010 which placed similar but not as strict conditions on recycling imports and which led to a fall in the market at that time.

What is the industry in New Zealand doing about it?

Since the restrictions were announced, recyclers and councils have been managing the issues to the best of their abilities at an individual level. This has included efforts to reduce contamination and improve material quality, seek new markets, stockpile materials and renegotiate contracts to share risk.

In early May 2018 a group of key stakeholders from New Zealand's recycling sector met to share their experiences and to provide information which has helped to inform this discussion document.[5] While a wide range of interests and views were represented, there was general agreement on the following:

The current system is fundamentally broken. It relies on councils and recyclers reacting to and cleaning up whatever materials producers decide to put on the market. It requires enormous effort to achieve good clean streams of useable material – and this is not always possible. There is therefore too much cost and not enough value for the present model to be sustainable. It has only worked up until now because China was taking the environmental impacts – which they are no longer prepared to do.

The present model is far too supply driven. Materials are collected because there is a public desire for recycling. But the materials collected are not necessarily those for which there is demand. This is notably the case for 3-7 grade plastics.

There will be some significant short-term pain for the industry, but the stark reality of the situation is also a unique driver to change the system to a more viable and more circular model.

5 Participants included: Ministry for the Environment, Northland Waste, OJI, EnviroWaste, Countdown/Progressive, Smart Environmental, Whangarei District Council, Auckland Council, Visy, Reclaim, O-I Glass, Christchurch City Council, Wellington City Council, Waste Management, WasteMINZ, Eunomia Research & Consulting.

Change will not be able to be achieved by operators and councils working alone. It will require a collaborative approach involving operators, councils, producers and brand owners, and the community, with central government as the key enabler.

There is no single measure that will deliver the change that is needed. It will take a suite of well-designed initiatives that support each other to move us forward. Some of these actions need to happen immediately, others will take longer to put in place.

What needs to happen in the short term?

In the short term (by the end of 2018), the main issue that needs to be addressed is to improve the quality of recycling that is collected. This means reducing the amount of contamination so materials have a higher value.

Actions that could potentially be taken to improve the quality of recycling (within the current kerbside collection model) are:

Undertake more sorting at kerbside. This helps make sure contamination is removed before the material is bulked. It also educates the public as non-recyclable material is left behind.

Avoid collecting glass together with other recyclables - because if glass breaks it contaminates the other materials. This could mean introducing separate glass collection, not collecting glass, or setting up bottle banks to take glass.

Reduce the compaction ratios on collection vehicles to reduce glass breakage, and make materials easier to separate.

Slow down sorting lines at material recovery facilities and/or put more staff or machinery on the lines to reduce contamination and improve quality.

Engage and educate the public to reduce the contamination they put in the bin.

Stop collecting certain grades of material for which there are insufficient markets (like 3-7 plastics).

Send mixed grades of sorted material back through sort lines to further reduce contamination to a level that enables the product to be sold, or split out grades that may have a value on their own.

Gather better data to understand the exact nature of the issues and better target solutions.

Most of these actions will come at a cost, which is not insignificant. In the short-term, to support the industry, the following measures are suggested:

Access to Funding

Establish a Minister-initiated funding stream from the Waste Minimisation Fund which would be left open for an interim period. The fund would be open specifically for councils and operators to address issues in respect of recycling, avoiding materials going to landfill, or defaulting on contracts. The purpose of the fund would not simply be to subsidise existing collections but to take specific actions, such as those noted above, to address critical recycling issues. Applications to the funding stream would be considered on a case by case basis.

Use of Levy Funds

Allow councils to spend their levy funds (for an interim period only) on approved actions that are not in their Waste Management and Minimisation Plans, but that are targeted at addressing issues of recycling quality and avoiding sending recycling to landfill.

Communications

Give consideration to a Minister-initiated public awareness programme focussed on reducing contamination in recycling. The focus of the programme would be educating households to only put in their recycling bins items that they are certain are recyclable. This would be a short-term measure and would not remove the need for a more comprehensive longer-term public awareness programme.

Commission an initial data gathering exercise

While individual operators have reasonable data, there is no reliable industry-wide data. This is needed to enable quantitative assessment of the situation and establish a baseline, so the effectiveness of actions can be measured. Better industry data will be important to inform any decisions on the allocation of funding as well as strategic industry decisions. Key data that is not presently available that a study should aim to gather could include:

How much of each commodity is actually sent to China from NZ? Now and historically?

How much of each commodity is processed in NZ and what is the local capacity?

What have been the actual price impacts in the different markets by commodity? What is the likely impact of these on service viability?

The level of contamination in sorted recyclables: Mixed paper & Mixed plastic. i.e. how far off 0.5% are we for each type of recycling system (Commingled; Glass out; Kerb sort)?

What are the things that are creating the contamination in each system that makes it difficult to reach the threshold? – i.e. following on from above, what is the actual problem in each type of system, and what are the specific actions to address them?

This package of short-term measures will assist the industry to respond effectively in a coordinated fashion and ensure that disruptions to household recycling services are minimised.

What needs to happen in the medium to long term?

As noted above, the current issues with recycling are not merely short-term problems but are a result of the way we deal with materials in our economy being fundamentally broken. While there are some things we need to do immediately, we also need to start building a world-class recycling system. The following actions will be important to facilitate this and help transition to a more circular economy. While work on most of these actions should begin straight away, they are likely to take time to put in place and to deliver results.

Revise the New Zealand Waste Strategy

There are a range of possible actions that the Government could take (some of which are set out in this document as priorities). It makes sense to set these within a clear strategic framework. The current New Zealand Waste Strategy 2010 (NZWS) sets no goals, targets, timetables, actions, or responsibilities. This means it does not provide a basis for action or investment in the sector. A review of the NZWS is therefore very timely.

In this context a clear and comprehensive waste strategy would:

Provide clarity to the sector on the Government's priorities and timeframes.

Provide a clearer strategic direction for investment of waste levy funds, in particular into optimisation of kerbside systems nationally, integrated recovery infrastructure and aligned communications.

Encourage more joint working and investment in regional planning and infrastructure.

Create greater certainty for the private sector to facilitate investment in key infrastructure and services.

Better Data

New Zealand has very poor data on the amount of material that is collected for recycling, what that material actually is, and what happens to it. We also have limited knowledge of how much of each type of material is put onto the market and the pathways that each material follows, including how much of each is recovered, how much is disposed of and how it is disposed of.[6]

While snapshot studies can give us some insight (as suggested for the short-term measures), there is a need to understand the flows of material on an ongoing basis, so we can track trends and measure the effect of policy and market changes.

Waste Disposal Levy

Key changes to the waste levy will make recycling and recovery alternatives more cost competitive and provide a source of funding for investment in resource recovery infrastructure.[7] Any direction of funds towards infrastructure should follow a clear investment strategy. The investment strategy should:

Include a focus on developing on-shore options for processing and adding value to materials.

Recognise regional infrastructure development needs (possibly through regional waste infrastructure plans, that give effect to the national strategy).

Product Stewardship and Design

At present, companies can place products on the market with little consideration of, or responsibility for, what happens to them once they have been used. This is at the root of the problem the recycling industry is currently facing.

A long-term solution must involve manufacturers and distributors having greater responsibility for products through their life cycle. This will help incentivise better design and material choices, ensure appropriate funding is in place to enable effective recycling and help New Zealand move towards a circular economy.

6 Ministry for the Environment. 2017. *Review of the Effectiveness of the Waste Disposal Levy 2017*. Wellington: Ministry for the Environment

7 Eunomia Research & Consulting (2017) *The New Zealand Waste Disposal Levy, Potential Impacts of Adjustments to the Current Levy Rate and Structure*

The different types of product stewardship programmes include advance disposal fees, deposit refund systems, licensing fees or material recovery notes. Schemes can also be voluntary or mandatory. Consideration should be given to the most appropriate types of scheme for each product or material type, as well as the designation of priority product status for the most problematic material types.

Where voluntary schemes or agreements are adopted, careful design of the scheme will be required otherwise they won't solve anything. For example, a voluntary agreement establishing targets for the recyclability of packaging (as has been mooted in other countries) should consider the following:

Focusing just on recycling can mean options higher up the waste hierarchy such as reduction or reuse are not properly incentivised.

Voluntary commitments are just that. Such commitments have been made in the past and not met.[8] Any future commitments need to have consequences for those who don't meet them, otherwise they are simply a theoretical exercise.

Recyclability claims need to be evidence-based and paired with standardised on-pack labelling to enable consumers to make informed decisions.

Recyclability targets need to be paired with requirements for manufacturers and brand owners to specify minimum recycled content in products (to create market pull through).

Where possible, on-pack labelling should clearly show levels of recycled content to help consumers make informed choices.

Ultimately, consideration may also need to be given to other measures such as actively restricting the use of products or materials for which there is no viable recovery pathway (such as some types of plastic).

New Zealand has appropriate provision within the Waste Minimisation Act for both voluntary and mandatory product stewardship schemes. No new legislation should be required to introduce these measures.

Good Practice Guidance

Councils around the country who offer kerbside recycling systems are faced with an array of choices as to what the best form of service is. Councils do not always have the technical knowledge to understand the longer-term impacts of their choices. The result is that often the lowest cost or most convenient services are the ones that get chosen. These do not always deliver the best long-term value. Identifying best practice and providing clear guidance and specifications for councils who are procuring kerbside systems would improve the quality of service and materials collected, increase standardisation (resulting in clearer education messages, and cheaper service delivery), reduce procurement and contract management costs, and reduce risks in the industry.

National Communications

Presently it is up to each council and/or recycling operator to develop and deliver their own communications to households. This results in a wide variation in the effectivenss, quality and content of messages.

There is an opportunity to greatly improve engagement of householders not only to recycle better but to encourage reuse and reduction of waste. A more holistic national approach to communications (aligned with best practice collections) will allow more consistent and effective messages to be delivered, reduce duplication of effort in developing resources and programmes, and mean that resource can be targeted at getting the messages into the community.

Positive Government Procurement

One of the most positive things that government (both local and central) could do is to stimulate demand for recycled materials through their own procurement. Local and central government are huge consumers. Specifying recycled or refurbished items would stimulate market demand, create new consumer norms, and help to create economies of scale for producers

8 For example: https://www.smh.com.au/environment/australian-packaging-industry-falling-short-of-recycling-goal-may-cut-target-20150702-gi39h0.html

using reclaimed resources. This would, in turn, help these producers to access wider markets. Procurement could cover for example:

- Use of sourced recycled paper for offices.
- Use of sourced recycled tissue for public conveniences.
- Street furniture made from New Zealand sourced recycled soft plastics.
- Roading using recycled materials (concrete, rubber, plastic).
- Reused and refurbished office furniture.
- Use of composts and soil amendments from New Zealand sourced reclaimed materials on parks and gardens.

Appropriate standards and guidelines would have to be developed for procurement of a range of different types of materials and items.

Conclusions

The collapse in international recycling markets has left the recycling sector in New Zealand in a vulnerable position. Without decisive action to address the issue, recyclable material could be sent to landfill, councils and communities will suffer financially, and operators could go out of business.

Action from the government is urgently needed. There are some things that need to happen immediately, including enabling access to funding, and facilitating national communications and data. There are also some things that will take longer, but that will help build a more robust system and deliver a more circular economy. These actions include revising the national waste strategy, changes to the waste disposal levy, product stewardship and design, building data systems, good practice guidance, ongoing communications and positive public procurement.

While there is a lot to do, everything that has been set out in this discussion paper can be achieved using existing funding sources and legislation. The sector is engaged and willing to work with the government to ensure these things happen.

Finally, this crisis also represents an opportunity: The opportunity to build a new system that can deliver better outcomes for our communities, our environment, and our economy.

Together we can reboot recycling and create a circular economy for Aotearoa.