

NZ Container Return Scheme – A Design to Maximise Aluminium Recycling

Government, through its Waste Minimisation Fund, has funded a working group to design a container return scheme (CRS, sometimes known as a container deposit scheme). The intent of these schemes is to incentivise consumers to recycle their used beverage containers by charging a deposit fee per each container. Consumers have their deposits refunded when they take their containers to a designated collection point. Return schemes are seen as a mechanism to help fight litter and to reduce volumes of material going to landfill. A container deposit scheme also diverts material away from commingled kerbside collection schemes.

There is a well-established network of metal recyclers in New Zealand which currently recycle 45% of all aluminium cans. These are exported as used beverage cans, or UBC. When a CRS results in an increased volume of these materials for recycling, this metal recycling network is readily able to process them.

AMR members are part of a professional organisation with governing rules, regulations, and standards. A map showing the AMR network is located on page 8 (Figure 5).

For some reason unknown to AMR, the metal recycling industry was not asked to contribute in any way to the 'high level' design of the CRS and so this document serves to outline how a CRS could be used by the industry to benefit not only higher quality and volumes of UBC recycling, but encourage the public to recycle other metal items as well.

ALUMINIUM CANS ARE CURRENTLY RECEIVED BY METAL RECYCLERS VIA TWO PATHWAYS

Pathway 1

- The public brings aluminium cans to AMR members
- Cans are purchased from the public on a per kilogram basis
- The recycler pays the public \$XX.XX per kilogram. The price is based on market rates for the commodity at the time of sale.
- The recycler processes the cans by removing contaminants (dirt, rubbish and beverage residues) and compressing the cans into a dense bale to ensure material meets international specifications for export quality. The 'contamination rate' is <1%. Bale density is high, so the bales do not require a binding of any type.
- The baled cans, classified as UBC, are loaded into containers and exported

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Figure 1: Photos showing aluminium cans ready for export -note the quality of bale at <1% contamination

Pathway 2

- Aluminium cans are collected by the waste industry through various methods (including commingled kerbside recycling).
- Waste collectors sort aluminium cans from other waste streams at their plant.
- Cans are compressed into a loose bale and bound with wire. The contamination rate is typically 3-5%, constituting beverage residues with remnant plastic waste and other rubbish. The contamination comes from the cans having been co-mingled with other materials during collection. The bales are loose as MRFs use multipurpose balers that are designed to compress to a low density for a range of materials. Unlike the balers used by metal recyclers, they are not specifically designed for pressing metals, so they are unable to achieve the same density.
- Bales are sold to a metal recycler, most are AMR members
- The metal recycler will reprocess the bale to reduce contaminants by breaking the bales apart, sorting and re-compressing the material into a denser bale. The contamination rate is reduced to approx. 1-2%, but it should be noted that the contamination rate is always higher than in Pathway 1. This is because it is difficult to remove contaminants from material that has already been compressed.
- The baled cans, classified as UBC for export, are loaded into containers and exported. Some AMR members export directly, others on-sell their material to a recycler who undertakes the export process.

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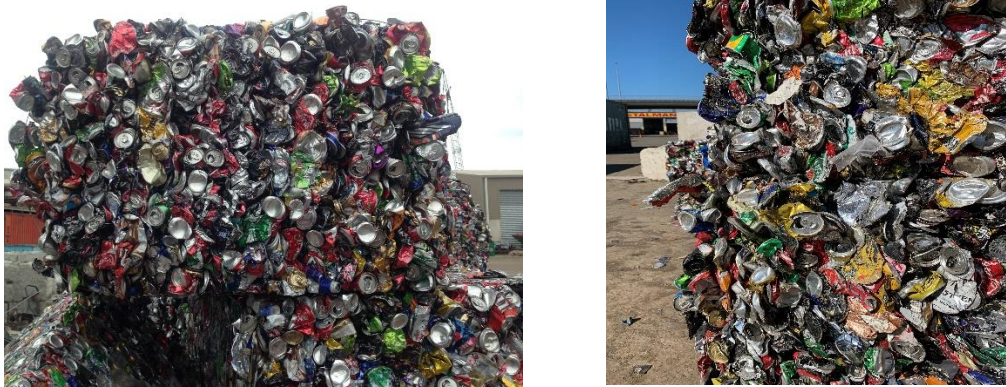


Figure 2: Photos of bales received from waste collectors. Note higher level of contamination and lower density.

Contamination rates are important because if an exporter exceeds the agreed contamination rate in the sale agreement, a claim will be made by the buyer. Claims can result in the total loss of profit for the exporter as a failure to meet sale terms are treated as a serious offense in the industry.

The internationally accepted contamination rate for UBCs is <1% and the majority of UBCs are sold at this rate. It is possible to sell at a higher contamination rate (for reduced pricing) although markets are limited. With the tightening of contamination rates occurring internationally, the ability to continue doing so is only expected to become increasingly difficult (if not impossible).

Proposal for CRS Design for Aluminium Cans

To ensure that the quality of the commodity is retained and NZ recyclers retain their reputation in the international marketplace, AMR proposes that the CRS for UBCs be developed using the established metal recycling network as scheme collection points. The existing pathways as described could be retained, with modifications made to allow for an increased payment for UBCs by metal recyclers to incorporate the CRS refund available.

Using the CRS refund -estimated to be \$0.10 per aluminium can - the metal recycler would equate this to a per kilogram weight and offer this, along with the market rate per kilogram for the commodity to the seller/consumer. Essentially, the metal recycler will use the CRS refund to value-add only.

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As the commodity value alone already drives a 45% recovery rate for aluminium cans into metal recyclers, increasing the value by 770% (i.e. from \$1.00/Kg to \$7.70/Kg) is expected to drive an increase in recycling volumes in the same way that a per unit value does.

It is also essential that metal recyclers continue to buy UBCs by weight because the commodity is traded in the international marketplace by weight and all exports are undertaken by weight only. The CRS rebate can easily be managed by weight as well as it can be by a single unit count.

At present metal recyclers buy and sell UBCs on a per kilogram basis. Clearly metal recyclers will need to invest in scales that weigh to the nearest gram to provide an accurate method of calculating the number of cans for the CRS. A single aluminium can weighs 15g. To be consistent with other CRS models internationally, AMR would recommend that metal recyclers purchase UBCs individually up to a count of 50 units, after which payment should be determined by weight, using scales that weigh to the nearest gram.

To reduce any risk of fraudulent claims, exporters would be required to submit exporting documentation to the CRS which AMR recommends would include:

1. Packing Slip
2. Certified Weight ticket
3. Copy of pre advisement to shipping company
This is a legal requirement for all container exports and requires the exporter to declare the weight of the shipment for the safe loading of the vessel
4. Copy of payment remittance from buyer detailing weight of commodity paid for
Commodity value can be omitted to preserve commercially sensitive information if this is required, but it is not anticipated that this will be necessary if the CRS has appropriate confidentially procedures in place

The system can easily be audited as those metal recyclers who are exporters are subjected to several international procedures when exporting materials, including the provision of loading photos, which will provide added security around the system. Exporters could also be asked to provide annual purchasing records for the weight of aluminium cans for auditing purposes.

This system would be open to audit by the Government to ensure against fraudulent claims, as would any other design of a CRS scheme. Metal recyclers and exporters are invested in maintaining product quality and trading relationships and will not risk long term damage to their trading ability for other monetary gain.

Additionally, in order to defraud the CRS, the buyer for the exporter would have to be complicit in the fraud, as the documents would show a false weight for the export. Otherwise, the exporter would be open to a claim as the weight of the material received would not match the exporting documentation. The only way to avoid this would be to involve the buyer in the fraudulent activity.

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A false weight on exporting documentation would also open the exporter up to being caught by port authorities who randomly weigh boxes when loading the ship. The exporter must complete a pre-advisement declaring the weight of the box for the safe loading of vessels. False/inaccurate submissions are a serious breach (as it jeopardises the safety of the vessel) so this would be a major risk for the exporter to take and would act as a further disincentive for fraud.

The incentive for metal recyclers to participate in this CRS is to drive further volumes through their operations and increase their turnover. As consumers get accustomed to selling to metal recycling facilities, they can be educated about all the other metal items they can sell for recycling as well.

Metal recyclers purchase materials from the consumer (seller) then process and onward sell to an exporter (or export themselves). The metal recycler who sells to another member or the exporter will be paid at the full value rate (CRS rebate plus commodity value) all along the chain as illustrated in the diagram below (Figure 4). The full value is sent down the chain from Exporter to Consumer (Seller) at the time of sale. This is how all scrap metal is purchased -metal recyclers pay out and then receive back when they sell. The investment will sit with the exporter at the top of the chain. The exporter will pay the full value and then sell the UBCs on export. At time of sale they receive the commodity value but will have to wait on the CRS rebate to be paid to them to receive the remainder of the value they have paid on purchase.

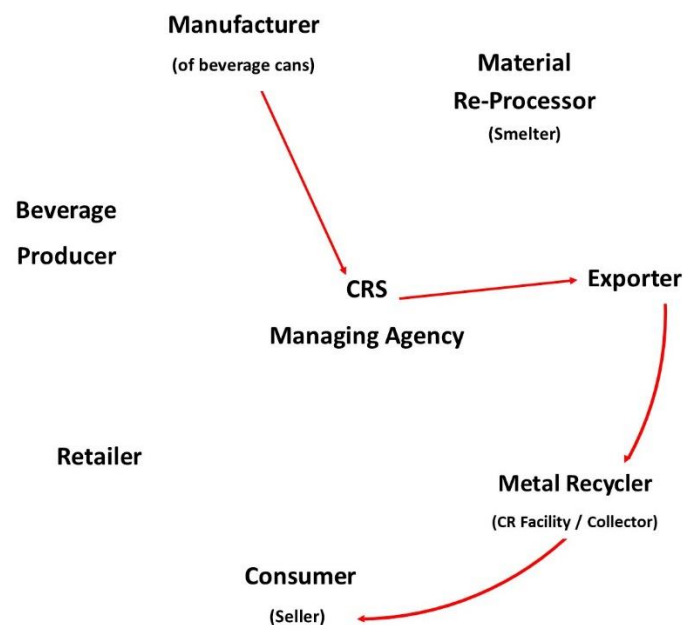


Figure 4: Flow of finances for the CRS rebate of \$0.10 per can / \$6.70/Kg

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The added benefits of structuring the CRS for aluminium cans in this way are:

1. Ability to maintain commodity quality
2. The CRS scheme does not have to invest in additional infrastructure (whereas for other options infrastructure is likely to be paid, in part, by the taxpayer or ratepayer)
3. Claims to the CRS are limited to exporters only
4. Simplified administration system – exporters already have a docket system, the CRS claim would be one added line item
5. Risk of loss and quality claims borne by exporters will be lower
6. MRFs, many of which are funded by ratepayers, remain on a level playing field with the option to sell to an exporter or become an exporter themselves
7. This system could be implemented very quickly as it does not require additional infrastructure.¹

The current system for recycling of cans in New Zealand is working now, but it can work better with a properly designed CRS that incentivises recycling of aluminium cans through an established and quality-controlled industry.

¹ In fact, if the Government is looking for a quick win, an aluminium beverage can deposit scheme may be able to be launched earlier than a wider scheme involving other beverage packaging types – which require more infrastructure and sorting capability

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Figure 5: Map depicting number of AMR member metal recycling facilities by region