



Introduction

When the Premier and Minister for Environment announced on 21 February at Coogee Beach the government's container deposit system (CDS) policy, they committed to a 'world's best system'. Observations around the world indicate the following key elements:

- Maximum impact on the volume of drink container and overall litter
- Convenient for consumers
- Cost effective with small or negligible net costs per container
- A focus on automation via reverse vending machine (RVM) and optical reading technology
- A sustainable business model not dependent on government funding
- Eliminate problematic materials from kerbside recycling and reduce the overall costs of kerbside
- Can work in harmony with other established recycling systems and preferably provide a net financial boost
- Increase recycling in the commercial and industrial waste stream
- Improve the quality of beverage container material recovered and reduce contamination of other MSW recycle to grow the recycling sector
- Offers major opportunities for the charity sector to raise funds
- Transparent information regarding performance and independent, non-profit governance to ensure community confidence and equity between stakeholders
- Clear targets by material type and strong penalties (by bottler) to ensure beverage industry performance

The following system design outline delivers on all these criteria.

CDS Threshold Questions:

1. Incentive

- *What type of incentive will be used to encourage people to return their containers to a collection point?*

A 10cent refundable deposit is the proven incentive which after a ramp up period leads to about 80% recovery. The amount also harmonises with South Australia and the Northern Territory. However unlike their systems, return of the cash is via a voucher redeemable at a linked retail outlet or EFT (thus improving fraud detection, eliminating cash flow impacts at redemption centres and avoiding security issues).

Over time, the amount will need to increase, but this is not seen as necessary over the first 15 years of operation (for example in SA the deposit increased once from 5 to 10 cents in 35 years).

Consumers can obtain their refund via a reverse vending machine (EFT or voucher presented to a linked retailer); physically donate the container or the deposit via a RVM - to a charity; or give the deposit to their council via kerbside.

2. Scope of Containers

- *Which containers will be covered by the scheme?*

There are number of key considerations in deciding the scope of containers:

- targeting littered containers: note that a larger volume container will be equivalent to several smaller containers under the litter volume metric
- removing glass from the comingled bin
- the need to harmonise with the SA scheme (up to 3L, with some exemptions) so as to minimise labelling complexity and cost to industry¹
- avoiding the significant compliance and financial problems created by limiting the size of containers to a level that can be easily evaded by changing the size of the container. For example if the limit was 1L or 1.5L and a bottler(s) introduced 1.1L or 1.55L, this would rob the scheme of significant revenues and threaten its viability; with containers of a larger volume reintroduced to the litter stream
- creation of an undesirable elasticity between products as bottlers are not subject to a level playing field
- ensure cost effectiveness by using technology (like RVMs) in 'standard' configurations

It is proposed that the scheme cover all containers above 100ml and below 3L

except:

- pure fruit juice and wine/sprits greater than 1L
- any plain milk and milk substitutes (condensed, evaporated, soy milk etc);
- Cordials, syrups and concentrated fruit juices.

This container scope attacks more of the most littered products by volume - beer, water, soft drinks. Additionally the scope (with an 83% container recovery rate) ensures about 44% reduction in the volume of all litter, including less caps, straws, broken pieces, etc from containers no longer littered.² (note: drink containers are the majority of litter volume).

We estimate our model covers about 4.4billion containers (at current annual consumption) in NSW (leaving substantial exclusions that are mostly consumed 'at home' in kerbside). 25% of the total kerbside bin would be covered by the proposed

¹ SA has up to 3L, and exempts all plain milk, pure fruit juice >1L, flavoured milk > 1L, sachets >250ml; wine casks and aseptic packs >1L, and all glass wine and spirits.

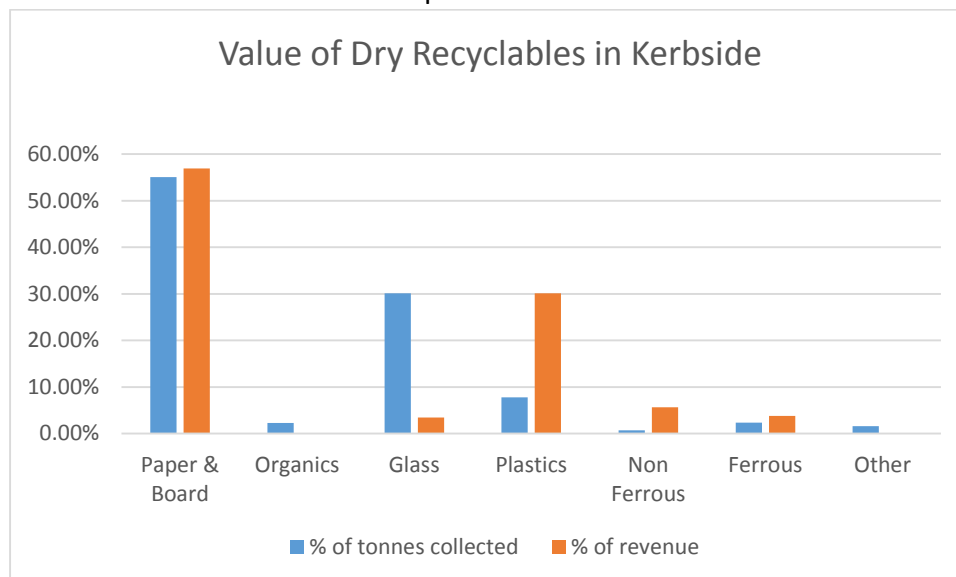
² Detailed analysis will be made available to EPA.

scope. We calculate that the net financial gain to kerbside taking account of lost material sales and remnant that attracts a deposit would be about \$18.5mpa (if handling fees are included this more than doubles). ² Other non-beverage containers also remain.

The reduction in tonnes collected by kerbside once the CDS is rolled out would be as follows:

MSW Material/Tonnage	Current Recovery, t	Recovery Post CDS, t	Proportion of CDS remnant that attracts a refund, t
Paper	438,803.99	427,666.25	2,026
Glass	194,058.53	73,124.54	34,313
Aluminium	4,344.59	954.26	520
Plastic	49,238.73	42,647.03	3,748
Steel	14,481.98	14,481.98	0
Other	231,717.17	231,717.17	0
Total	932,645.00	790,591.23	40,607

Around 80% of container glass (much of it lightweight) is removed from kerbside recycling – significantly reducing the need to address contamination of cardboard materials, allowing increased compaction rates and removing the least economic material from collection. In comparison the proposed scope leaves some higher valuable plastic material. The chart below outlines the proportion of materials recovered via kerbside and compares their relative income:



As in SA the government would have the right to reject new 'unrecyclable' containers.

3. Infrastructure

- *What type of collection infrastructure will be used to receive containers from the community? (RVMs? Collection depots? Something else?)*
- *Where will the collection points be located in metro, regional and remote areas?*

In order to deliver the most convenience to households the collection points are best located where they make regular trips so they can avoid extra transport costs. In metro areas this will be near supermarkets or other frequently visited retail outlets or transport nodes. The most efficient technology is reverse vending machines which automate redemption, separate and crush the materials ready for transport. They read barcodes, material type and shape which automates data collection for financial flow management and reporting. Modern RVMs can process a containers in 1 or 2 seconds. RVMs would have a limit on throughput per person to avoid long queues.

Of course some households will continue to use the kerbside collection system (and this delivers revenue to local government) - in South Australia about 12% of containers come through the kerbside system.³

It is likely that areas with expected major container returns will invest in reverse vending machines; while rural and remote areas may choose to adopt a manual system connected to a local shop, petrol station, charity or transport carrier.

There will also be bulk deliveries of containers to Hubs, emanating from RVMs, kerbside, litter clean-ups, events and the commercial sector. Bulk containers will be delivered to Hubs where they could be sorted with assembly line, automated technology also reading barcodes; or redeemed by weight. The location of this technology could be community drop-off centres, existing transfer centres or material recycling facilities.

4. Kerbside recycling

- *How are containers in the existing kerbside recycling system treated under the scheme?*

It is inevitable that containers consumed at home will be involved in the scheme as there is significant overlap between at-home and away-from-home consumption. Also kerbside collections of containers have a lower market value than CDS containers because they are contaminated. Additionally glass breaks in the comingled bin and infiltrates paper/cardboard making it either unusable or requiring expensive decontamination equipment at recycling facilities.

³ Statewide Recycling, CDS stakeholder sessions

Kerbside containers will still be able to be redeemed providing revenue to the council system. The last eight studies undertaken by Australian governments (2001-2014, with a wide scope of containers) have shown that the kerbside system receives a net financial benefit despite losing material to the CDS. As indicated by the kerbside contribution in the SA CDS, 'bin diving' is a minor problem. Another way that councils could be involved in the system is that they could establish RVM nodes in council car parks and integrate with existing municipal collection contracts.

5. Governance

- *Who coordinates/runs the scheme?*

The scheme is broadly coordinated and overseen by a single independent, non-profit group established by statute and comprised of a variety of stakeholders committed to transparency and integrity. This will provide community confidence in the scheme and avoid a conflict of interest between maximising redemption and industry retaining a large pool of unredeemed deposits. It will have a target for container recovery which can be translated into sectoral or bottler targets.

A private sector coordinator is appointed (by public tender process) to - manage the process of authorising bottler and collector industry participation in the scheme; obtaining the pre-paid deposits from bottlers for redemption by collection points; imposing a scheme cost recovery fee (reviewed by IPART); and regular reporting and monitoring for compliance (the EPA would undertake actual prosecutions).

- *What is the relationship between the "coordinator(s)" and those collecting from the community?*

The 'coordinator' authorises collection points requiring them to meet certain criteria such as cost effectiveness and consumer access.

- *What is the relationship between the "coordinator(s)" and beverage producers?*

The 'coordinator' registers the beverage and their labels as meeting the requirements of the scheme; and imposes a 'cost recovery' fee on the bottler to recover scheme costs (a state scheme cannot make a profit or receive deposits directly as under the Constitution it is deemed a tax). This fee is net of the sales of the material returned and the bottler will also use unredeemed deposits.

6. Funding

- *Who pays for the infrastructure at collection points (RVMs, bins, site rent, maintenance, cleaning, security, etc.)?*

The siting, cost and operational management of the infrastructure is covered by handling fees. Note, normally the RVM capital cost is not charged upfront but recovered over time from these fees. The revenue for these fees is covered by the clearing house (which can own the collected material) and the cost recovery including via access to unredeemed deposits; or the handling fee is partly covered by the Hub which is selling the material and retaining the revenue.

- *Who pays for transport, storage, handling, etc. to move materials from the collection point to recyclers?*

These are similarly covered by the handling fees.

7. Role of Government

- *What is the role of state government?*

The state government legislates the scheme including regulations; appoints the oversight body; decides the deposit level; and approves the criteria for beverages/containers covered by the CDS. The EPA uses its compliance powers to act on any breaches.

- *What is the role of local government?*

Local government would be a key member of the oversight body and individual councils could be involved in setting up and managing collection points.

Flow diagram below.

Jeff Angel

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BA Container Deposit Model — State Adaptation

KEY ■ FINANCES ■ MATERIAL ■ DATA

