



October 2015

**ASSOCIATION OF CONTAINER DEPOSIT SYSTEM OPERATORS (CDSO): Federal Senate Environment and Communications Committee Inquiry into; The Threat Of Marine Plastic Pollution In Australia.**

**INTRODUCTION TO CDSO**

CDSO represents providers, operators and managers of technologies that support deposit based beverage container recovery and recycling schemes globally. Details of CDSO members are outlined at the end of this submission.

CDSO has been established to assist governments and other stakeholders in designing and implementing best practice Container Deposit (CD) schemes, principally in NSW and QLD. This includes achieving the most cost efficient, consumer-friendly CD scheme possible that maximizes beneficial outcomes and opportunities for industry and local government.

Consumer convenience and collection technologies known as reverse vending machines (RVM's) and bulk and other sorting technologies for large volumes of containers at material recovery facilities (MRF's) and other venues offer multiple benefits. These include ease of return for consumers, cost efficient automation, immediate compaction and destruction of containers and automated data collection.

CDSO members have considerable global expertise in the provision and operation of redemption and sorting technologies as well as CD scheme operation, data collection and processing. This includes over 100,000 operational RVM's and bulk handling and sorting facilities in over 40 countries globally, as well as CD scheme management and clearing house functions in major deposit markets.

Further information about CDSO, its members and objectives are available in Appendix 1. CDSO welcomes the opportunity to submit to this inquiry.

**MARINE PLASTIC POLLUTION**

The issue of marine plastic pollution highlights the value of CD schemes. It is reported that over a million sea birds and upwards of 100,000 marine mammals die each year through ingesting plastics or net entanglement and over 95% of seabirds have some volume of plastic in their stomachs with impacts on digestion and mortality<sup>\*</sup>.

As outlined by the CSIRO, *'The more plastic a seabird encounters, the more it tends to eat, which means that one of the best predictors of the amount of plastic in a seabird's gut is the concentration of ocean plastic in the region where it lives. This finding points the way to a solution: **reducing the amount of plastic that goes into the ocean would directly reduce the amount that seabirds (and other wildlife) accidentally eat**'*<sup>†</sup>.

Some portion of this plastic material is generated from discarded plastic beverage containers. The Keep Australia Beautiful National Litter Index annually reports beverage containers dominating the 'dirty dozen' of littered items by volume<sup>‡</sup>.

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<sup>\*</sup> CSIRO, Hardesty, Wilcox 2014

<sup>†</sup> <https://theconversation.com/seabirds-are-eating-plastic-litter-in-our-oceans-but-not-only-where-you-d-expect-46740>

<sup>‡</sup> [http://kab.org.au/wp-content/uploads/2013/08/8837\\_KAB\\_National-Litter-Index\\_\\_2012-13\\_Summary\\_FINAL.pdf](http://kab.org.au/wp-content/uploads/2013/08/8837_KAB_National-Litter-Index__2012-13_Summary_FINAL.pdf)

## CONTAINER DEPOSIT SCHEMES

CD schemes can virtually eradicate beverage containers from the litter stream and therefore marine environment, thereby reducing the incidence and load of marine plastic pollution overall. For instance, at 25 Euro cents German and Dutch CD schemes achieve recycling rates of 98%, and South Australia's 10 cent deposit results in recovery rates of 80% and diversion from litter and landfill.

Nationally in Australia, the recovery rate for beverage containers is between 40-50%, including South Australian recovery<sup>§</sup>.

According to the South Australian government, SA has the lowest rate of container litter in Australia with the NT (also hosting a CD scheme) second lowest: *"South Australia has the lowest rate of beverage container litter of any jurisdiction in Australia. According to the most recent advice from KESAB (March 2013), the Keep Australia Beautiful National Litter Index shows that only 2.2% of litter in South Australia are beverage containers. The next jurisdiction is the Northern Territory with 4.1% being beverage containers and Western Australia having a 13.2% of beverage containers in its litter stream".\*\**

The recent CSIRO report into marine plastic pollution stated, "We also evaluated the effectiveness of incentive schemes, such as South Australia's container deposit scheme, in reducing waste lost into the environment. The scheme appears to be very successful, reducing the number of beverage containers, the dominant plastic item in the environment, by a factor of three."<sup>††</sup>

Importantly, CD schemes can be designed to be cost neutral for consumers through the retention of 'unredeemed' deposits (whereby consumers forego the deposit for various reasons) and the sale of recovered material that both serve to 'offset' the required handling or recovery fee. Of course, 100% of the deposit paid is refunded to the consumer that takes their used container to a RVM or other facility for recycling.

RVM's offer consumers a clean, efficient and convenient method of disposal of used beverage containers and redemption of their deposit (as well as additional scheme outcomes such as data collection and reporting). These facilities are used in most modern deposit markets; they allow a consumer to deposit their container, which is then crushed after recording the barcode, for collection and processing.

This clean and pre sorted material generates high value materials for reprocessing including bottle to bottle recycling, which is generally not available through alternate collection methods including kerbside recycling.

Modern material bulk sorting and counting equipment offers a similar function when utilized at large sorting and processing facilities such as transfer stations or material recovery facilities (MRF's).

All CD schemes globally are designed and operated with varying degrees of difference. The primary factors that differentiate these include: the deposit value; the range of containers covered; the method and location of container return; the use and type of targets and mechanisms to achieve scheme principles; the business model, financing and fee structure; administration, including financial clearing and control, and money, data and material flows; and integration with existing infrastructure.

CDSO is proposing the following draft CD scheme for Australian market conditions including protection of the existing kerbside recycling services, geography and demographics, consumer convenience and cost efficiency.

**We would urge the Federal government to support current state processes for the establishment in those jurisdictions of container deposit schemes.**

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<sup>§</sup> Boomerang Alliance briefing June 2015

<sup>\*\*</sup> [http://www.epa.sa.gov.au/environmental\\_info/container\\_deposit/faqs](http://www.epa.sa.gov.au/environmental_info/container_deposit/faqs)

<sup>††</sup> Understanding the effects of marine debris on wildlife, Hardesty, Wilcox, Lawson, Landsell, van der Velde, CSIRO, August 2014

## Proposed CD scheme for NSW and QLD

The following features would define a best practice scheme for Australia.

1. CD scheme, infrastructure and operation funded by private sector rather than governments; maximizing the use of existing collection and processing infrastructure (such as Material Recovery Facilities and residential kerbside collection), and employing reverse logistics and backfilling wherever possible.
2. Deposit value of at least 10 cents per container, 100% redeemable at the point of container return. Best practice would also involve automatic, periodic adjustments of the deposit value for inflation.
3. Coverage of all container material types from 100ml to 3 litres including all major beverage categories of wine, spirits, beer, flavored milks, water, juices, soft and sports drinks<sup>††</sup>.
4. Targets for recovery with implications (e.g. penalties) for non-achievement to ensure pro-active participation of all stakeholders in scheme success and avoid profiteering. This is particularly important in a state-based scheme where it is likely that constitutional matters will require the unredeemed deposits to be retained by beverage producers and importers.
5. Collective stakeholder scheme management via a single not-for-profit coordinating body aka the “Central Organisation” (rather than multiple, brand owner agencies as found in SA and NT).
6. Use of automated barcode reading technology - reverse vending machines (RVMs) or bulk barcode readers - for redemptions throughout the system to provide financial control and ensure system integrity (with exemption provided only for residual kerbside material under tight control).
7. Financed through an administration fee on beverage producers and importers that covers costs of collection, transport and processing, net of the sale of post consumption materials, and offset by producers’ retention of unredeemed deposits.
8. The number of container sort categories (known as ‘splits’) set so as to reduce system-wide costs while preserving maximum material value – e.g. up to maximum 5 splits (PET, HDPE, cans, liquid paperboard and glass) as the default, plus a maximum additional 2 splits (for total of 3 colours of glass) where glass will be reprocessed into containers but no existing automated cullet sorting infrastructure is available.
9. Container recovery and deposit redemption within proximity to large grocery stores / supermarkets serviced by RVMs (e.g. a requirement for stores over 800sqm in metropolitan areas, and over 300sqm in regional and rural areas, to provide return facilities within 100m of the store entrance and to redeem RVM vouchers<sup>§§</sup>); and additional drop off points (likely manual facilities, e.g. at community stores, petrol stations or transfer stations) in small rural and remote regions<sup>\*\*\*</sup>
10. Use of “Coordination Points” to a) aggregate and bale material collected from RVMs for sale to reprocessors, and b) collect, scan (via barcode), sort and bale any material not collected via RVMs – including pick-ups from the C&I sector (incl. hospitality venues) and any manual collection points.
11. Coordination Points and any additional public RVM locations (beyond those legislated at retailers) approved by Central Organisation against transparent criteria. Criteria to include giving preference to existing infrastructure such as MRFs and community recycling centres
12. Large venues (such as sports venues, hospitals, hospitality sector etc) contract collection services to Coordination Points or independent collectors (that would receive part of the handling fee or deposit value) for bulk redemption and scanning at Coordination Points.
13. Remnant deposit bearing material in kerbside would attract the deposit value and serve to offset collection and processing costs for local councils.
14. MRFs to have exemption from barcode scanning to allow redemption of the deposit-bearing containers by weight. Collected material can be transported directly to end markets, under suitable controls agreed by the Central Organisation.
15. Appropriate Government legislative framework for the scheme (covering items such as retailer involvement, recovery targets, handling fees, etc ) and eventual oversight of the Central Organisation.

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<sup>††</sup> A possible exclusion would be plain milk due to its high level of at-home consumption

<sup>§§</sup> Retailers would be paid a per unit fee by the Central Organisation as a contribution to RVM space and power; additional retail facilities may also opt-in and seek to establish collection facilities to encourage foot-traffic subject to the approval of the Central Organisation.

<sup>\*\*\*</sup> Note that large RVM facilities are likely to be applicable in communities of around 3000 people and above; while smaller individual RVMs can be applicable in communities of just a few hundred.

16. Central Organisation to certify redemption technology (RVMs and bulk sorting equipment); approve RVM, Coordination Point and other redemption locations; set unit handling fees (ideally and most efficiently in inverse proportionality to collection volumes); to refund operational stakeholders and invoice beverage producers and importers for cost recovery; to administer deposit bearing container database and provide to operational stakeholders etc. It is recommended that operational (but not oversight) aspects of the Central Organisation functions are tendered out to the private sector.

#### Day-to-Day operation of a CD scheme

- A retailer buys a drink from a producer that includes the value of the deposit (10 cents)
- A consumer buys this drink from the retailer that again includes the 10 cent deposit
  - This exchange renders the deposit cost neutral to the retailer
- The consumer disposes of their used container through a RVM (or a manual redemption point) and receives their 10 cent deposit in return, in the form of a voucher for the total deposit value of all containers returned. This voucher is redeemable at participating retail outlets as a discount on groceries or in cash.
- The RVM, having scanned the barcode of the container, compacts the container for transport to a Coordination Point for baling, reprocessing or export
  - The RVM relays information relating to the container, including its size, material, brand owner etc to the Central Organisation allowing this agency to invoice the drink producer for the deposit and the administration fee.
  - The administration fee covers the net costs of the system (RVM and Coordination Point handling or processing fees, retailer unit fees, transport etc. less the sales value of the post-consumer material).
  - Producers are only invoiced for the deposits redeemed by consumers (or kerbside operators) allowing them to retain the 'unredeemed' deposits. This serves to offset administration fee charges.
- Participating retailers, that accept deposit vouchers from RVMs or otherwise redeem a deposit to a consumer, are reimbursed the deposit value by the Central Organisation. Retailers are also paid a small fee per unit as part compensation for the space required for RVMs.
- The Central Organisation then pays the RVM operator (either the retailer or a third party) a handling fee.
- The Central Organisation also pays the Coordination Point a processing fee for the aggregation / baling of containers redeemed via RVMs, and a handling fee, processing fee and deposit refund for containers that have come through other channels and therefore require scanning, counting, sorting and processing.<sup>+++</sup>
- Finally, the Central Organisation pays MRFs the deposit value on deposit-bearing containers in the kerbside stream according to an agreed weight-based formula (as currently implemented in SA and NT)

**A CD scheme in Australia would effectively eradicate beverage container litter and plastics entering the marine environment. We would be pleased to provide further details if this would be of use to the Committee.**

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<sup>+++</sup> Coordination points will use bulk scanning, counting and sorting technology, which like RVMs, document the details of the container for reporting to the Central Organisation.

## Appendices 1 – CDSO Purpose and Members

Our members including the worlds leading reverse vending machine (RVM) manufacturers, suppliers and operators; post collection material sorting technology operators and providers; and CD scheme managers and operators more broadly.

CDSO constitution outlines the association's purpose and objectives including:

- Advocate for the adoption, design and implementation of the most effective, efficient and consumer-friendly CDS, including convenient redemption options for consumers at regular shopping destinations.
- Advocate for efficient CDS with the goal of achieving the highest practicable return rates of containers, including all material types and the widest practicable range of container sizes, with low net systems costs.
- Deliver a strong advocacy position into processes of consultation established by States planning the introduction of a CDS.
- Engage in policy, regulatory, public, media and operational discussions and consultations associated with the adoption, design and implementation of container deposit and recycling schemes, including working with supportive stakeholders.
- Act as a representative and advocacy body for CD operators using modern automated technology aligned with the above objects and purposes.

The following provides an overview of CDSO member companies and a Bio of the executive officer.

### MEMBER PROFILES

**REMONDIS** ([www.remondis.com](http://www.remondis.com)) – one of the world's largest environmental service companies with a turnover of € 6 billion (approx. AUD 7.7 billion), it is the leading player in Germany and is also among the top five Australian waste disposal and recycling companies, represented by its subsidiary REMONDIS Australia (which includes former Thiess Waste Management).

**RHENUS LOGISTICS** ([www.rhenus.com](http://www.rhenus.com)) – a global logistics company, Rhenus successfully services and manages the extensive container deposit system in Germany as a "System Coordinator". Rhenus has a turnover of € 3.5 billion (approx. AUD 4.2 billion). Remondis and Rhenus are sister companies and form part of the Rethmann Group.

**Envirobank Recycling** ([www.envirobank.com.au](http://www.envirobank.com.au)) – the Australian distributor of Envipco, a major international reverse vending and sorting technology provider with annual sales of USD 68 million (approx. AUD 85 million) with a strong presence in North America, Envirobank Recycling has a network of RVMs around Australia and also operates as a "Coordinator" in the NT's container deposit system.

**TOMRA** ([www.tomra.com](http://www.tomra.com)) – a global leader in recycling and resource efficiency technology covering areas such as container recycling, food sorting and mining, with annual sales of € 600 million (approx. AUD 860 million). TOMRA are the inventor of and market leader in reverse vending technology with over 70,000 machines installed around the world, collecting approx. 35 billion containers every year. TOMRA also operate collection centres and act as the central system coordinator in a number of deposit markets.

**Revive Recycling** ([www.revive-recycling.com.au](http://www.revive-recycling.com.au)) - TOMRA's partner and distributor in Australia & NZ, Revive was the first to bring RVMs to Australia, and has been operating RVMs in SA and NT, including the highest volume installation in Australia. Revive has modelled a variety of deposit systems for application in Australia and has advised many state governments on CDS operations and design.

**Anker Andersen A/S** ([www.anker-andersen.com](http://www.anker-andersen.com)) – established in 1945 and today a global supplier and market leader within design, development and manufacturing of innovative industrial high-speed counting and sorting machines for handling of used beverage containers (PET, glass, metal) in redemption centers and pure counting centers.