TOWARDS A ZERO WASTE SOCIETY:
A VISION FOR A NATIONAL EPR APPROACH

The Boomerang Alliance proposes that State/Territory jurisdictions pursue a national approach to broad based Extended Producer Responsibility (EPR) schemes as a *concurrent* process to the National Packaging Covenant. The initial focus of this approach would be packaging in addition to developing complementing infrastructure systems for a range of end-of-life products.

This précis seeks to lay out a practical, realistic approach that will deliver community expectations on waste – a Newspoll Survey commissioned by the Boomerang Alliance showed 91% of the adult population believes government intervention on packaging waste or litter is required. It is not our intention to advocate a final system; rather to use this call for a national EPR approach as a catalyst to bring together a stakeholder group that will articulate how systems could be developed and work.

We also propose the development of a truly independent exercise to model different schemes, price points, and expected recovery rates to comprehensively model the best system to take Australia forward. The Boomerang Alliance calls on enlightened business and outcome orientated regulators to join us in the process.

Our vision for a national EPR approach starts with packaging.

Why packaging rather than tyres, construction waste, or toxic materials? The answer is simple - packaging is one of our most persistent and regular major waste sources. It may represent a small proportion of the overall waste stream on a weight bass, but NOTHING is so persistent in its confrontation with the entire society. To this end packaging represents the ideal point to develop the infrastructure and social ecology necessary to drive towards a zero waste society – Packaging is everywhere in manufacturing, retail, pubs & clubs, city units and country farms. Our most established icon of environmental contribution the kerbside recycling system, has the potential to recover the 50% of packaging consumed in the home (provided recyclability is assured by the necessary rationalisation - over say a 5-10 year period - of materials selected to form packaging products). However, kerbside recycling can never deal with the 50% of packaging consumed away-from-home.

The growing away-from-home sector of packaging consumption requires drastic action. Secondary Infrastructure around retail and recreational venues needs to be developed. The Beverage Industry Environment Council's Public Place and Major Event Recycling programs are a start, but BIEC would be the first to admit that these programs cannot hope to capture even half of the nearly 5 billion bottles and cans that are consumed away-from-home. We need to build

centralised collection centres in most of our urban communities. Collection Centres that are supported by convenience drop off points outside of shopping centres and recreational venues. Until this major area of infrastructure reform is addressed, any form of public place recycling initiatives can only ever be tokenistic in nature.

Concurrent to the National Packaging Covenant

The proposed national EPR initiative would be developed as a concurrent process to the National Packaging Covenant. The modelling and development of parallel mandatory EPR schemes would operate initially as a regulatory safety net and send a strong signal to industry of government's willingness to act if desired outcomes are not delivered.

This gives industry the flexibility and incentive to develop creative initiatives that achieve "closed loop" outcomes from their activities. The outcomes required are achieving high overarching targets for waste reduction and resource recovery that would be expected from a regulatory "command and control" approach.

Where voluntary approaches fail, the regulatory mechanisms of the EPR schemes would come into effect automatically through the development of further National Environment Protection Mechanisms.

Getting Started - The first step is twofold:

1. 1. A container deposit scheme, more like the Californian System than the Container Deposit Legislation (CDL) model in place in South Australia. This is a critical first step that develops the necessary ecological values in consumer's mind. In this way the beverage industry is playing a part much like the role of the newspaper industry in stimulating the change required to establish the kerbside recycling system. CDL is a simple and effective system - who doesn't fondly remember handing in their bottles and cans at the corner shop. The establishment of a CDL scheme will thus enhance community and political capital, in addition to natural capital.
2. 2. A broader based Advance Disposal Fee across the packaging industry based on the overall volume of materials, waste disposal and litter impacts, and the level of recycled content contained in the package. The purpose of the ADF is to address both packaging design and post collection recycling in addition to contributing toward meeting the costs of end-of-life recycling and disposal. Rewards will be given to those companies that incorporate high percentages of recycled content into their packaging in the form of a rebate. While those companies producing packaging that is unable to be recycled will be penalised by bearing the full burden of the ADF.

The Container Deposit Component

. • The Alliance advocates a slightly different model to the South Australian scheme, but also recognises that in terms of effective recovery rates it is a world class scheme. We favour a model loosely based on the Californian system. Some of the features of a scheme include:
. • Packaging companies charge a deposit of 5¢ on every beverage container they sell. This is then deposited into a government administered fund, with the price passing onto the consumer through the supply chain.
. • No direct administration or handling fees. Administration and handling costs

would be funded through unredeemed deposits and the ADF.

. • No brand tracking. Producers pay deposits into a central fund until redeemed. This creates a simple administrative system and reduces the technological components in recovery facilities.

. • Unredeemed deposits are used by jurisdictions to assist to administer the scheme and contribute toward the viability of the kerbside recovery system – in California the CDL scheme provides around $30 million U.S. towards the kerbside recovery system. Similar experiences are being reported in South Australia as a result of their CDL scheme.

. • Central collection depots are established across the country. Initial discussions with experts in the resource recovery sector and venture capitalists have indicated that a self funded private enterprise could develop a series of these depots with no further financial assistance from the government or packaging industry other than the incomes form running the scheme.

. • No retail collection. Reverse Vending Machines would be established within 'zones of convenience' located near major retail operations and acting as a 'spoke' to deliver into the central 'hub' of a collection centre.

. • No "subsidies" for location of convenience recovery operations. International experience indicates that these operations could operate on a stand alone basis – locating machines in service stations, shopping centre parking areas, and convenience stores where the additional passing trade creates sufficient commercial opportunity to secure sites.

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An Advance Disposal Fee

The Advance Disposal Fee is more of a 'blunt' instrument and would be aimed at creating a levy to fund ultimate end-of-life disposal and resource recovery both within the municipal collection systems and litter. The ADF also forms an incentive for producers to drive recovery for the uptake of recycled material. Some features of the ADF scheme include:

. • A differential price paid per piece of packaging. The ADF will apply to every piece of packaging. The amount of the fee will be determined on the basis of mass, volume, likelihood of litter, ability to be recovered and recycled content. For example, an index similar to the direct and cumulative litter indicator from Nolan ITU would be developed to assess the mass and volume of each common packaging item, its likelihood to be littered, and ability to be recovered. Having developed the baseline impact of each item a multiplier effect would be introduced based on the level of recycled content. This would develop a matrix to apply differential pricing based on the packaging items true cost to society and rewarding initiatives to 'close the loop'.

. • Rebates for packaging with >50% recycled content. The ADF would be designed to provide rebates (sourced from producers with the lowest level of recycled content) to those producers with the highest level of recycled content. This encourages closed loop approaches and provides a stimulus to the resource recovery. For example, a 1 cent penalty per bottle for no recycled content and a 1 cent incentive for upwards of 50% recycled content would shift the entire equation.

. • Contribute to the cost of end-of-life management. The ADF would make contributions toward various schemes aimed at increasing the rate of used packaging recovery and

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reprocessing. Schemes likely to receive funding include kerbside recycling, administration and handling fees for CDL and special incentive payments for problematic materials.

- Influence selection of packaging materials. The ADF would work to ensure that only recyclable materials were used to manufacture packaging. While the Beverage Industry would input to funding the Container Deposit Component it is highly possible that future beverage containers achieving high levels of recovery rates (between 80—90%) would receive rebates paid by say the polystyrene cup manufacturers, whose end-of-life material cannot be recovered, creates problems in disposal, and is highly likely to be littered (unless it carried a deposit). This establishes the incentive to use materials likely to be recovered resulting in a simple equation for business - recover or phase out!

Underpinned by Landfill Bans

Ultimately any CDL or ADF approach needs to be underpinned by land fill bans aimed to be phased in over a 5-10 year period, and requiring manufacturers to either establish recovery systems or provide an incentive to operations like GRL's UR-3R facility to mine remnant waste. Landfill bans phased in this way ensures that recoverable materials can't be dumped and also sends a clear signal to remnant materials that cannot be recovered to change materials selection or face ever increasing costs associated with unsustainable materials usage. This also reinforces the view that the "pollution of land" is not acceptable as a by-product of our methods of production and consumption.

Using the Infrastructure created by this first step facilitates development of other schemes

Having established both the infrastructure (centralised collection depots) and the vital community participation (social ecology) for development of recovery beyond the kerbside system through a combined CDL and ADF mechanism, industry and regulators have the opportunity to establish simple cost effective recovery schemes for white goods, brown goods, electronics, computers, chemical and paint containers at marginal increases in funding and with minimum disruption to day to day commercial activities. The results of this expanded participation are likely to be as follows:

. • 80-90% recovery of products and packaging materials within 5 years covered by national EPR schemes
. • Infrastructure to make the Zero Waste Agenda achievable.
. • Connection with community values to ensure active participation vital for successful outcomes.

HOWEVER, without the basic day to day through put of packaging it is unlikely that a national series of collection depots acting as the reverse distribution recovery system to complement the kerbside recycling service will be able to be developed. By not including used packaging under and EPR scheme, other associated systems will be ad hoc and opportunistic rather than by a comprehensive strategy.

If we are going to commit to another term of The NPC we need a parallel process to ensure that

the entire consumer and municipal push towards Zero Waste isn’t stalled.

CONTAINER DEPOSIT LEGISLATION

History and Background

Container deposits are the invention of industry, not government. They were the essential adjunct to the heavy, older refillable beverage packaging technology. For the first three-quarters of the 20th century beverage manufacturers offered a voluntary deposit on their containers to recover them and therefore increase the efficiency of their working capital. Some refillable milk bottles were reported to make more than 200 trips while refillable soft drink containers even in the late 1980s were required to make a maximum average of five trips per container to recover the cost of the investment in the heavy glass bottle.

Before moving on to container deposit *legislation*, it is worth noting that the demise of refillable containers was driven by consumers, not industry. The evolution of lighter packaging formats – first thinner glass then plastics and other formats – eroded the market share of the refillable containers. Declining market share translated into fewer returns, fewer trips and a higher cost per container. This demise was accelerated with the phase out of some key supporting systems and cultural behaviour. The phase-out of home delivered drinks and milk only accelerated the demise of refillable containers and therefore of voluntary deposits.

Container Deposit Legislation (CDL) was introduced into South Australia in the mid-1970s as an anti-litter mechanism, not a recycling system. It was designed to reduce the hazard of beverage containers in public places and reduce the visual disamenity of these containers being left in public places. It was a novel regulatory tool. At the time there was no other system of recovery – CDL pre-dated any sort of kerbside recycling system in Australia by a decade, although there was ad-hoc scout and other charity collection of bottles, newspapers and other items.

When CDL was introduced into South Australia, there were still voluntary deposits on most soft drink beverage containers. However there was a much lower value applied to beer bottles and no deposits on wine bottles. Aluminium cans were increasing in market share at this time. By the 1970s consumer trends were on the move. Beverages were increasingly being consumed away from home, as cans expanded the single serve beverage market.

The mechanics of CDL

Container Deposit Legislation was introduced into South Australia in 1974. It was the second jurisdiction (after Michigan) to introduce this type of legislation. Since then CDL has been variously applied in selected European and US State administrations, although its expansion has almost halted since the mid 1990s.

In South Australia, CDL operates with a mandatory 5-cent deposit on smaller glass, PET and aluminium beverage containers. Liquid paperboard (milk), fruit juice containers and a range of other products were included in the system on 1 January 2003. Wine bottles continue to remain exempt on the curious grounds that they are generally consumed in the home and therefore do not contribute to the litter stream.

The new extension adds considerable complexity to the original CDL legislation introduced in 1974. Whereas the original Act applied to a relatively homogeneous type of aluminium cans and glass bottles and affected a more easily defined group of brand owners, the new regulations affect a much wider range of beverage container types. There are now more than 700 new SKUs required to be compliant and more than 500 companies responsible with this compliance. This will be discussed more fully in the next section.

The deposit can be recovered at a network of around 120 collection depots operating across the State. The depots receive around 3 cents per container handling fee from industry. The containers are separated by brand and returned to one of three super collectors operating under contract for each major brand. The process of separation is still relatively labour intensive because of the need to allocate deposit and handling fees to brand owners.

CDL schemes operate variously in other jurisdictions around the world. Variances include the size of the deposit, recovery technology (reverse vending machines, retail take back), handling fees and the range of containers and other packaging incorporated under the system.

Benefits of CDL

CDL delivers two direct benefits: lower levels of beverage container litter and higher levels of recycling for those containers attracting a deposit.

It is generally recognised that CDL reduces the levels of beverage container litter in South Australia compared to other States. The rate of this litter reduction is difficult to estimate exactly because of the difficulty of reliably comparing rates and types of litter in matching locations in each State.

According to Keep Australia Beautiful, cigarette butts make up 50 per cent of all litter in Australia. Other key items in the litter stream are take-away food containers, plastic bags, confectionery wrappers, straws and bottle and can tops. In NSW, beverage containers make up less than 10% of the litter stream (not including cigarette butts), and around 4% in South Australia, although they are larger and heavier than many other litter items. Littering occurs most frequently on highways (31%) followed by industrial areas (17%) and parks (16%).

Recovery rates for CDL items are reported to be higher in South Australia than in other States using kerbside recycling systems. Despite being in operation for more than 30 years, reporting of CDL recovery rates remains inexact. Until recently the South Australian EPA regularly reported a beverage container recovery rate of 95 per cent, even though this figure was not supported by any empirical data. Recovery rates are reported by Recyclers SA to be as high as 92 per cent for glass and aluminium containers, and up to 70 per cent for plastic containers. These numbers are almost certainly over-stated, although it is accepted that CDL does achieve overall higher recovery rates than kerbside recycling (around 57 per cent).

Reporting of the CDL system in SA is inflated for three reasons:

(1) Those handling primary collection data have a vested interest in over stating numbers to increase the size of the handling fee charged.

(2) The major brand owners are known to tolerate claims reporting excessively high recovery rates to avoid a net increase in the deposit applied.

(3) Given the popularity of CDL in SA (around 95% approval rates) and the subsequent difficultly of repealing such legislation, the State Government has opted to play up the success of the system.

Problems with CDL

The three key problems associated with CDL are the cost of operating a deposit system, the limited scope of the system as a tool to reduce domestic waste (if this is its primary objective) and its impact on overall recycling when operated alongside kerbside recycling systems.

Cost: CDL schemes are inherently expensive compared to kerbside or other less regulated and broader scale collection systems. This is because of the requirement under CDL to identify containers by exact number (in order to pay refunds and process handling fees), and therefore to separate containers not only by their physical properties but also by brand owner.

The Victorian EPA estimated the cost of introducing CDL on top of the existing kerbside scheme would be around $150 per household per annum, or around $1 billion per annum nationally. Similar research commissioned by the ACT Government found CDL would double or triple the cost of kerbside recycling.

The average cost per tonne of recovering containers via CDL is around $200 per tonne. Though kerbside it is around $60 per tonne. This in turn needs to be offset with the value of reduced litter from CDL as well as the higher recovery rate.

It is important to recognize that the cost of operating CDL will increase, not decrease, as the range of containers is widened under this regulation. Under the original legislation the range of container types was narrow – restricted mainly to specific types of glass bottles and aluminium cans. As a wider range of material types and container shapes are added to the system, more complexity is added both in collection and administration.

Scope of CDL: Beverage containers make up around 4 per cent of the domestic waste stream, although around 10 per cent of the litter stream (by number). While CDL is effective at reducing beverage container litter, it is still only one component of the litter stream. CDL doesn't eliminate litter; it just reduces one fraction of the litter stream. While it is easy to say every item of litter reduced should be encouraged, it is worth considering whether the cost of running CDL might be better spent on litter clean ups and preventative programs which impact on the entire litter stream.

Impact on kerbside: While CDL was introduced to reduce litter, kerbside recycling was introduced to divert packaging waste from the domestic waste stream. Both systems compete for some of the same materials from the waste stream. In this respect CDL acts as a rival collection scheme to kerbside recycling and acts to reduce its efficiency.

The cost of operating a kerbside recycling system is relatively fixed – around two-thirds of the cost is in setting up the collection and one third is allocated to handling and processing. The more material collected at kerbside, the cheaper it costs per tonne to collect and process. While CDL becomes more expensive to operate per tonne as the range of containers increases, kerbside gets cheaper.

Two independent Government funded studies conducted in South Australia in 1994 and 1998 found that the rates of kerbside recycling in South Australia were significantly lower than other States. A 1994 comparison of the performance of 82 kerbside recycling schemes operated by Councils in Adelaide, Perth, Melbourne and Sydney found that, holding all other measurable factors constant, the kerbside recycling schemes in South Australia recovered around 43% less material than similar schemes in other States.

In 1998 Recycle 2000, a State government funded authority responsible for the promotion and co-ordination of recycling systems in South Australia, commissioned a report comparing the total recycling rates for all Australian States including the recovery of CDL items. The study found that, even when CDL and kerbside were combined in South Australia, it was still the second-worst performing State for the recycling of non-organic domestic waste in Australia. Further, it identified that only 4% to 10% of CDL items were being collected through kerbside schemes.

If the primary policy objective is to reduce domestic waste through increasing diversion, then the effect of CDL is counter productive – it increases recovery rates for a small component of the domestic waste stream while reducing recovery rates and efficiency for a much larger proportion.

Recent events, debate and literature

The national adoption of CDL has become a populist campaign slogan for a number of environment groups who, typically, have sought to synthesise the complexity of waste management policy into one symbolic act. As with many other environmental campaigns, their position is heavily influenced by a moral perspective that believes industry should be held more "accountable" for its environmental impacts and therefore if CDL has a cost then this is borne by industry, making it not only acceptable, but desirable (ignoring that any cost will be passed on to consumers).

Their continued campaigning for CDL has fostered sporadic research, most notably a report commissioned by the NSW Government by Dr Stuart White from the Institute for Sustainable Futures in 2002. Dr White's research endorsed the expansion of CDL claiming it fulfilled the principle of Extended Producer Responsibility (EPR).

In response the beverage industry commissioned Access Economics to review Dr White' report. Its review found the ISF report was based on selective data, partial analysis, fuzzy logic and therefore its findings should not be relieved upon for policy development in this area. As mentioned, the Victorian and ACT governments also commissioned their own (contradictory) research in response to the ISF Report.

The possible application of CDL continues to be used by Ministers as a veiled threat to industry to improve its performance in relation to the sustainable management of packaging. At the same time, the 2003 Australian Food and Grocery Council Environment Report identified that by far the most significant environmental impact from packaged goods was the life cycle and consumption of the goods themselves, not the packaging. Focussing solely on reducing packaging waste is likely to worsen overall environmental performance through increased product damage and waste.

Conclusion

Container Deposit Legislation is 1970s vintage environmental policy designed to reduce specific types of beverage container litter. In this regard, it is effective policy. However the waste policy debate has and continues to evolve considerably beyond this specific objective. Waste policy now includes litter reduction, fast and constant evolution of new packaging formats, changing consumer behaviour and preferences and increasing relevance of all these issues to more serious environmental impacts like climate change and water management.

Trying to justify CDL as a viable and effective solution to many of these policy challenges requires increasingly suspect logic and reasoning. Most advocates of CDL systems (both NGO and Governments) are consistent in their moral vindication resulting in partial logic and careful manoeuvring around the myriad positive and negative impacts such a system has across the entire supply chain. Disappointingly, most research commissioned on the subject has tended to reinforce this partial perspective rather than expose it. There is still little research done on how deposits as a specific policy tool might make a positive contribution in an overall strategy to reduce waste and inefficiency and reduce net environmental impacts across the entire supply chain of goods and services.

Boomerang Alliance response to Packaging Council of Australia inaccuracies on Container Deposit Legislation (CDL) December 2005

Background

The Packaging Council of Australia (PCA), in response to the recent and welcome announcement from Western Australia of that states intention to introduce CDL, has again sought to discredit this market based instrument. We note with interest that the document is unauthored, and no-one accepts responsibility for the statements made within it. In fact the PCA web site describes this as a paper submitted to their Board of Directors rather than a document they endorse or agree with. The following paper seeks to correct inaccuracies in the PCA document.

Changing Consumer Trends

The PCA cites previous changing consumer trends (i.e. the move away from refillable containers) as a reason why deposits are no longer justified, though notes the now dominant consumer trend of away-from-consumption accounting for over 50% of consumption. While kerbside collection has achieved great results for at home consumption it can never deal with this new situation – i.e. deposits provide the incentive to retain or pick up containers for recycling, and the finance for infrastructure to conveniently recycle them.

CDL's "expansion has almost halted since the mid 1990s"

This is incorrect, as evidenced by the following table. In fact Market Based Instruments (MBI's) such as deposits are expanding to deal with the growing waste problem – for mobile phones, computers, batteries etc. While many deposit systems were introduced to combat litter, others focused on resource recovery and recycling.

Year implemented	Country/State
2005	Hawaii
2005	Estonia
2004	Germany
2002	Denmark
2001	Israel
1999	Norway
1997	Newfoundland
1996	Finland
1996	Nova Scotia
1992	New Brunswick
1987	California
1984	Quebec
1983	Massachusetts
1983	New York State

1983	Delaware
1982	Sweden
1980	Connecticut

Application of South Australia's "original CDL legislation"

The paper incorrectly states that the legislation in South Australia up until January 2003 "applied to a relatively homogenous type of aluminium cans and glass bottles". In fact it applied also to the vast majority of PET bottles, and several steel containers. It now covers these materials as well as other plastics (mainly HDPE) and Liquid Paperboard containers.

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Litter Benefits of CDL

The paper unfortunately misrepresents the litter benefits of CDL. By counting items by number, not by volume, visual impact or weight, industry equates tiny items such as a cigarette butt or a straw with large items such as a 4 litre container. For example in NSW beverage containers make up 13.4% of the litter stream by number, but are estimated at 31.8% by volume.

Just 9.6% of the rubbish collected in SA on Clean Up Australia Day 2004[1] was beverage containers compared to the national average of 21.7% with NSW the highest at 28.4%. This level of litter reduction has an enormous economic benefit; not least in reducing the cost of local government litter collection and community clean ups, estimated in the hundreds of millions of dollars.

Recycling Benefits of CDL

The PCA paper questions the recovery rates reported in South Australia despite the fact that the data released by the South Australian EPA comes directly from the brand owners (via their Super Collectors), which report an average recovery rate of around 80% (widely assumed to be an under reporting).

The paper then goes on to incorrectly claim that kerbside recycling achieves recovery rates of around 57%. -First: this figure includes C&I (commercial & industrial) recovery, which amounts to almost 42%[2] of total consumption. The figure for kerbside is just over 15%.

-Second: the reason that C&I recovery is high is that it includes paper / cardboard packaging (over 70% of the total recovery). If we exclude paper / cardboard and look at recovery of all container materials (aluminium, glass, steel, plastics), on the basis of a like for like comparison with SA's CDL, we find that kerbside recovery is 17%, and total recovery (including C&I) is 32%. (Note that if non-containers are removed from these figures then the rates for containers only are estimated to

rise
slightly but even so total recovery would remain below 40%). -Finally these figures are national, and so even these rates are boosted by the
inclusion of South Australian figures.

Comparing SA's approx. 80% recovery versus a total recovery rate (kerbside plus C&I) in other states of <40%, demonstrates just why deposits are so desperately needed.

Cost of CDL

The paper incorrectly states that *"CDL schemes are inherently expensive compared to kerbside or other less regulated and broader scale collection systems"*.

Well designed deposit systems can operate at a surplus[3] as shown by systems in Canada and the US (see Beck et al 2002, Understanding Beverage Container Recycling, "the BEAR report"; CM Consulting 2003, Who Pays What – An Analysis of Beverage Container Recovery and Costs in Canada). Other deposit systems can be more expensive, depending on their design and operation – e.g. none sorting by brand, manual rather then automated collection and return to depot rather then retail, etc. Though even the South

[1] Clean Up Australia Day Rubbish Report 2004 [2] These figures are based on National Covenant Gap Analysis, 2005. [3] After the inclusion of funds from unredeemed deposits. Even without the inclusion of these, well designed systems such as California and / or automated systems are lower cost than kerbside (Beck et al 2002, Understanding Beverage Container Recycling :" the BEAR report")

Australian system presently operated by industry, which display some design inefficiencies net costs (after material sale and unredeemed deposits) average approx. 1 cent per container (or approx $120 / tonne).

While the net cost of kerbside recycling in Australia is $294 million annually, or roughly $300 per tonne. Moreover it is acknowledged that paper / cardboard and newsprint have a lower collection cost per tonne than containers (due to the low relative density of containers collected at kerbside); however no published work in Australia has been done into separating out net costs of each component of the kerbside stream.

Nevertheless it is clear that the PCA's claims of $200/tonne for CDL are incorrect and their claimed $60/tonne for kerbside is extremely low when compared with overall kerbside net costs and is unsubstantiated for the container stream (as well as being markedly different from the only known study to separate out container costs, as shown below).

The PCA's paper also makes much of the study conducted for the Victorian EPA[4], which found that CDL would introduce significant additional costs to households. However this study has been largely discredited for a number of fundamental reasons, among them the following:

. • The study does not undertake a cost-benefit analysis but rather examines only costs and only for a very narrow set of assumptions around one particular deposit

system design

. • The design chosen is by far the most expensive type: return-to-retail, manual only handling. It is assumed that there is no automation and that collection will occur at the highest cost front area of stores. These space costs constitute roughly 70%[5] of total CDL system operational costs in this study and so very heavily influences overall outcomes (in practice, in Europe and the US, collection is most often performed in the back of stores necessitating consumer flow through the retail outlet or operated at depots such as car parks, petrol station forecourts and other locations).

. • Perhaps most damning of all is the failure to distinguish between actual costs and transfer payments, for instance in the treatment of unredeemed deposits. This was picked up in the peer review and results in costs roughly 4 times (400% of) those that would otherwise be reached.

The only known study that separates out the cost of container recycling from the overall kerbside mix, for comparison with deposit system costs is the multi-stakeholder BEAR report (Beck et al, 2002). This US study performed by industry consultants, and supported by brand owners such as Coca-Cola along with key members of the packaging and recycling industries analysed the main collection systems used in the US and compared their recovery rates and costs for recommendation on a future direction to reach high recovery targets. It found that in general deposit systems displayed lower net unit costs than kerbside systems, and that with the use of technology such as Reverse Vending Machines (RVMs) and/or updated design to eliminate the need for brand sorting net costs could be up to 68% less than kerbside, even without the inclusion of unredeemed deposits. With their inclusion, such systems will actually operate at a surplus.

A summary table of costs is reproduced below:

[4] EPA Victoria 2003, "Container Deposit Legislation – Financial Impacts" conducted by Nolan-ITU and reviewed by
Perchards.

[5] Marsden Jacob 2004, "Critique of 'Container Deposit Legislation – Financial Impacts'

Table ES-1
Comparison of Program Effectiveness and Cost (1999)

Recovery Program and Targeted States	Population in Covered States (millions)[4]	Effectiveness Measures Uniformly Accounting for Differences in Containers Accepted and Other Variables.		Alternative Cost Comparisons (cents/ unit recovered)[5]			Funding Responsibility
		Overall Recovery Rate[6]	Normalized Per-Capita Containers Recovered[7]	Gross Cost[8]	Net Cost (Including Material Sales Revenue) [9]	Net Cost less funds from Unredeemed Deposits[10]	
Deposit States[11]							
Traditional Deposit System (Manual)	47.7	43.1%	295	4.07	2.67	1.26	Consumers (unredeemed deposits), beverage distributors (handling fees) & retailers
Traditional Deposit System (RVM)		18.5%	126	2.53	1.13	(0.28)	
Weighted Average, 9 Traditional Deposit States		61.6%	422	3.61	2.21	0.80	
CA Redemption System	33.9	54.5%	373	1.62	0.55	(0.42)	Consumers (unredeemed deposits) & producers (processing fee)
Curbside [12]	81.6	9.5%	65	2.48	1.72	1.72	Local governments, tax payers, rate payers
Residential Drop-Off	81.6	1.6%	11	1.10	0.30	0.30	
Other (e.g., non-residential and buy-backs)	81.6	1.8%	13	Unknown	Unknown	Unknown	Varies
Subtotal, 10 Deposit States	**81.6**	**71.6%**	**490**	**2.69**	**1.53**	**0.53**	
Non-Deposit States							
Curbside	199.9	18.5%	127	2.48	1.72	1.72	Local governments, tax payers, rate payers
Residential Drop-Off	199.9	4.5%	31	1.10	0.30	0.30	
Other (e.g., non-residential and buy-backs)	199.9	4.8%	33	Unknown	Unknown	Unknown	Varies
Subtotal, Non-Deposit States	**199.9**	**27.9%**	**191**	**1.91**	**1.25**	**1.25**	
Total U.S.	**281.4**	**40.6%**	**277**	**2.32**	**1.39**	**0.88**	

Sources: MSRP Consulting Team based on numerous sources detailed in end notes #4 through 12.

Note that in contrast to PCA's claims, California, which has one of the lowest net costs, has one of the widest coverage of materials, demonstrating that a wide coverage is no impediment to cost effectiveness (in fact the opposite is likely true since the infrastructure remains largely the same for whatever coverage, and so system efficiencies increase with volume).

Kerbside is inherently expensive because all materials are collected together and are transported prior to compaction before then being sorted (as far as possible) from each other. Cross contamination from the commingled collection further increases costs and wastage (cf the dropping glass recycling rate, and the concerns of PNEB[6] and Norske Skog[7] –formerly Fletcher Challenge Paper – over glass contamination in recycled newsprint). Deposit systems on the other hand allow materials to be sorted and compacted at the point of collection, significantly reducing transport costs and contamination.

Finally deposit systems, if sensibly designed, will help reduce net kerbside costs – indeed CDL has been introduced precisely for this reason in some jurisdictions [British Columbia in Canada, for example, which had significant kerbside coverage, expanded their deposit system beyond soft drinks in 1998 due to a push by municipalities in order

to save kerbside costs]. The allocation of deposits to kerbside operators adds to revenues while

[6] E.g. PNEB 2005, "Newspaper Recycling Report 2004" http://www.pneb.com.au/press.html; PNEB 2005, Industry Waste Reduction Report, Year 4. [7] Herald Sun 22/3/05 "Paper goes to waste" quotes that up to 10% of the paper it bought was wasted due to contamination.

the reduction in the high-volume container component of kerbside collection reduces net costs. [e.g. White et al 2002; US Congressional Report 1993; Franklin 1991]

The real issue for the packaging and beverage industry is not so much the absolute costs but rather who bears any costs. In the case of kerbside it is local government and rate payers, in the case of CDL it is brand owners and consumers.

Impact on Kerbside

The PCA paper incorrectly claims that *"CDL acts as a rival collection scheme to kerbside recycling and acts to reduce its efficiency"*. Kerbside recycling entails a significant NET cost, i.e. the collection and sorting of materials far outweighs the material value. By reducing the volume of containers in kerbside, net costs are reduced not increased (e.g. White et al, which uses the Australian Waste Recycling and Cost Model [WRCM] – widely used in other cost-benefit studies into waste management including by BIEC and Nolan-ITU / SKM - for calculating kerbside costs). Moreover by allowing kerbside operators to claim the deposit, the value of each container is dramatically increased and a new revenue source created. CDL systems have been introduced for the main purpose of reducing kerbside costs, and there are countless examples of deposit systems working in parallel with kerbside (not least of all is SA itself).

The claim that kerbside costs are fixed is also extremely questionable since the main costs involved in kerbside recycling are not the capital costs, but the collection and sorting costs.

It is for reasons of kerbside cost reduction that the vast majority of local government support CDL.

Suggesting kerbside recycling rates were lower in SA is also incorrect. Kerbside handles containers and paper, and so by reducing containers (and costs) through the kerbside system, the overall kerbside recycling rate will obviously be lower than other states. However, overall recycling rates will be higher. This is shown in the Fig 3.6.3 in White et al 2002 (which is based on the RECYCLE 2000 report quoted in the PCA paper, amongst others) where only paper lags recycling rates in NSW (even prior to the 2001 expansion of SA's deposit system).

The lower paper recovery rates in SA via kerbside does not mean that CDL somehow inhibits it, rather it is a function of the levels of service provided, the history of council adoption of kerbside and market factors. This is supported by the rapid rise of paper recycling in SA in the last few years.

The general supportive relationship between CDL and kerbside is highlighted by a US Congressional report *"Bottle Bills and Curbside Recycling: Are They Compatible?"* It concluded not only that the two systems are compatible, but noted that *"curbside programs are more common in deposit States than in non-deposit States"* with the percentage of the population who has access to kerbside in deposit states nearly double that of non-deposit states. With kerbside now well established in Australia, there is no evidence that deposits will harm this; rather the opposite: it will help to financially underpin a new collection infrastructure and reduce existing costs on local government.

The claim that CDL *"reduces recovery rates and efficiency"* for a large proportion of the domestic stream is also incorrect. All non-paper recovery rates will dramatically increase. Paper recycling is entirely independent (the convenience of kerbside remains), and if anything, CDL will assist by removing the majority of glass, a major contaminant in the paper stream that is causing problems for paper recycling operations in Australia (cf PNEB, Norske Skog cited above) and can render compostible material (green waste), from GRL and Sita's new waste sorting technologies unusable.

BOOMERANG ALLIANCE

Environment group motives

Contrary to the paper's assertions waste management approaches (EPR) that involve manufacturers taking responsibility for their product's end-of-life use or disposal have become the norm in most developed countries and are growing rapidly. Environment group's stance on these, and CDL as an effective example, is not a moral one or an anti-industry platform, but is entirely practical, aimed at achieving the highest rates of recovery and recycling for all the commensurate benefits that flow from this result.

Study outcomes

By far the most comprehensive international study, and the only one with joint support of all parties (beverage and packaging industries plus recycling industry and NGOs) is the so-called "BEAR report" (Beck et al 2002). Although also conducted by well-known industry consultants, the broad frame of reference and involvement of all parties led the researchers to, what for them, were surprising conclusions (which they actually went back and re-checked). They found that deposit systems were both the most effective in reaching high levels of recovery and the most cost-effective on a per unit or per tonne basis).

Specifically the multi-stakeholder BEAR report reached the following conclusions:

- deposit systems have the highest recovery rates
- even traditional deposit systems are cost-effective, but cost-effectiveness can be markedly increased by the use of RVMs and by having a single coordinator to eliminate the need for brand sorting
- traditional deposit systems using RVMs and newer deposit systems designed without the need for brand sorting (such as California) both have significantly lower costs than kerbside (34% and 68% cheaper respectively) even before the inclusion of unredeemed deposits. With their inclusion these systems run at a net surplus.

. • Kerbside programs alone have limited possibilities for reaching high recovery rates, and new systems are required that target recovery from the range of locations where beverages are consumed

. • Financial incentives are needed to establish the long term sustainability of high recovery rates and strong markets

Negative impacts on lifecycle of packaging contents

The PCA paper states *"Focussing solely on reducing packaging waste is likely to worsen overall environmental performance through increased product damage and wastage."* This statement is nonsensical as CDL systems in and of themselves make no determination of product packaging design – this is determined in Australia through the National Packaging Covenant (NPC) Environmental Code of Practice for Packaging (ECOPP).

The Boomerang Alliance:
