BOOMERANG ALLIANCE

Submission to the Senate Standing Committee on Environment, Communications and the Arts

‘Management of Australia’s waste streams and the Drink Container Recycling Bill’

May 2008

The Boomerang Alliance:

• Australian Conservation Foundation • Arid Lands Environment Centre • CleanUp Australia •
• Conservation Council of South Australia • Conservation Council of Western Australia •
• Environment Centre of the Northern Territory • Environment Tasmania • Environment Victoria •
• Friends of the Earth • Greenpeace Australia Pacific • Local Government & Shires Association of NSW •
• NSW Nature Conservation Council • Queensland Conservation Council •
• Tasmanian Conservation Trust • Total Environment Centre •

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Attachments

1. Introduction

This submission outlines general information about waste and recycling in Australia and identifies many of the major points of intervention required to increase resource recovery in Australia. Waste management is in a dire state of crisis and at the federal and state level (with a few exceptions) the last decade has been marked by inaction from governments unwilling to take the necessary steps to resolve this crisis. As a result our national recycling rates are poor at just 35%[1] and the costs of iconic services like kerbside recycling have exploded at nearly double that of inflation, jeopardising their sustainability.

One of the primary reasons for inaction is based around the incorrect notion that the costs of improved waste management outweigh the benefits, most recently characterised in last year's report by the Productivity Commission (PC) "Waste Management" inquiry. In 2007, then Treasurer Peter Costello and Environment Ministers rejected its primary conclusions and endorsed the need to minimise waste and enhance resource recovery.

The PC approach characterises the flawed thinking propagated by individuals with little, if any, knowledge of or experience in waste management. Too little focus is given to the fact that the combined waste management and resource recovery industries in Australia are a major component of our economy with an estimated turnover of some $2.68billion p.a. with some 1,092 organisations employing over 14,300 people[2], nor is there any significant attention given to the economic opportunities presented from a vibrant and healthy resource recovery industry. Equally, when the economics of proposed waste initiatives they are rarely benchmarked against the existing approach. One obvious example is being investigated by this Senate Enquiry - Container Deposits (CD). Of course there is a cost associated with introducing a container deposit system, little else in our society comes for free so why should a recycling program? However in comparison to say kerbside recycling the cost per tonne of a CD system is comparatively low, the benefits are substantial.

This report is broken into a number of parts: Section 2 outlines the state of waste in Australia and the role of economic instruments in addressing same; Sections 3 & 4 discuss Extended Producer Responsibility; Sections 5-8 focus on Container Deposit Systems. Boomerang Alliance has made a second submission to the Senate Enquiry entitled "Container Deposits: The Common Sense Approach. Financial Analysis of Costs & Benefits of a National Container Deposit System" V2.1: May, 2008" where we have attempted to outline a draft system, model the financial flows and impacts and identify the ensuing benefits from same.

Boomerang Alliance has chosen to focus most of its attention in this submission on Container Deposit Systems as it is an important first step to developing the necessary collection and reprocessing infrastructure needed to tackle Australia's waste challenge, and frankly as it seems the only initiative that has been put on the table for the Standing Committee's consideration. We would challenge the Standing Committee to support Senator Fielding efforts to increase recycling In Australia rather than continue the distressing trend of increased rhetoric and studies and decreased action that has been the predominant characteristic of Australian waste politics over the past 10 years. There are few initiative's that enjoy such high level of public support and there is strong and tangible evidence that the public understand the costs and are prepared to accept them. Further local government who provide most of Australia's recycling, overwhelmingly support container deposits and believe it will support kerbside recycling.

This report demonstrates a guaranteed and financially viable approach to lift the recovery and recycling of beverage container waste to at least 80%, compared to the current 41%, through the implementation of a National Container Deposit System (CDS), Such a system has very significant collateral financial and environmental benefits, including improvement of the viability of kerbside and establishing a mosaic of collection hubs that could form the basis for receipt of other high priority wastes for recycling.

There is no evidence that the alternative approach proposed by industry and the current National Packaging Covenant (NPC), such as improved public space recycling supported by local government or ad hoc industry levies on materials, would lead to the same results. In fact after 8 years of the National Packaging Covenant there is no evidence that **it** has made any significant contribution to lifting Australian recycling rates at all. Note that while recycling rates may have increased, it was not due to NPC support or sustained funding and if the NPC disappeared next week – recycling would continue. Under the current NPC approach resource recovery will become more complex for recyclers, consumers and administrators; be much more expensive due to the cost of public space recycling facilities influenced by the number of extra bins and (council)

[1] Productivity Commission Inquiry into Waste Management 2006
[2] ABS Waste Management Services 2002-03

operational costs, and continue to place the burden of costs onto ratepayers rather than the more direct approach of charging consumers on the basis of usage.

Further the credibility of the National Packaging Covenant (NPC) is in tatters, on 3 separate occasions over a 3 month period it has been conclusively demonstrated that the National Packaging Covenant Council (NPCC) has been consistently exaggerating claims about recycling of glass (where New Zealand recovery was accidentally included), paper and cardboard (where office paper and newsprint was included) and plastics (where pre-industrial polymers were added into packaging recycling figures).

The overall level of packaging recycling performance falls far behind the national 2010 target of 65% set within the NPC, especially when containers are examined (primarily glass and plastic). Containers represent almost 30% of the packaging tonnes consumed in Australia and are the worst performing area, including glass where recovery is declining. They are a significant part of Australia's serious packaging waste problem, where we perform poorly compared to other countries.

Australian's are amongst the greatest consumers of packaging in the world, each consuming about 203 kgs of packaging annually; nett of resource recovery this represents a staggering 116kgs of packaging waste per capita landfilled annually, including over 740,000 tonnes or 8.4billion containers.

Modelling by Boomerang Alliance of a National 10¢ Container Deposit System indicates that such a system will more than double recycling rates from their current levels current and also indicates that the improved recovery rates of bottles and cans will produce substantial environmental benefits, including:

- An increase in container recovery rates from a current 41% to nearly 82%
- A 6% reduction in municipal waste to landfill – 631,008 tonnes per annum
- A 12-15%[3] reduction in the volume of litter
- 1.38million tonnes of Co2-e p.a. in Greenhouse Gas Reductions (equivalent of switching 197,000+ homes to 100% renewable energy)
- A saving of 8.1 gigalitres of drinking water p.a. (enough to supply 24,128 homes)
- Improved Air Quality by 610million gC2H4-e (like taking 141,000 cars off the road)
- Provision of over 250,000 Australian homes with recycling services for the first time
- The creation of at least 1,000 new jobs

Research by NewsPoll, for our work in WA showed over 94% of people supported CD; this is consistent with polling on the popularity of CDL in SA and with a national NewsPoll undertaken by Clean up Australia which found that 87% of the population supported the introduction of CD. Newspoll also conducted an analysis of people's willingness to pay for a container deposit system, with 89% of Western Australians willing to pay a 10¢ deposit on their beverages if they could receive a refund for returning their containers.

Our estimated total impact on our economy is actually a saving of some $3milion p.a. and increases to $84.9million p.a. if government returns operating surpluses to tax payers via rates or income tax. This represents an overall annual saving of some $11.52 per Australian Household.

This report also shows that Container Deposits are far cheaper and effective than an uncertain public space recycling scheme based on a variety of bins and an increased allocation of time and resources from local councils.

After exhaustive research of the different approaches and instruments used to manage packaging waste across the world it is clear that Container Deposits are the only sustainable mechanism we have found that can lift our container recycling performance and establish a recycling system that can lift packaging recovery to the NPC 2010 target of 65%.

It is clear that adopting a National 10¢ Container Deposit System is simple common sense. It is an effective mechanism for resource recovery; responsible citizens can avoid all costs by recycling their containers, and there is a big environmental benefit.

[3] Based on halving the current 29.38% of total litter volumes (11.95% of all litter items) –Data from KAB 2006 National litter Index

7. Container Waste

A global problem

In the context of today's sustainability challenge, beverage container waste is far more than just a litter issue. Most wealthy economies face both a physical crisis around landfill capacity and growing community demands for better environmental performance including zero waste, no litter and dramatic improvements in energy efficiency.

The following extract from an article commissioned by the Worldwatch Institute provides an insight into the scale of the problem, and the challenge to provide a solution:

> "In 2002, thirsty Americans consumed 189 billion sodas, juice drinks, and other beverages packaged in plastic or glass bottles and aluminium cans. That's over 650 containers per person per year — or almost two containers a day for every person living in the United States. Sadly, fewer than half of these bottles and cans were recycled; the majority were trashed — landfilled, burned, or littered along roads, beaches, parks, and other scenic places. This is a huge amount of wasted resources: a quarter of a million tons of aluminium metal, a million and a half tons of plastic bottles, and nearly 7 million tons of glass bottles — and just for one year in the United States! On a global scale, the quantity of wasted containers — and their contribution to the world's trash burden — is mounting steadily as sales of throwaway beverages outstrip recycling efforts."[38]

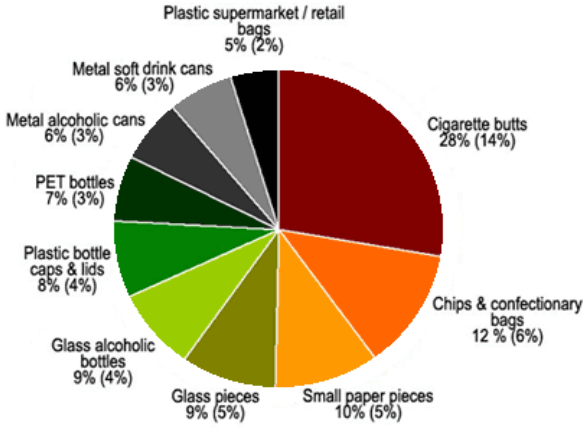
This year the authoritative annual 'State of the World Report' from the Worldwatch Institute focused on consumerism and the "consumer society", estimating that 1.7 billion of the world's 6.3 billion people, with hundreds of millions of Chinese and Indians in particular, are joining the traditional consumer society strongholds of North America, Western Europe and Japan. The report says that sales of even the most basic packaged beverage imaginable, bottled water have reached $US35 billion globally and are rising fast.

Of course, promoting and then meeting consumer demand for soft drinks, alcoholic beverages, juices, water and other products sold in containers is a huge and lucrative business. And, if done badly, it has huge and costly consequences for human health and the environment. Worldwatch's 2004 report says:

> "In 2002, people drank 185 million litres of carbonated soft drink, making it the third most popular commercial beverage in the world after tea and milk. The average bottling plant churns out more than 300,000 litres of soft drink each day and uses up to 1.5 million litres of water — enough to meet the minimum requirements of at least 20,000 people. In the United States, as annual soda consumption doubled to 185 litres per person between 1970 and 2001, milk consumption fell 30 percent. The Coca-Cola Company and PepsiCo, the two largest soft drink firms, are among the world's biggest advertisers, together spending $2.4 billion on advertisements in 2001."[39]

Australian Beverage Container Waste

Six of the Top Ten items collected during Clean Up Australia Day were materials directly related to beverage containers and bottle caps, with plastic and glass bottles, bottle tops and cans accounting for 42.7% of the Top Ten and 22% of all rubbish found. In 2006 metal bottle caps were not part of the Top Ten, however when they are included in the calculations, beverage containers and bottle caps accounted for 18.4% of overall rubbish, which shows beverage containers have had a 3.6% increase in total rubbish collected in just 12 months.



Top 10 Items Littered
Source: *CUA 2006 Rubbish Report*

Inaction also represents a significant cost to both the economy and environment. An estimated 743,022 tonnes of used container packaging is currently sent to landfill*9*. At an average cost of $51.08 per tonne the public pays a hefty

[38] Gitlitz, J. (2002). *The price of quenching our thirst.* Container Recycling Institute.
[39] Worldwatch Institute (2004). *State of the World 2004*.

$37.96million p.a. simply to dispose of containers.

Recovery of litter represents a significant cost with government spending approx

$200million p.a.*10* - discarded containers represent over 29.38%*11* of all litter volumes.

Based on these proportions the cost to attempt (unsuccessfully in many instances) to recover littered container rubbish represents a further $58+million p.a. in existing costs to the tax payer. A breakdown of the costs and recovery rates across Australia is outlined in the table below.

National Cost of Kerbside Recycling[40]	Cost Per Household	Total Households	Total Cost[41]	Tonnes of Recyclate	Cost / Tonne[42]
Qld	$38.00	1,441,300	$54,769,400	224,255	$244.23
NSW	$58.23	2,571,063	$149,712,998	557,044	$268.76
ACT	$22.00	130,000	$2,860,000	32,689	$87.49
Victoria	$33.27	2,059,729	$68,527,184	491,712	$139.36
Tasmania	$37.25	111,202	$4,142,275	29,995	$138.10
SA	$35.38	592,402	$20,959,183	99,291	$211.09
NT	$45.85	69,750	$3,198,038	2,637	$1,212.76
WA	$107.00	659,600	$70,577,200	70,593	$999.78
National	**$49.08**	**7,635,046**	**$374,746,277**	**1,508,216**	**$248.47**

Addressing the litter problem comes at considerable cost. Victoria alone spends approximately $50 million p.a. on litter.[43] The total cost when considering actions such as community clean ups is hundreds of millions of dollars.

Significant time and money is spent on education and advertising projects to reduce littering. A key problem is that the cost of managing litter is borne largely by rate payers (managed through local government), rather than the manufacturer or consumer of the goods. Consumers are not always rate payers. The disparity between rate payers and consumers is mostly due to the presence of two important groups:

- rental tenants
- tourists

Only 70% of all homes are owner-occupied, leaving up to 30% of tenants enjoying a free ride.[44] Tourists also account for a significant share of consumption, with 39% of tourist spending in Australia in 2002/2003 going on shopping, takeaway and restaurant meals and food products.[45] All of these consumption activities are associated with packaging, whose eventual contribution to the litter problem is borne by rate payers. Paying for the collection of packaging waste through rates (whether directly as owner/dweller or indirectly as tenant) is a very “blunt” tool which doesn’t reward good environmental behaviour – nor does it impose a cost on careless behaviour. Point of sale levies and deposit/refund systems do both.

A better system would ensure the cost of litter waste management is built into the price of goods, which the consumer then pays for directly. This is at the core of the ‘polluter pays principle’. In the current system, there is no financial incentive for the consumer to change behaviour. There is also no financial incentive for packagers to create products which are less likely to be littered, or easier to recycle.

From an economic standpoint, one of the greatest strengths of a CD system is the simple way in which the deposit ‘cost’ is borne by the consumer, rather than a simple blunt instrument like tax or rates. Nor do blunt tax based instruments reward people that avoid the use of packaging.

This, sharper approach of a CD system can be duplicated by other market based instruments commonly used within an EPR approach, such as an advance disposal fee. However CD systems go one step further - **the actual cost that a consumer bears is not only based on their consumption, but are also dependent on**

[40] NEPC 2005/06 Annual Report: Used Packaging NEPM
[41] Cost Per Household reported via NEPC2005/06 Annual Report X Number of households reported in same report
[42] Total Cost / Total Tonnes of recyclate
[43] Victorian Litter Alliance (2004). *Litter Ally Newsletter. August 2004, Issue 10*.
[44] ABS (1999). *Australian Social Trends 1999. Housing national summary tables*.
[45] ABS (2003). *Australian National Accounts: Tourism Satellite Account*.

how well (or badly) an individual disposes of their packaging once the goods are consumed. Every time a consumer disposes of a container, they choose whether they are willing to pay for the cost of disposal or they can choose to take a simple action to avoid the cost.

Obviously, the costs of waste disposal and recycling must be borne by society, ultimately the consumer. What has been missed by many within the current debate is the fact that CD systems are not about what it costs to recover resources, rather it is a question of how and where to levy the costs that already exist. Proponents of the National Packaging Covenant are not actually arguing for the current system; they are trying to avoid their liability for the cost of pollution. They support a waste and resource recovery system that is becoming increasingly overstretched, for the simple reason that recovery is funded from a blunt taxation based instrument – local government rates and state government taxes – rather than a charge embedded into the supply chain.

Rates and taxes can certainly generate the funding to encourage recovery, but they provide no price signal to the consumer or directly tie an individual's share of the cost to the extent they contribute towards the problem. This penalises consumers that are more frugal and rewards consumers that are wasteful. Rather than just charge each person on their consumption, a deposit / refund system only charges people on their consumption, less the resources they return for recycling or re-use (i.e. rewarding behaviour that minimises environmental costs).

The beverage packaging industry must take responsibility for the impacts associated with the use of their products, in the same way that the tobacco, alcohol, gambling and mobile communications industries have been called upon to take responsibility for the potentially harmful effects of the products they profit from selling. The Publishers National Environment Bureau (PNEB) is an association of Australian publishers who have promoted the recovery of used newspaper and magazines since 1990.[46] The publishing industry's support is evident from the initiatives taken for rational material use. Firstly, the PNEB conserves resources by establishing waste reduction measures within plants. This includes reducing the basis weight of newsprint, increasing the size of paper reels to reduce waste which occurs when changing new reels, improved transport methods top reduce damage to reels, and monitoring circulation trends to reduce the number of unsold copies. [47] The PNEB also provides free advertising to State and Commonwealth Governments to the value of $1 million per annum for the promotion of recycling. The success of the scheme is evident from the dramatic rates in paper and magazine recycling from 28% in 1990 to a world leading 75.4% in 2005. [48] Based on experience from operating the program, PNEB is critical of current recycling practice via kerbside for use of commingled collections, in which all recyclable materials are contained in a single bin for convenience.[49] While justified as a cheaper, or more simplified means for collection, experience has shown the benefits of reprocessing to be significantly diminished by this method.[50] From experience, PNEB strongly advocates the use of source separation of materials based on the ensuing benefits of higher quality of material recoverable, lower costs of reprocessing, and more sustainable markets.[51] This is consistent with aforementioned benefits of schemes such as a Container Deposit System which removes specific materials from the municipal waste stream for reprocessing, producing both higher quality materials, and reducing contamination within the stream.

It is time for the beverage industry to take responsibility for the residual resources created by its' business operations. The consumer must then make a decision whether to take action based on a price which reflects the true cost of both the good, and the end-of-life management for the packaging associated with the good.

The burden of cost is only borne by the polluter rather than tax payers (rates) or consumers (an ADF) but on people who both consume and fail to do the right thing - in turn forfeiting deposits.

[46] Members comprise leading publishers; ACP Publishing, APN News & Media, Independent Print Media Group, John Fairfax Holdings, Marinya Holdings, News Limited, Pacific Magazines, PMP Limited, West Australian Newspapers
[47] PNEB, *The Environment: Reducing Waste*
[48] PNEB, *In the News:Headlines*
[49] PNEB and Norske Skog Australia, *Position Paper on Resource Recovery, Recycling and Waste to Energy*
[50] PNEB and Norske Skog Australia, *Position Paper on Resource Recovery, Recycling and Waste to Energy*
[51] PNEB and Norske Skog Australia, *Position Paper on Resource Recovery, Recycling and Waste to Energy*

8. Limitations of kerbside recycling

This section aims to analyse the current data and establish a realistic estimate of the performance of kerbside recycling in Australia. Based on the most recent data from the National Packaging Covenant Council the recycling rates for packaging In Australia are as follows:

Packaging in Australia (Tonnes P.A.):	Consumption[52]	Recycling[53]			
	Total	Kerbside	C&I	Total	Rate %
Packaging & Industrial Paper:	2,690,000	333,300	932,700	1,266,000	47.06%
Glass Packaging	893,031	150,000	190,000	340,000	38.07%
Steel Cans	92,399	34,760	0	34,760	37.62%
Aluminium Bev Containers	50,210	18,000	11,000	35,800	71.30%
PET	106,628	41,646	7,984	49,630	46.54%
HDPE	161,200	44,558	7,338	51,896	32.19%
All Plastics (including the above)	585,296	Unknown	Unknown	179,125	30.60%
TOTAL PACKAGING	**4,310,936**			**1,855,685**	**43.05%**

Using the above data a breakdown of consumption and recycling of all containers has been prepared as follows:

Containers in Australia (Tonnes P.A.)	Consumption			Recycling	
	Tonnes that are containers	Av. # of Container / Tonne[54]	Est. Total Containers Consumed	Best Case – Current Recovery	Rate %
Glass Packaging	893,031	4,784	4,272,260,304	340,000	38.07%
Steel Cans	92,399	13,875	1,282,036,125	34,760	37.62%
Aluminium Bev Containers	50,210	66,821	3,355,082,410	35,800	71.30%
PET	106,628	29,205	3,114,070,740	49,630[55]	46.54%
HDPE	112,840[56]	20,008	2,257,698,798	51,896	45.99%
TOTAL Containers	**1,255,108**	**N/A**	**14,281,148,377**	**512,086**	**40.80%**

Container Consumption Patterns

To develop an accurate picture of containers (and in turn design a CD system) it is important to understand the patterns of container consumption, particularly the magnitude of containers consumed away from home.

Patterns of 'at home' and 'away from home' consumption are based on data modelled by the Institute for Sustainable Futures "White Report". The writer has adjusted aluminium consumption patterns to an at home

[52] Source Data – NPCC Revised Data Report by MS2, with recommended adjustments by reviewers Pitcher Partners / Industry Edge included. Plastics Data sourced from 2006 PACIA Plastic recycling Survey to reflect 2 polymers PET & HDPE only as these are the polymers most commonly used for containers.

[53] Source Data – As Above. NB Splits between kerbside recycling and C&I are estimates only as this breakdown was not undertaken in latest data report by MS2. Breakdowns between Kerbside and C&I has been sourced from earlier Data Reports for the NPCC by MS2 and/or reporting for MSW collection of packaging made in the 2005/06 NEPC Annual Report

[54] Source: ISF "Independent review of Container Deposit Legislation in NSW

[55] Source: PACIA 2006 Plastics Recycling Survey. NB The writer is not confident that this represents an accurate figure as PACIA include pre-consumer Industrial recycling, which is commonly excluded from recycling figures.

[56] Discussions with Industry indicate that approx. 70% of HDPE packaging is represented by containers, with milk container the largest sector.

consumption rate of 44% (10% above the level currently recovered through kerbside collection) to reflect a more realistic figure for today's market. It is not that these figures are assumed to be incorrect rather it is assumed that significant portions of away from home consumption are likely based on bottle shops sales of cans of beer, soft drink, and Ready to Drink (RTDs) which are often consumed 'at other people's homes' during social activities. This adjustment reflects high levels of aluminium in MSW recycling (NB in a more detailed analysis revision of 'at home' and 'away from home' consumption of PET Bottles may need to be considered, with the popularity of 600ml+ bottled water becoming a major component of 'away from home' consumption):

Estimated Consumption Patterns[57]	Container Consumption	
	Away from Home	At Home
Aluminum (per White Report)	75%	25%
Adjusted to -	56%	44%
Glass	55%	45%
PET	30%	70%
HDPE	45%	55%
LPB	20%	80%
Other Plastic	10%	90%
Steel	10%	90%

This can be interpreted as saying that even if kerbside is 100% effective, a significant proportion of packaging materials can only ever achieve a 40% recovery rate because of public place and commercial consumption (cafés, materials, pubs and clubs). A 50% loss is a significant systemic problem which kerbside recycling alone cannot overcome.

Furthermore, recycling systems for public places should not be subsidised by rate payers through local government, but rather the full cost of collection should be incorporated into the cost paid by the consumer.

Cost of kerbside

Before any modelling of a proposed system it is important to characterise the current situation to establish baseline performance and associated costs. The most optimistic view of the current rate of packaging recycling stands at just 43.05% per annum (which we contend remains overstated), well short of the minimum 65% target recycling rate set by Ministers when the NPC was renewed in 2005. Container recycling rates are even worse, with a best case of just 40.8%. It is now an established fact that after 8 years the NPC has delivered little, if any, improvement in recycling rates or reductions in litter. This performance falls well short of recognised community expectations and creates a compelling case for intervention.

The NPC advocates 2 major forms of action to increase packaging recovery rates:

1. Improving the existing kerbside recycling system (which the NPC make little contribution to); &
2. Public Place Recycling (where industry won't support operating costs only partial funding of establishment costs).

Analysis by various jurisdictions and performance of the current NPC has already shown that these policy options will not meet the public's expected recycling rates for packaging. NEPM reporting for used packaging show that the current costs of kerbside recycling[58] equate to $374million+ p.a., an average $248.47 / tonne of material collected (nett of the sale of recyclate).

Our projections show that a National CDS will increase resource recovery by some 631,008 tonnes. Assuming that the cost per tonne to recover via kerbside recycling remains reasonably constant (and in all likelihood the costs to institute a comprehensive public place recycling system will be significantly higher) the cost of increasing recycling via the status quo represents a cost to Australian families in the order of $222 million p.a. We have established this as a benchmark cost to assess whether the costs of a National CDS are reasonable.

[57] Source: ISF "Independent Review of Container Deposit Legislation in NSW"
[58] Source: Extrapolation of data from NEPC Annual Report 2005/06 – Reporting for the Used Packaging NEPM

A breakdown of the costs and recovery rates across Australia is outlined in the table below. Inaction also represents a significant cost to both the economy and environment. An estimated 743,022 tonnes of used container packaging is currently sent to landfill[59]. At an average cost of $51.08 per tonne the public pays a hefty $37.96million p.a. simply to dispose of containers.

Recovery of litter also represents a significant cost with government spending approx $200million p.a.[60] - discarded containers represent over 29.38%[61] of all litter volumes. Based on these proportions the cost to attempt (unsuccessfully in many instances) to recover littered container rubbish represents a further $58+million p.a. in existing costs to the tax payer. In an analysis of the most littered items found on Clean Up Australia Day 2006, six of the top ten most prevalent items directly relate to beverage containers. Further environmental costs associated with the failure to recover containers for recycling include substantial GHG Emissions, increased consumption of water to manufacture packaging, and decreased air quality, which have been outlined later as benefits for a Container Deposit System.

National Cost of Kerbside Recycling[62]	**Cost Per Household**	**Total Households**	**Total Cost[63]**	**Tonnes of Recyclate**	**Cost / Tonne[64]**
Qld	$38.00	1,441,300	$54,769,400	224,255	$244.23
NSW	$58.23	2,571,063	$149,712,998	557,044	$268.76
ACT	$22.00	130,000	$2,860,000	32,689	$87.49
Victoria	$33.27	2,059,729	$68,527,184	491,712	$139.36
Tasmania	$37.25	111,202	$4,142,275	29,995	$138.10
SA	$35.38	592,402	$20,959,183	99,291	$211.09
NT	$45.85	69,750	$3,198,038	2,637	$1,212.76
WA	$107.00	659,600	$70,577,200	70,593	$999.78
National	**$49.08**	**7,635,046**	**$374,746,277**	**1,508,216**	**$248.47**

The costs of maintaining the status quo

Based on the above, the costs to do nothing more than maintain the existing NPC represents an existing cost to the Australian economy of $257 million p.a. just to deal with used packaging. Compared to the overall cost of MSW waste, kerbside recycling and litter of $1.256billion this means that while packaging may only represent some 13% of the total waste generated in Australia it represents over 20% of the total cost to manage MSW waste highlighting the fact that the costs to manage packaging waste are disproportionately high. Regardless of the policy direction that governments adopt it would be prudent to immediately establish that based on the polluter pays principle this cost should be seen as liability to the food and grocery industry rather than government.

Packaging Waste Costs p.a. (Status Quo)	**Kerbside Recycling** *(@ $248.47 / tonne)**	**Landfill Cost** *(Containers @ $51.08 / tonne*	**Litter Cost** *(Container's share of litter costs – 26%)*	**Govt & Ind NPCC FUNDING**	**Total Cost**
Current Costs	$154,613,873	$37,960,132	$58,760,000	$6,000,000	$257,334,005

** Nett of Recyclate Sales*

The most important feature of kerbside recycling services is that all costs are borne by local government, who in turn pass costs onto house owners via local government rates. This cost has ballooned in recent years to a whopping $374 million nationwide every year.

[59] Landfill and Waste levies only. No collection costs have been included. if collection costs were included these costs would be substantially higher.
[60] Calculation of the total cost of litter. Source: Plastic Shopping Bags – Analysis of Levies and Environmental Impacts – Nolan ITU Pty Ltd, December 2002
[61] KAB 2006 National Litter Index – Volume of litter, on an item count basis containers represent 11.95%
[62] NEPC 2005/06 Annual Report: Used Packaging NEPM
[63] Cost Per Household reported via NEPC2005/06 Annual Report X Number of households reported in same report
[64] Total Cost / Total Tonnes of recyclate

Local governments are tired of packaging manufacturers' total reliance on kerbside recycling to deal with their waste. The NSW Local Government and Shires Association (LGSA), representing all 173 Councils in NSW, prepared a submission to the *Independent Review of Container Deposit Legislation in NSW* in December 2000 supporting CDL for NSW and criticising industry's role in disingenuously supporting kerbside in order to avoid "producer responsibilities".

The NSW LGSA submission stated: 'Over the past decade, local councils have been coerced, particularly by the beverage and packaging industries, into providing more and more kerbside collection services. These industries have gone to great lengths to ensure collection, by councils, of their (supposedly) recyclable material. Initially there was little or no net cost associated with such collection services as the price received for the material collected tended to off-set collection costs – largely because industry subsidised the payback price during the establishment of kerbside collection services. This created an artificially favourable market situation and attracted councils to enter what was ultimately to become an unsustainable market. Once these collection services were established, ratepayers "depended" upon them as a means of satisfying their desire to "protect the environment". Industry then quickly withdrew the financial support it initially provided.[65]

The net result is that the packaging industry and consumers are receiving a 'perverse' subsidy from rate payers. When considering the way forward, it is imperative to look at systems that involve the provision of direct feedback loops to industry and the consumer through internalising negative externalities into a pricing signal that promotes desirable activity. At present, excessive consumption does not lead to an increase in costs to the consumer for the end-of-life management of purchased packaging. This obviously requires a change from the status quo.

It is worth noting that in addition to the price of kerbside recycling, externalities associated with packaging waste are also a major cost and environmental burden. Examples include the costs of litter collection, the health impacts of glass injuries and cost of treatment, bush fires caused by glass litter and the extra energy and water consumption associated with utilising virgin materials rather than recycled materials in packaging manufacturing. This has obvious importance for greenhouse policy when the manufacture of an aluminium can from virgin materials utilises 95% more energy than a can made from recycled materials.[66]

Ongoing role for kerbside

The Boomerang Alliance recognises that kerbside recycling is a positive activity that allows the public to contribute to an immediate environmental goal. It brings people in direct contact with ideas of cyclic flow and engaging in restorative behaviours and has value for this function.

However, given contamination issues, away from home consumption of packaging materials, and the ongoing cost of kerbside recycling to parties that are not directly involved in the consumption of packaging materials (local government and rate payers), reliance on kerbside recycling as the primary mechanism for resource recovery is highly questionable at best and disastrous at worst. Kerbside systems will be retained for many non-deposit items, but need to be recognised as just one component of the infrastructure required to maximize recovery of valuable resources. Collection depots and the intelligent development of price signals are also required to optimise performance and provide a level of uniformity to both at home and public place consumption of beverage containers.

Appendix 3 calculates the financial costs and impacts of a national container deposit system on the current kerbside recycling scheme. An ongoing role for kerbside is anticipated based on limitations of human engagement and issues of convenience. The analysis shows that while the existing MSW kerbside recycling network will collect some 227,000 less tonnes of material they will actually improve their earnings by some $41million p.a. with substantial savings by decreased tonnages to landfill, reduced gate fees at MRFs, reduced contamination of paper and improved value of materials recovered (the deposit being worth more than the materials). This will also provide funding for ongoing kerbside services making it a more viable and less costly service to local ratepayers.

[65] LGSA of NSW (December 2000). *Submission to Independent Review for Container Deposit Legislation in NSW*.
[66] Hudson, P., in association with Cole Solicitors (March 2000). *Container Deposit Legislation: Economic and environmental impacts.* Report prepared for the South Australian Environment Protection Authority.

9. The CDL solution

Container deposits are seen as a mechanism to assign responsibility more closely to the consumer of a product. A deposit-refund system provides a powerful incentive for consumers to ensure that materials are returned to collection centres for reprocessing or reuse.

Container Deposit Legislation (CDL) enables deposits to be paid on the purchase price for certain containers (usually beverages, but not exclusively), and the deposit is refunded on the container's return.

This approach is widely applied throughout Europe and North America as an important weapon in the armoury to combat littering, encourage recycling and reuse, and help achieve zero waste.

Implementation of a CDL scheme could achieve the following benefits:

Increase viability of kerbside recycling systems

A major argument utilised by industry in their ideological rejection of CDL is that it would have a negative effect on kerbside recycling. However, CDL actually complements kerbside recycling by focusing on the huge 50% of containers that are consumed away from home, which kerbside systems are unable to recover.

A deposit/refund system can also improve the economic viability of kerbside by:

- setting up an alternative container return mechanism for materials. Currently, the cost of collection exceeds the monies received for the materials – in Sydney alone, the gap between kerbside costs and the funds received from material recovery is $36 million per year.[67] Not only is kerbside recycling financially fragile, it is a major cost imposition on local government;
- reducing the number of collection services and sorting operations which need to be provided;
- reducing landfill and associated levy costs by increasing return rates and therefore reducing the residual waste stream;
- providing councils with potential income from refunds when householders elect to use the kerbside collection system for deposit-bearing materials (Councils in South Australia have reported income of up to $90,000 per year from unredeemed deposits – as opposed to significant expenditure experienced by other councils on other states);[68] and
- reduced burden on litter management and the associated costs. Two studies (ISF 2001, BEAR Report 2002 – US) found unit costs in deposit/refund systems were lower than kerbside systems alone and could help to reduce the net costs of kerbside collection (cited in ISF, 2004).[69] In addition, CDL is crucial to take the financial pressure outlined in the previous section off local government and rate payers, and achieve a more equitable distribution of costs in managing recycling schemes. It is also a highly effective way to overcome major litter problems faced by councils and state governments – by placing a value on waste, CDL encourages voluntary litter collection.

CDL has shown itself to be particularly suitable for communities which are geographically autonomous, such as South Australia and Hawaii. In these cases, desert, or sea barriers make it more difficult for "cross border" movement of containers to skew the return figures.

[67] Institute for Sustainable Futures (2004). Beyond Recycling: An Integrated Waste Management Framework for Local Government. Part B: Recycling in Context – the current situation.
[68] Hudson, P., in association with Cole Solicitors (March 2000). *Container Deposit Legislation: Economic and environmental impacts*. Report prepared for the South Australian Environment Protection Authority.
[69] Institute for Sustainable Futures (2004). Beyond Recycling: An Integrated Waste Management Framework for Local Government. Part B: Recycling in Context – the current situation.

Reduce recycling contamination rates

The quality of recycled content from kerbside is often highly inferior to that from deposit collection systems, with contamination issues such as broken glass mixed with paper posing a serious threat to recycling machinery. CDL addresses the highly problematic area of recycling contamination by ensuring that materials are properly sorted at collection depots, avoiding the common scenario where recyclable materials are not correctly sorted at the kerbside and therefore end up in landfill rather than being resorted.

Correct sorting of materials under CDL also enables the best resource recovery outcome to be achieved. An example is plastics recycling – due to the large variety of new and specialty plastics on the market, kerbside services do not have the capacity or sophistication to sort these plastics and ensure that each material is reused in the best possible manner e.g. a PET bottle being recycled into another PET bottle. As a result, plastics are usually commingled and recycled into products such as insulation for the overseas market, which is clearly not the best resource recovery outcome as the end product is not available for further reuse.

Motivating consumers

CDL is a highly effective way of educating the community on environmental matters by raising the profile of litter control and recycling. It also provides motivation to consumers to recycle by placing a value on a resource that is otherwise afforded no value.

According to Ian Kiernan, chairman and founder of Clean Up Australia, this is clearly the case in South Australia:

"The lack of drink bottles and cans found in South Australia on Clean Up Australia Day is telling us something – and that is that Container Deposit Legislation works and should be embraced by all states and territories. Rubbish does not have to be wasted; it is a resource which has a financial value that is reinforced via such schemes as a Container Deposit system."[70]

This view is supported by the very high beverage container recovery rates experienced in South Australia:[71]

It therefore comes as no surprise that CDL receives extremely strong public support in South Australia. A telephone survey conducted by the South Australian Environment Protection Agency (EPA) in 1993[72] revealed that 95% of respondents supported the concept of a refundable drink container deposit. In addition, an EPA survey conducted in

June 2004[73] found that:

- 60% of survey respondents returned beverage containers to collection/recycling depots;
- 32% did not collect the refund and disposed of containers using kerbside service;
- only 4% generally throw empty beverage containers covered by CDL into garbage bins; and
- 80% said they would still purchase the same amount of beverages per week if an increase in the refund amount drove beverage prices up.

Financial benefits

The high popularity of CDL in South Australia indicates that consumers are willing to pay the small extra cost on their drinks in return for reduced waste and litter.

In addition, CDL provides materials for remanufacturing that offset the need for virgin materials. CDL in South Australia contributes in the order of $720,000 or 40% towards the total value of replacement of virgin materials each year. In addition to this figure, energy savings from utilising recycled material rather than processing virgin materials are estimated to be up to 95%, resulting in not only cost savings but reduced greenhouse gas emissions.[74]

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[70] *Urgent Calls to Fast Track Container Deposit Legislation.*
[71] SA Environment Protection Authority (2004). *Amount of waste materials recycled*.
[72] Cited in Hudson, P., in association with Cole Solicitors (March 2000). *Container Deposit Legislation: Economic and environmental impacts*. Report prepared for the South Australian Environment Protection Authority.
[73] McGregor Tan Research (2004). *Community awareness and acceptance of Container Deposit Legislation*. Prepared for the South Australian Environment Protection Authority.
[74] Hudson, P., in association with Cole Solicitors (March 2000). *Container Deposit Legislation: Economic and environmental impacts*. Report prepared for the South Australian Environment Protection Authority.

Unclaimed deposits should be factored in to any consideration of the costs/revenue/savings which may result from the introduction of a CDL system. Based on a deposit of 5 cents and associated 85% return rate for beverage containers, which is the case in South Australia, annual income from unclaimed deposits would be around $30 million.[75]

The annual income from such unredeemed deposits to Coca-Cola Amatil in South Australia is estimated at around $8 million. This income stream highlights that the beverage industry's opposition to container deposits is not based on financial impacts, but rather on an ideological opposition to regulation and producer responsibility. This opposition is untenable if sustainability and zero waste objectives are to be achieved, particularly from companies that hold themselves up as the environmental leaders like CCA.

It is also imperative to consider the financial benefits generated by CDL in the areas of job creation (around 500 new jobs are created for every million people through the introduction of CDL),[76] landfill reduction, environmental and community outcomes, and lowering the cost of kerbside recycling services.

The total impact on our economy is actually a saving of some $3milion p.a. and increases to $84.9million p.a. if government returns operating surpluses to tax payers via rates or income tax. This represents an annual saving of some $11.52 per Australian Household.

The summary of our assessment is as follows:

Summary Financial Costs and Savings of a Combined CDS and Kerbside System	
Costs	**$ Per Annum**
Existing Cost to Collect & Recycle Packaging via MSW [Kerbside & Other] (nett of recyclate sales)	-$154,613,873
NGO System Administrator	-$4,000,000
Handling Fees for collection and Hubs [supercollectors] (nett of recyclate sales)	-$140,575,916
Existing Costs of landfilling container currently	-$37,960,132
Existing Cost of containers 'share' of litter abatement (28.38% of litter volume)	-$58,760,000
Less Savings & Benefits:	**$ Per Annum**
Increased paper recyclate sales through reduced contamination	$14,265,248
Savings to operation of kerbside and MSW recyclate	$18,928,717
Savings to MSW be reduced volumes of landfill	$26,631,962
Savings from reduced volumes of Litter (reduction @ 12% of total litter)	$24,000,000
Additional Greenhouse Abatement @ $35 / tonne	$48,360,715
Additional Water Savings	$9,403,495
Total Cost	-$254,319,785
Less Existing Costs (Status Quo)	-$257,334,005
Annual Savings if a National CD System is introduced:	**$3,014,221**
Annual Savings if Government Refunds System Surpluses via Taxes or Rates	**$84,944,167**

This report also shows that Container Deposits are far cheaper and effective than an uncertain public space recycling scheme based on a variety of bins and an increased allocation of time and resources from local councils.

After exhaustive research of the different approaches and instruments used to manage packaging waste across the world it is clear that Container Deposits are the only sustainable mechanism we have found that

[75] LGSA of NSW (December 2000). *Submission to Independent Review for Container Deposit Legislation in NSW*.
[76] LGSA of NSW (December 2000). *Submission to Independent Review for Container Deposit Legislation in NSW*.

can lift our container recycling performance and establish a recycling system that can lift packaging recovery to the NPC 2010 target of 65%.

It is clear that adopting a National 10¢ Container Deposit System is simple common sense. It is an effective mechanism for resource recovery; responsible citizens can avoid all costs by recycling their containers, and there are big environmental benefits.

Provide recycling services to remote communities

CDL can also be successfully utilised in remote communities where it is not financially viable to run kerbside recycling, thereby providing a vital service to these areas. It can be implemented via mobile balers which move from town to town, maximising container densities for shipping and helping to reduce transport costs, or by placing Reverse Vending Machines in locations close to retail operations.

The Arid Lands Environment Centre in Alice Springs recently ran successful drink container deposit trials:[77]

• 8,000 containers collected at the Alice Springs Show, July 2004 (5c each)

• 17,000 containers collected at the Yeperenye Festival, September 2004 (10c each)

It is particularly pertinent that CDL be implemented to give remote communities that remain without access to kerbside and thereby are unable to participate in recycling. Currently 568,231 Australian homes are without access to recycling and would benefit significantly from improved waste management services. Prohibitive existing costs of recovery have denied access to municipal recycling services. It is important to recognise that many of those who cannot recycle are from the bush and number amongst the most disadvantaged people in Australia including remote aboriginal communities and small pastoralists. A remote collection system is easily managed requiring a different collection regime and pricing structure for rural townships and remote communities.

Social Costs of Litter

Injuries

Injuries, particularly to children, from broken bottles and cans represent a substantial hazard to children. As part of the investigations into the adoption of a container deposit system fro Western Australia, Boomerang Alliance undertook a study of glass injuries in Western Australia. The study showed that presentations to WA hospital emergency departments for lacerations from broken glass bottles, has grown dramatically over recent years, from 281 in 2004 to 743 in 2006. This data extrapolates to an estimated 7,043 hospitalisations per annum, many of which are horrific and traumatic injuries, mostly to young children.

According to international studies on the incidence of glass injuries to children from broken glass, the vast majority (86%) of these glass lacerations to children result from broken glass bottles. The introduction of a container deposit scheme (similar to South Australia's 5 cent deposit system and known in the US as a 'bottle bill) has been shown to dramatically decrease these injuries by up to 65%.

According to a study from the US, titled, "Reported incidence of injuries caused by street glass among urban children in Philadelphia", cited by the Harvard Injury Control Research Centre[78], *"For many years in the United States, lacerations have been the most common pediatric injury that required evaluation by a physician. Broken bottle glass is generally the leading cause of these lacerations; for example, broken glass bottles accounted for 15% of lacerations seen in an emergency department at an urban Children's Hospital."*

A further US study, examining injuries to children in Philadelphia (cited in the online US journal 'Injury Prevention'[79]), of the 241 children surveyed, *"83 (34%) had been cut at least once while walking outdoors … The majority of lacerations (86%) were caused by broken glass."*

This study concluded that, "Broken glass is a significant health problem on littered urban streets. Preventive measures such as street cleaning, footwear education, and glass recycling incentives are needed to address this public health hazard."

Container Deposit Systems are a proven solution to this hazard. In 1983 Massachusetts introduced a 'container deposit' system (or 'bottle bill'). In that year the incidence of glass related lacerations to children fell

[77] Cole, S., *Container refund trials successful*. The Paper, Edition 021.
[78] http://www.hsph.harvard.edu/hicrc/success.html#glass
[79] http://injuryprevention.bmj.com/cgi/content/abstract/4/2/148

from a previous yearly 'steady average' of 110 to 38, a drop of around 65%. According to the study, "The impact of the 'bottle bill" legislation on the incidence of lacerations in childhood"[80], *"The conservational "bottle bill" legislation appears to have dramatically reduced urban children's exposure to, and injuries from, broken glass in the environment."*[81]

Cycling

The serious prevalence of broken glass on roads and bike-paths represents a serious hazard for cyclists and has seen organizations like Bicycle NSW and the Sustainable transport Alliance in Western Australia to call for the introduction of Container Deposit Legislation.

Cyclists report that glass fragments on roads create serious safety risks. Cyclists have to concentrate on the details of the road surface just ahead, and this can partly distract them for watching for vehicles and other hazards. A cyclist suddenly confronted with a patch of glass fragments ahead by the side of the road will probably swerve out around the glass; risky if there is a car passing.

Glass punctures are a regular occurrence for many cyclists, causing significant delays and on busy roads placing cyclists at further risk. While there are no statistics available the Bicycle Transport Alliance of WA cites glass punctures as one of the major reasons (after traffic hazards) that cyclists give as a reason why they don't ride to and from work.

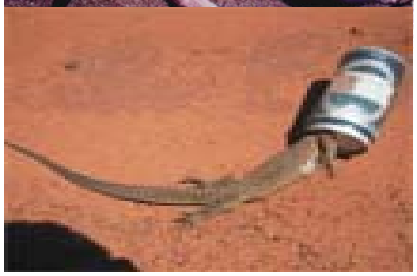
Wildlife

Litter is the most common visual pollutant affecting our waterways and terrestrial environment. Our beaches are often lined along the tide marks with plastics, bottles, cigarette butts, fishing line and other rubbish discarded by humans. Litter enters the environment after being carelessly dropped by passers-by, washed down stormwater drains, dumped off ships and boats, and can come from remote sources after drifting with the ocean currents. Often the rubbish originates from garbage dumps, and is blown or washed into the catchments. Litter not only looks bad, it poses a major threat to marine life.

It is estimated that some 100 000 marine animals (including turtles, whales and dugong) and 700 000 - 1 million seabirds are killed as a result of litter every year[82].

The most common causes are seen as

- Entanglement in floating rubbish suck as plastic sheet, bags etc
- Strangulation and chocking from consuming litter like cigarette butts, cardboard and plastic
- Lacerations from litter such as broken glass.



At any one time 500 seals in Tasmanian waters and 45 seals at Victoria's Seal Rocks have 'collars' of plastic litter, often starving them to death. Turtles often die after mistaking plastic bags for their dietary staple, jellyfish.

Litter is mobile, and litter attracts litter—people are more likely to discard their rubbish carelessly when other rubbish is already present.

A survey of islands and coral cays adjacent to the Great Barrier Reef Marine Park found the most common forms of litter to be plastics, rubber, glass and polystyrene. It is estimated that 7 billion tonnes of debris enters the world's oceans each year[83].

The impacts of litter on wildlife are also felt on land, Coordinator of Clean up the Kimberley Jake Wahl reports that cans and bottle litter is having a major impact on Kimberley wild life, with many lizards, small mammals, bids and insects becoming trapped inside containers.

[80] http://www.hsph.harvard.edu/hicrc/success.html#glass
[81] "There were no organized outdoor Boston clean-up programs during this period"
[82] Source: Qld EPA
[83] (NSW EPA 1995)

Research by the Australian Platypus Conservancy has shown on average 10% of the animals living in suburban waterways have something caught around their body, with the entanglement rate being as high as 60% in some areas. In addition, many platypus have scars on their bills and bodies which may have been caused by encounters with sharp objects in the water, such as broken glass, sharp pieces of metal or discarded wire.

Improved environmental aesthetic

Beverage container waste has a major aesthetic impact – its detrimental effects manifest at beaches, parks, roadways, waterways, and in urban, industrial, regional and remote environments. While it is impossible to quantify the aesthetic impact in monetary terms, tourism peak bodies such as See Australia argue that a cleaner environment has flow-on financial benefits by enhancing tourists' enjoyment. Outdoor adventure and eco-tourism play a significant role in the Tasmanian economy. The levels of litter found in Cradle Mountain, The Franklin and other wild places have a significant impact on visitors' enjoyment of their visit to Tasmania.

Environmental edge for business

A survey of beverage fillers/distributors in South Australia found that CDL can offer a unique environmental marketing edge for these companies because their containers are not seen as litter, and the deposit label helps to promote the companies as being 'green'.[84] These additional economic benefits provide support for the introduction of CDL across Australia.

Prevent a major source of environmental damage

The beverage industry frequently argues that CDL unfairly discriminates against one form of waste. However, intelligent discrimination between materials is the long established environmental and economic practice when applied to decisions such as packaging choice.

The only way to reduce environmental degradation is to selectively discriminate against those materials and systems of packaging that are resource intensive, not recyclable and damage the environment through their manufacture, use and disposal. It makes sense to focus on items that can be easily collected and sorted with technology that is readily available here and now.

The implementation of a National CDS produces very significant greenhouse gas reductions, largely but not solely as a result of capturing the embodied energy in packaging materials.

Boomerang Alliance believes that the increased container recycling outlined herein will create reduction in the order of 1,381,735 tonnes of Co2-e p.a.[85] Based on the current secured 2010 contract carbon price in the EU trading scheme @ $35 per tonne[86] this level of abatement has an economic benefit of $48.361million per annum.

Water security has became a major issue in Australian environmental policy and the increased level of container recycling produces substantial water savings, estimated at 8.106 gigalitres of water p.a. – enough to permanently supply some 24,126 homes.

Nearly every state in Australia has announced the need to construct desalination plants in

Australia to meet growing demand; accordingly we have costed water savings on the direct costs of water supplied via desalination. Using the cost estimates for water produced from Australia's only operating desalination in Perth[87] we would estimate that the level of increased container recycling outlined in this model provides an economic benefit of $9.402million p.a.

[84] Hudson P, in association with Cole Solicitors (March 2000) *Container Deposit Legislation: Economic and environmental impacts*. Report prepared for the South Australian Environment Protection Authority.
[85] Using calculations provided by Wanken ISE for Ecos Corporation – see Carbon Abatement Proposition of Container Deposit Recycling
[86] Source: Total Environment Centre modelling for national Emissions Trading Scheme
[87] $1.16 per Kilolitre – source: WA Water Corporation

While the exact outcomes Australia can expect from a CDS will vary depending on the design and features that jurisdictions choose to adopt, this section of the analysis seeks to establish the broad benefits that Australians will enjoy when a container deposit system is introduced.

While Boomerang Alliance supports extending a container deposit system beyond these more common materials (e.g. consideration should be given to including polystyrene cups, PVC cordial bottles and paper based flavoured milk containers for instance); for the sake of this exercise glass, PET & HDPE, aluminium and steel are the only materials have been selected as those most commonly used packaging.

By comparing the current recycling performance with projected increased levels of recycling in the model used earlier we can get a view of what outcomes could be reasonably expected. This suggests that the nation could expect to increase overall recovery for recycling of packaging by approx. 605,565tonnes p.a. (528,367 tonnes of additional containers plus another 77,198 tonnes of paper previously lost to glass contamination).

The projected increase in recovery rates if a container deposit system was adopted would reduce raw material resource depletion by approximately 97,689 tonnes p.a. Over and above direct reductions in virgin materials consumed, there are significant savings in terms of air quality, water and greenhouse gas reductions. Below is a table sourced from "The Victorian Life Cycle Study"[88] showing savings per tonne of material collected via kerbside recovery.

Lifecycle benefits of kerbside recycling	Smog Precursors (gC2H4-e)	Water Usage (L)	Solid Waste (Kg-residual)
Newsprint	**35**	**20,752**	**812**
Paper & Board	**33**	**22,483**	**736**
LPB	**-600**	**2,425**	**575**
Glass	**-97**	**2,038**	**984**
Aluminium	**267**	**1,716,667**	**5,433**
Steel Cans	**859**	**882**	**1,153**
PET	**2,627**	**-52,818**	**609**
HDPE	**9,570**	**-76,900**	**700**
PVC	**-250**	**48,500**	**750**

Further leading environmental Consultant Matthew Warnken principal of WISE recently undertook a study of the *Potential Abatement of Greenhouse Gases* if a Container Deposit

System was adopted.[89] The benefits for every tonne of material collected are as follows:

Total Greenhouse Gas Abatement per tonne of recyclate collected via CDS

Material Type	**Glass**	**Steel**	**Aluminium**	**PET**	**HDPE**
Net Abatement from Recycling (tCO_2e)	1.25	2.7	18.8	6.0	5.85

Based on these estimates the environmental benefits are substantial:

Resource Conservation Benefits from CDS	**Materials Savings (Tonnes)**	**GHG Reductions (Tonnes Co2-e)**	**Water Conserved (Litres)**	**Smog Precursors (gC2H4-e)**
Glass	371,063	463,828	756,225,799	-35,993,083
Aluminium	6,458	121,410	11,086,227,246	1,724,285
Steel Cans	48,659	131,379	42,917,100	41,797,947
PET	44,301	265,803	-2,339,864,717	116,377,459
HDPE	50,795	297,153	-3,906,163,813	486,111,673
Paper (less contaminat'n)	109,733	102,161	2,467,119,844	3,621,178
Min. Savings P.A.:	**631,008**	**1,381,735**	**8,106,461,459**	**610,018,281**

[88] RMIT
[89] See Carbon Abatement Proposition for Container Deposit Recycling by WISE For Ecos Corporation April 2007

In summary the environmental benefits from the adoption of a National Container Deposit System is as follows:

Environmental Consideration	Level of Benefit	Point of Comparison
Litter Reduction	12-15% reduction in litter	It would take around 6 X Clean up Australia Days each year – i.e. around 375,000 days of labour to collect an equivalent amount of litter.
Reductions in Waste to Landfill	631,008 tonnes less landfill	A reduction of approx. 6% of all MSW Waste to landfill
Greenhouse Gas Abatement	1.38million tonnes of Co2 equivalent	Switching 197,000+ homes to 100% renewable energy
Drinking Water Savings	8.1 gigalitres of water saved	Enough water Savings to permanently supply 24,128 homes with all their water consumption
Air Quality	Removal of 610million gC2H4-e	The same improvements in air quality as removing 144,711 cars permanently off the road

It is clear that the adoption of a National Container Deposit system represents major environmental gains for little economic impact when compared to the status quo of simply renewing the patently ineffective National Packaging Covenant.

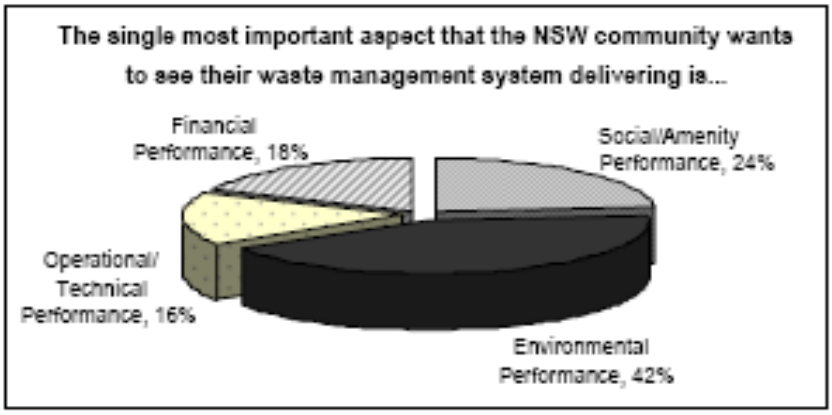
Container Deposits have been a cornerstone of South Australia's success as the leading Australian jurisdiction in tackling waste, litter, and resource recovery.

We urge all governments to take immediate steps to bring this outstanding policy approach to the vast majority of Australians who support this popular initiative.

Address the community's needs

Studies have shown that the community overwhelmingly wants a waste disposal and recycling system that delivers superior environmental performance.

For example, a survey conducted by the NSW Department of Environment and Conservation in 2004[90] found that environmental performance was the most important feature that communities wanted from their waste management system:

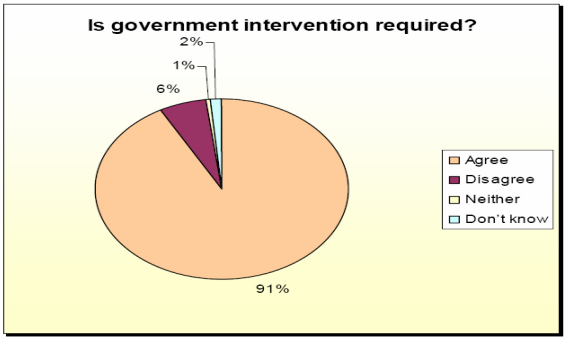


[90] Nolan ITU (2004). *Getting more from our recycling systems – Assessment of domestic waste and recycling systems*. Report prepared for the NSW Department of Environment and Conservation, Publishers National Environment Bureau and NSW Jurisdictional Recycling Group.

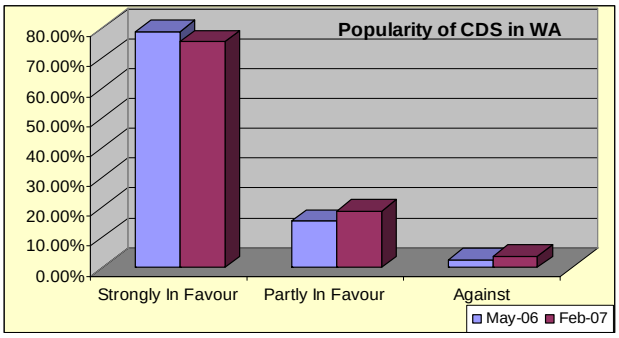
Public Support and Willingness to Pay

It is clear from Newspoll surveys commissioned by Boomerang Alliance that the public is calling for action. A survey conducted in Dec. '04 showed that 91% of respondents thought governments should intervene, making those responsible for packaging waste deal with the mess[91].

Subsequent research undertaken by Newspoll[92] for the Boomerang Alliance in Western Australia in May '06 indicated that 94.45% of the adult population want CD with just 2.58% against. In Feb '07 the survey indicated 94.48% in favour and just 3.87% against.



NewsPoll: Should government intervene to reduce packaging waste and litter?



Would you support the introduction of a container deposit / refund similar to that in SA?

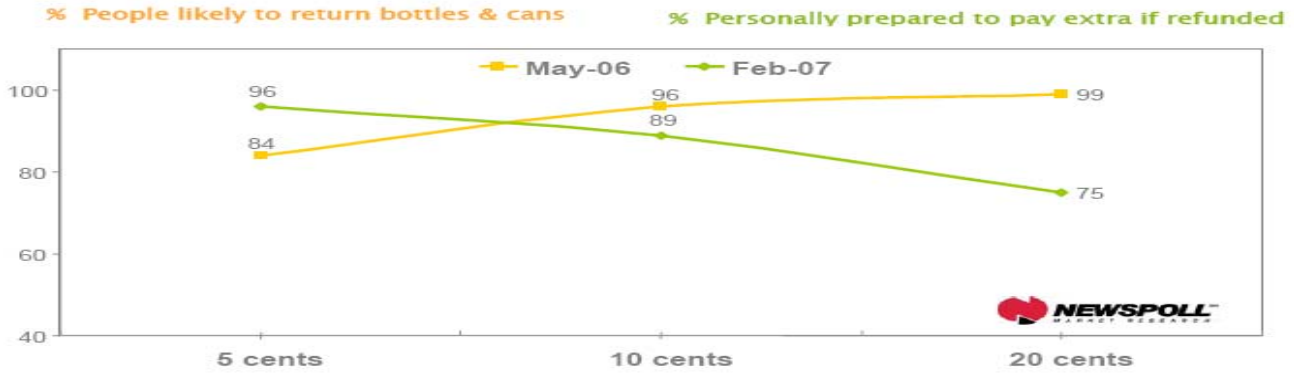
The research shows a large majority of Australians want more action to be taken to address packaging waste. This belief has been supported by some members of the industry, including Coopers Brewery and Diageo, who have supported increased producer responsibility.[93]

Three hundred households in WA were surveyed, representing both metropolitan and regional households. Newspoll advises that the standard statistical assessment indicates this level of information will be accurate within a 6% variation. Participants were firstly asked if they supported introducing a container deposit system:

Question: South Australia currently has a container deposit and refund scheme, which provides a refund for each empty bottle and can that is returned. Government is proposing to introduce a similar scheme to encourage recycling and reduce litter. Are you personally in favour or against the government introducing this type of scheme?

Results:	Strongly in favour	79%
	In favour	15%
	Against	3%
	Neither / don't know	3%

This data indicates very high support for the introduction but also indicates a very strong "willingness to pay"



Newspoll Analysis: Returning Behaviour & Acceptance of Cost

[91] Newspoll 2004
[92] Newspoll May 2006
[93] Supporting statements for CDL are included as appendices to this document.

that is a key aspect in determining the validity of implementing any policy. The survey then moved onto people's thoughts about what level of deposit they thought would be necessary to encourage them to return their containers. While there is recognition that CD means an upfront deposit, once again there is a very strong commitment to CD or 'willingness to pay' with 96% prepared to pay @ 5¢, 89% prepared to pay @ 10¢ & 75% prepared to pay at a high 20¢. The following graph is prepared by Newspoll and shows both the public's likely rates of returning and their preparedness to pay the deposit:

The strong public desire to adopt a container deposit system (94+%) and willingness to pay a refundable deposit (89% at 10¢) far outweighs the relatively minor level of inconvenience each household would experience. If this level of inconvenience was considered to be a barrier to the implementation then no environmental policy would ever be implemented.

10. Mutual Recognition Act

The Boomerang Alliance has received legal advice from both law firm Baker & McKenzie, and the Environmental Defenders' Office of Western Australia. These advices confirm that the introduction of Container Deposit Legislation would not contravene the provisions of the *Mutual Recognition Act (1992)* or the Constitution and are included as appendices to this submission.

If legislation included restrictions on the manner in which beverages, products or containers are sold, then it may be considered to be a law expressly governing the sale of goods and therefore, be exempted from the mutual recognition principle by virtue of section 11 (2) of the Act.

Secondly, if the legislation (insofar as it seals with inspection or transportation) has an objective to protect the environment or control pollution, it may be considered to be exempted from the mutual recognition principle by virtue of sections 11 (3) and (4) of the Act.

Thirdly, a State could seek to have the legislation exempted from the operation of the Act either permanently (as is the case in South Australia) or temporarily. In light of the precedent set in South Australia, it is assumed that this would not be a difficult exercise.

11. Conclusion

The Boomerang Alliance supports the introduction of Extended Producer Responsibility mechanisms to deal with Australia's waste crisis, and supports the introduction of Container Deposit Legislation nationally as providing an extremely effective mechanism to drive high recovery rates for beverage containers.

Kerbside recycling collection puts the cost of recovery on local authorities and their rate payers, while CDL laws can use a range of requirements beyond the levying of the deposit to shift the financial burden to the producers who make the products, the retailers who sell them, and the people who buy and consume them. In addition, CDL can assist in making financially fragile kerbside services more economically viable.

The wide range of economic, environmental, community and health benefits offered by CDL make a strong case for its national implementation. These benefits can also be expected to receive strong public support, as is the case in South Australia.

The Boomerang Alliance would be happy to elaborate on the points raised in this submission and make a presentation to the Parliamentary Inquiry at the Committee's convenience.

12. Contact information

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