

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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Attachment A: Baker & McKenzie Advice: Mutual Recognition Constraints on Extended Producer Responsibility or Container Deposit Legislation

Attachment B: EDO WA Advice: Legal Impediments to Container Deposit Legislation

Attachment C: Financial Costs & Impacts of a National CDS System

Attachment D: Submission from Diageo Australia Ltd, "Inquiry into Container Deposits", August 2006

Attachment E: Coopers Brewery Ltd correspondence in support of Container Deposits, January 2005

Attachment F: SITA Potential GHG Abatement from Waste Management & Resource Recovery in Australia

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 people², 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 initiatives 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 \$3million 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

2. The State of Waste in Australia

Despite the rhetoric from environmental bureaucracies across Australia the volume of waste continues to grow largely unchecked. In 2002/03 it was estimated that the total amount of waste generated was around 32.3million tonnes per annum, optimistically only 46% was recovered for recycling⁴:

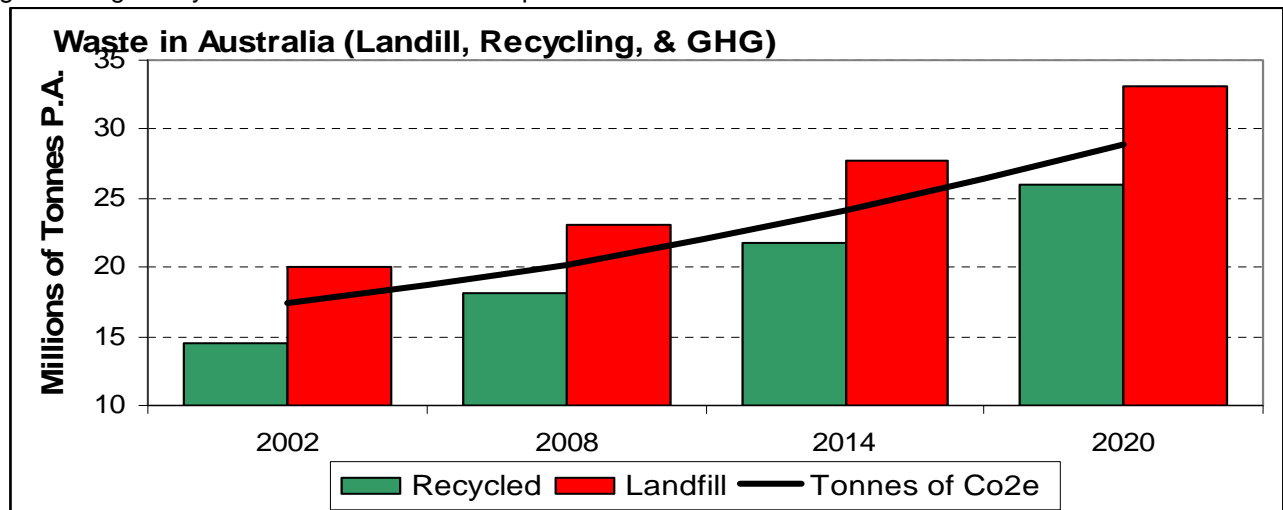
Table 1: Australia: Waste Generation, Disposal, & Recycling 2002/03

Material Type – Tonnes Per Annum	Generated	Recycled	Landfilled	% Recycled
Paper, Cardboard & Pulp	5,921,000	2,310,000	3,611,000	39%
Glass ⁵	893,000	340,000	553,000	38%
Adjusted Non-Ferrous ⁶	230,000	100,000	130,000	43%
Ferrous	3,670,000	2,790,000	880,000	76%
Plastic	1,690,000	190,000	1,500,000	11%
Garden Organics	3,800,000	1,550,000	2,250,000	41%
Food and other organics	3,200,000	310,000	2,890,000	10%
Wood/Timber	2,070,000	440,000	1,630,000	21%
Soil, Rubble, and Clean Excavated Material	3,840,000	1,390,000	2,450,000	36%
Concrete, bricks and asphalt	6,780,000	4,810,000	1,970,000	71%
Other recyclables (inc Textiles)	980,000	700,000	280,000	71%
Other (waste)	250,000	-	250,000	
Totals	33,324,000	14,930,000	18,394,000	45%

It should also be noted that they are significantly understated because:

- WA data only reflect Perth only, there is no data for Tasmania or the Northern Territory⁷;
- The data source is some 6 years old.⁸

This indicates that waste generation in 2008 is around 41.3million t/p.a. Based on a national recycling rate of 45%, current volumes of waste to landfill would today be around 22.7million t/p.a. A forward projection of the figures shows that (without intervention) in 2020 Australia will be producing over 33million tonnes of landfilled generating nearly 29million tonnes of CO₂-e p.a.:



The combined cost of waste collection, recycling and disposal is estimated to be somewhere in the vicinity of \$2.68billion p.a.⁹ of which around \$750million p.a. is derived from the sale of recycle. However, our failure to recover valuable materials at the end of their life sees us squander some \$1.1billion in lost commodity values.

⁴ Figures provided by WISE derived from Hyder Consulting 2006, "Waste and Recycling in Australia"

⁵ Adjusted to reflect more recent estimates by the National packaging Covenant Council

⁶ WISE adjusted non-ferrous to reflect NolanITU data, 2004, 'GRL National Benefits of Implementation of UR-3R Process® - A Triple Bottom Line Assessment'.

⁷ This means that the data is underestimated to represent some 3.6% of the population

⁸ RIS on the Revised National Packaging Covenant project waste generation grows at a similar rate to increases in GDP. DFAT: from 2002-2008 GDP grew by 19.7%.

⁹ Productivity Commission 2006 Waste Enquiry

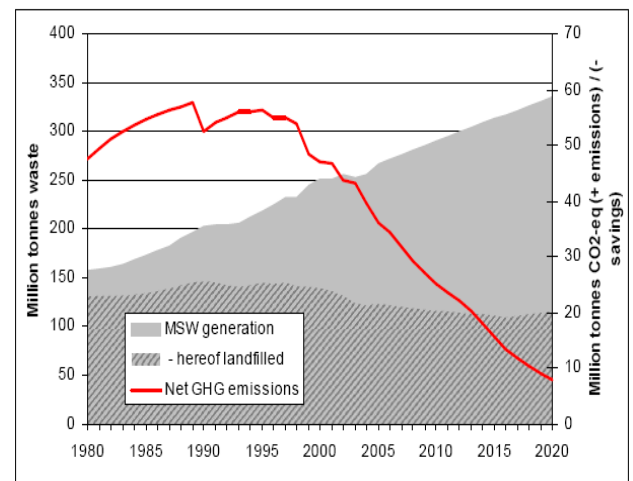
Material Type	Tonnes Per Annum		Recycling Rate	Annual Commodity Value	
	Recycled	Landfilled		Recyclate Sales	Lost to Landfill
Paper & Cardboard	2,310,000	2,690,000	46%	\$161,700,000	\$188,300,000
Glass	370,000	500,000	43%	\$26,640,000	\$36,000,000
Non-Ferrous	100,000	130,000	43%	\$150,000,000	\$195,000,000
Ferrous	2,790,000	880,000	76%	\$209,250,000	\$66,000,000
Plastic	190,000	1,500,000	11%	\$57,000,000	\$450,000,000
Garden Organics	1,550,000	2,250,000	41%	\$31,000,000	\$45,000,000
Food and other organics	310,000	2,890,000	10%	\$6,200,000	\$57,800,000
Wood/Timber	440,000	1,630,000	21%	\$8,800,000	\$32,600,000
Soil, Rubble, Clean Excavation	1,390,000	2,450,000	36%	\$20,850,000	\$36,750,000
Concrete, bricks and asphalt	4,810,000	1,970,000	71%	\$72,150,000	\$29,550,000
Other recyclables (inc Textiles)	700,000	280,000	71%	\$7,000,000	\$2,800,000
Other (waste)	-	250,000	0%		
Totals	14,960,000	17,420,000	46%	\$750,590,000	\$1,139,800,000

The environmental impacts for failing to recover even these most basic of materials are substantial. If Australia recovered even the most basic everyday materials like paper, cardboard, metals, plastic and glass we would save an estimated:

- 7.6million tonnes of CO2e p.a. (about the same as switching 1.26million Australian homes to 100% renewable energy);
- 173 gegalitres of water per annum (enough to permanently supply some 514,000 Australian homes with water); and
- Improved air quality in the vicinity of 19.9billion units of Smog Precursors (gC2H4-e) (similar to permanently removing 4.6million cars off Australian roads).

While Australia has been twiddling its thumbs over the past decade, Europe has been actively pursuing an ongoing reform agenda, and in its carbon constrained economy the waste sector is starting to show some impressive results. The graph to the right illustrates.

EU27 – MSW Landfill & GHG emissions



Policy Priorities:

There are three obvious areas of priority for the development of government policy on waste:

- Mandatory capture of methane from landfill and generation of renewable energy from 50% of same, with policies to reduce the amount of organics entering landfill (and to be used for higher value purposes than methane generation);
- Institute uniform levies and charges on waste and allocate a substantial proportion of same towards the development of collection and reprocessing infrastructure. Local government in particular needs to receive rebates at a rate of at least 150% of any charges to reflect their already substantial investment.
- Development of rigorous product stewardship and EPR schemes that will deliver at least 75% resource recovery from wastes that are problematic in their disposal or reflect high embodied energy being;
 - Packaging Waste – particularly bottles and cans (will require regulatory action);
 - Paper and cardboard – development of a voluntary scheme similar to the Publishers National Environment Bureau scheme could achieve 75%+ recovery rates;
 - E-Waste – governments need to support the voluntary schemes for e-waste proposed by organisations like Product Stewardship Australia;
 - Tyres – governments need to support and implement the tyre industry’s scheme.

For the last 10 years the Federal Government has become a major barrier stopping Australia from increasing resource recovery, this federal Senate Enquiry is an opportunity to correct this tragedy.

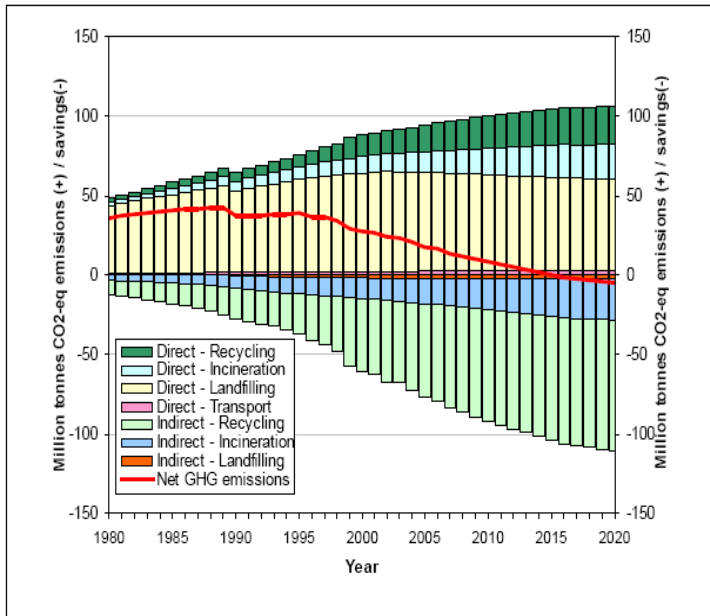
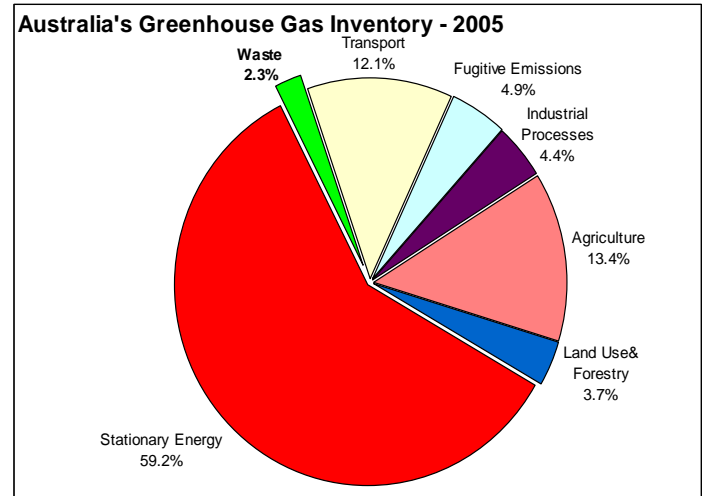
Greenhouse Abatement: An Opportunity not to be Wasted:

Last year, SITA Environmental Solutions (SITA) commissioned leading research¹⁰ that demonstrated while the waste sector contributed just 2.3% of Australia's Greenhouse Gas Emissions; it could readily deliver a 6-7% reduction through strategies to both mitigate direct solid waste emissions and the capture of embodied energy in end of life materials. Perhaps more importantly this reduction can be achieved relatively quickly and be significantly advanced while National Emissions Trading Schemes.

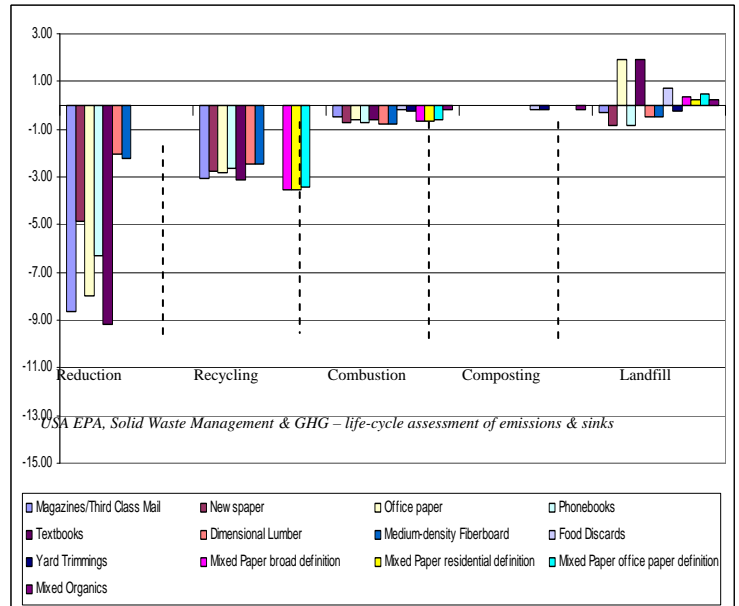
Taking a position of corporate leadership, SITA has developed a road map to deliver this vital outcome. Subsequently both the waste management industry and environment groups support the plan.

The waste management and resource recovery sectors, now stand ready to become the early adopter to tackle climate change accepting its liability and standing committed to not only move to a position of carbon neutrality but to in fact become 100% carbon negative, that is to not only to completely abate their own carbon footprint but to also deliver further abatement to deliver a 5% reduction in Australia's national greenhouse gas inventory. This represents the single greatest step in our efforts to tackle climate change to date.

These calculations are consistent with similar research conducted in the U.S.A and are reflective of the experience to date across the European Union:



EU-15 GHG Emissions from MSW



USA EPA, Solid Waste Management - LCA of Emissions & Sinks

Following a comprehensive review of SITA's research and plan, the Boomerang Alliance are joining with SITA to develop a detailed road map towards delivering this strategy. We are inviting all companies working in the field of waste management and resource recovery to sign onto our program and challenge all levels of government (federal, state and territory, and local government) to throw the full weight of its resources behind this position. To this end we invite interested Senators and political parties to express their interest in assisting us to develop this vital piece of policy development.

¹⁰ "Potential for Greenhouse Gas Abatement from Waste Management and Resource Recovery" Warnken ISE March 2007

3. Extended Producer Responsibility

Essentially, EPR means producers' responsibility for their products is extended to the post-consumer stage. In other words, under EPR, a company must be concerned not only with making the product and how it functions, but also with what will become of the product at the end of its useful life. In the case of consumer goods, this principle shifts responsibility for recycling and waste disposal from local government to private industry and onto their customers, thereby internalizing the costs of waste management into product prices. Under such a scheme, citizens pay for waste management as consumers when purchasing products, rather than as homeowners through local taxes. This more effectively passes on the cost of waste management so people pay based on their actual consumption, with more frugal purchasers making savings by creating less waste. EPR programs typically are aimed at increasing recycling and often contain mandated recycling targets.

While EPR is intended to reduce the amount of materials going to landfill, it is also aimed "upstream" – at every stage from product design to material selection. Its underlying theory is that if producers must pay for waste, they will have an incentive to make products that are less wasteful. EPR provides the missing link between product design and materials reuse and recycling – a link that is vital in making recycling efficient and economic. The movement toward designing for disassembly, developing reverse logistical systems, and 'de-manufacturing' are strategies industry has used in response to the new incentives posed by EPR.

EPR can be applied to all waste streams as it is based on a preventative approach to waste management rather than dealing with 'post consumer stage' issues. The physical, financial and environmental responsibility of a product's life cycle is therefore passed onto the producer.

EPR was first (formally) initiated in Germany under its Packaging Ordinance of 1991, though individual schemes such as Container Deposit Systems date back as early as the 1970's. This, in effect, shifted responsibility for packaging waste from local government to private industry. The approach has been endorsed by the European Union (EU) and is being implemented in EU member countries for packaging and other products. The idea has subsequently spread around the world, including Asia, where Japan passed EPR legislation for packaging in 1995. The Japanese government has been funding studies to document EPR programs in the Organisation of Economic Cooperation and Development (OECD). It has found that 18 OECD countries have EPR policies.

There is no "universal model" for EPR programs. They vary by country and by the products being targeted. Germany shifted full responsibility for packaging waste to industry, whereas in Japan and France, government and private industry share this responsibility. There is great variation in the level of recycling mandates and in the definitions of recycling and "producer". EPR is most often applied to packaging, but it is also being employed for products such as end-of-life vehicles, electric and electronic goods, paints, batteries, and graphic papers.

PRODUCTS covered by EPR schemes INTERNATIONALLY include:

- | | | | |
|-------------------------|---------------|---------------------------|---------------------------------|
| • Waste Products | • Consumables | • Refrigerators | • Paints |
| • Waste Oils | • Vehicles | • Computers | • Aerosols |
| • Hazardous
Material | • Tyres | • Electronic
Equipment | • Printer Cartridges &
Toner |
| • Packaging | • Carpet | • Washers/Driers | • Newspapers |
| • Bio-Waste | • Batteries | • Mobile Phones | • Bottles & Cans |

EPR legislation requires the manufacturing sector to look towards truly sustainable solutions in regards to product manufacturing, waste minimisation and life cycle management. Change would therefore be quantifiable rather than a 'token gesture'.

Former US President Bill Clinton created the President's Council on Sustainable Development (PCSD) in 1993 to follow up the Rio Conference goals on sustainability. In its February 1996 report, the Council fully supported EPR, and organised a follow-up workshop on EPR at the White House Conference Centre in October 1996. The workshop was intended to showcase U.S. company initiatives that involve EPR principles. Following are some of the highlights from the presentations at the workshop:

- **Comprehensive lifecycle approach to products.** "Asset management", a corporate-wide program at Xerox, has changed materials selection and product design. Xerox's comprehensive program involves product take-back, reverse logistics, design for disassembly as well as reuse, remanufacturing, and recycling. The company has environmental guidelines for the preferred management of the products it takes back.
- **Companies extending their responsibility to post-consumer products.** Through a national take-back program for spent Nickel-Cadmium (Ni-Cd or NiCad) batteries, launched by manufacturers of batteries and the products that contain them, industry is paying for collection and recycling. The program is operated by the Rechargeable Battery Recycling Corporation (RBRC) a non-profit company set up by industry. Another product take-back program is run by DuPont which is voluntarily taking back plastic (PET) films which the company chemically reprocesses into feedstock for new PET.

Historically, packaging generally, and beverage containers specifically are the most common target to start the shift towards the EPR approach. The rationale for this is that while packaging may not be the most hazardous form of waste, it is certainly the most pervasive.

An EPR scheme on packaging also creates the infrastructure for other waste reduction programs. Because packaging is the most pervasive and widespread "waste of concern" it can provide the "critical mass" to develop recycling centres and new collection infrastructure. This infrastructure in turn allows governments to introduce cost-effective schemes for electronics, batteries, paint and chemical residuals, mobile phones etc. Our research indicates that if a national container deposit system was introduced over 2,000 convenience collection points would be established to collect common recyclables and a further 400 large scale "Drive Through Recycling Centres" to accept all forms of recyclables and problem wastes would be established at no cost to all 3 tiers of government. This level of infrastructure and investment would lead to the single largest improvement in recycling in Australia

The community and government have increasingly signalled that they regard industry as mainly responsible for packaging waste and it is reasonable to assume that this attitude extends across a range of problem wastes like tyres, e-waste etc.. Yet ratepayers continue to bear the full costs of same. The national cost to operate MSW waste and landfilling is estimated to be \$682million p.a.¹¹; kerbside recycling (nett of the sale of recycle) is estimated to cost \$374million¹² p.a to local government and the estimated costs for state and local government to address litter are estimated at over \$200million p.a.¹³. Overall the public purse is bearing a cost of some \$1.256billion p.a.

Financial markets, banks, and insurers are increasingly recognising that poor environmental management comes at a monetary cost to a business. Advances in the concept of environmental risk management have highlighted that managers who handle key environmental issues poorly can financially expose their businesses, the broader economy and the community. BHP Billiton may be resurgent in the market now, but in its financial dark days of the mid-1990s the environmental disaster around its Ok Tedi gold mine in Papua New Guinea contributed to massive destruction of shareholder and societal value.

Major changes in policy are required in order to achieve sustainable practices in resource management. The Boomerang Alliance considers it necessary that producers accept financial responsibility for waste products. The use of EPR to achieve this will provide business with an economic incentive for the design and manufacture of more environmentally friendly products that do not present significant waste management problems at the end of their useful life.

¹¹ Calculation: 6,202,000 million tonnes of MSW waste landfilled p.a. (Source Hyder Consulting) X cost of \$110 per tonne (source productivity Commission) = \$682,220,000 (excluding landfill levies)

¹² NEPC Annual Report 2006-07 NEPM for Used Packaging Materials

¹³ Hyder Consulting

4. Successful EPR Implementation

Many countries have adopted EPR including Canada, USA, Japan, Taiwan, Israel, Belgium, Korea and the Netherlands. But the best results from EPR legislation have undoubtedly been achieved in Europe in Germany, Denmark, Switzerland and Sweden.

The three main industry sectors that are utilising EPR are:

- Packaging and manufacturing
- Electronic and electrical waste
- Vehicle production and take-back

In Australia, EPR schemes are becoming common. The South Australian CDL program has enjoyed outstanding success, reducing litter by up to 50%. National programs to recover newsprint (Publishers National Environment Bureau voluntary scheme), tyres, used agricultural and veterinary chemical containers, and waste oil have made significant gains.

NSW introduced widespread EPR legislation in 2001 and is moving into the implementation phase. Last year Western Australia also committed to EPR having introduced it into legislation.

Packaging and Manufacturing

As EPR policies for packaging began to spread throughout Europe, the European Union issued its own Packaging Directive in 1994 to harmonise policies in its member countries.

This directive embraced the concept of EPR and mandated recycling targets for packaging waste of 25 to 45 per cent, with a minimum 15 per cent recycling rate for each material.

As a result, all 15 member countries have EPR systems for packaging, although the policy is taking different forms in different countries. Many of these systems are already in operation, while others are still under development. Japan's law requiring EPR for packaging was passed in 1995 and went into effect in 1997. 28 countries now have packaging take-back laws.

The variations in EPR programs for packaging are substantial, with major differences relating to:

- allocation of responsibility between government and industry actors in the packaging chain;
- level of mandated recycling rates;
- time frame for achieving mandated recycling rates;
- what counts as recycling;
- the packaging materials included in the program;
- types of collection systems used;
- use of deposit/refund mechanisms; and
- implementation through third-party organisations.

The most common form of EPR on packaging is CDL. Almost uniformly, implementing CDL schemes increases recovery rates dramatically and halves litter levels. Implementation of CDL in California has proven that CDL complements recycling, rather than damaging kerbside as the bottling industry claims.

Electric and Electronic Equipment

Electric and electronic equipment (e waste) is a major focus of EPR policies around the world. In Europe, the pattern of policy development has been similar to that for packaging – a number of countries have mandated EPR for these products and now the EU is developing its own directive in an attempt to harmonise policies. EPR legislation for e waste has already been adopted in Switzerland, the Netherlands, Italy, and Norway, and is close to adoption in many other countries. The EU's 1998 draft directive is sweeping in scope, covering a very broad range of electric and electronic products such as household appliances, communications and lighting equipment, clocks, toys and electric shavers.

Manufacturers and importers would be responsible for taking these products back and for meeting a range of collection and reuse/recycling targets (e.g. 80 to 90 per cent of items such as large household appliances and personal computers would have to be collected, and 70 to 90 per cent of that amount would have to be reused/recycled). Take-back would be free to households, with the costs built into the price of new products.

Waste-to-energy recovery would not count toward the targets and phase-out of heavy metals in the equipment would be required.

Unlike the European countries, which preclude end-user fees for take-back, Japan is permitting industry to cover its actual costs by charging end users for the service. Japan's Ministry of International Trade and Industry (MITI) estimates the fees as follows: \$37 per refrigerator; \$30 per air conditioner; \$22 per TV; and \$18 per washing machine. Japanese manufacturers are running pilot collection and recycling projects in anticipation of the EPR mandate.

In the US, the Resource Conservation and Recovery Act has been in operation since 1976. The provisions of the RCRA Act include wide exceptions due to the classification of electronic waste.¹⁴ The rules regarding the definition and exceptions to waste being 'hazardous' will determine the operation of the regulation. E waste is also subject however to State regulation in which some states such as Massachusetts and Florida, have taken steps to streamline hazardous waste regulations for CRTs, resulting in higher levels of recycling. On the other hand, California considers CRTs to be spent materials and regulates all CRT as hazardous waste, i.e. they are banned from landfills.¹⁵

Application of EPR to the 'e waste' sector has raised issues different from those pertaining to packaging take-back. Manufacturers are generally willing to take back products that were designed for recycling but have strongly resisted this responsibility for "existing" products – those designed prior to the implementation of EPR policies. There is also the problem of assigning responsibility for "orphan" products that outlast their manufacturer, such as a TV discarded 20 years after the date of sale, when the "producer" is no longer in business.

Vehicles and Components

Unlike packaging and electric and electronic equipment, vehicles are among the most highly recycled products in the world. Vehicles consist of about 75 per cent metal by weight, mostly iron and steel, which have always been recycled in industrialised countries.

The target for EPR is the remaining 25 percent: the mixed materials (plastic, rubber, glass, textiles, fluids, and paint) that are often contaminated with hazardous substances such as lead, cadmium, waste oil, and PCBs. In some countries, these materials are designated a hazardous waste. EPR for vehicles aims to keep this waste out of landfills and reduce the number of vehicles disposed of illegally.

The EU directive on end-of-life vehicles (ELVs) is still a work in progress. The current draft holds manufacturers responsible for take-back and mandates recycling rates of 80 and 85 per cent, respectively, for vehicles that go on the market after 2005 and 2015. Recovery targets (which allow waste-to-energy) are 85 per cent for 2005 and 95 per cent for 2015. To avoid paying fees, vehicle owners would have to obtain a "certificate of deregistration" signifying that the vehicle had been brought to an authorised recycling facility.

A number of countries with EPR policies for vehicles already in place have recycling and recovery targets similar to those under consideration by the EU. Both France and Germany have negotiated ELV take-back agreements with industry, and Germany passed legislation in 1998 to facilitate enforcement. In Sweden, 1996 legislation requiring EPR for vehicles supplements its 1975 vehicle scrapping law (which focused on reducing litter caused by abandoned vehicles).

In Japan, MITI has been developing EPR legislation for ELVs that sets recycling/recovery goals similar to those of the EU and individual European countries. A common target in most programs is a 95 per cent recovery rate for 2015, meaning that only 5 per cent of ELVs would be permitted in landfills by that date.

In fact, vehicles are an excellent example of how Extended Producer Responsibility can have an impact on product design. Even in the United States, where no EPR policies are in place for ELVs, marketing goals and the desire to pre-empt EPR legislation can lead to design innovations. For example, members of the voluntary Vehicle Recycling Partnership (which includes Chrysler, Ford, and General Motors) are working on design changes that would make it easier to recycle discarded vehicles.

¹⁴ EPA Office of Solid Waste, "EPA's Regulatory Program for Waste "E-Waste"

¹⁵ US EPA, Regulations and Standards

5. Priorities for EPR Action

Boomerang Alliance has 5 priority areas to develop national schemes to improve recycling and protect our environment: Packaging, Computers, TV's, Mobile Phones, Tyres and Lead Acid Batteries.

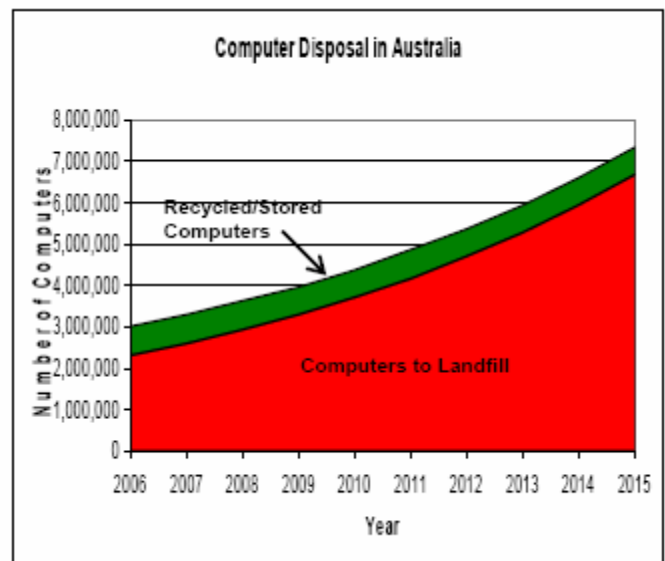
Computers, TV's and Tyres have proposals for voluntary schemes (at various levels of completion) that require little more than an agreement at the EPHC and development of a NEPM by the Federal government. We congratulate these industry sectors for their current progress and sympathise with these sectors for the lack of concrete government regulatory action.

Boomerang Alliance believe that the major priority for National EPR action is packaging, given that we have had a voluntary scheme, the controversial National Packaging Covenant, that has been in place for 8 years and produced little if any improvement in packaging recycling rates. the solution is the introduction of a National Container Deposit system such as that proposed by Senator Steven Fielding's Drink Container Recycling Bill. Container Deposits are discussed in their own section later in this submission.

Mobile Phones and Lead Acid Batteries should be added to the current EPHC priority list for immediate development of a scheme to tackle their recovery.

E-Waste: Computers

Australia is among the top ten countries in the world for per capita computer use.¹⁶ In 2006, it was estimated that there were already more than 1 computer per capita in the marketplace, with 24 million computers in households and offices across Australia.¹⁷ In addition, over 4 million computers are entering the Australian market each year, with the Rudd Government's pledge for an education revolution potentially escalating annual purchases to over 7million units per annum by 2011. The Australian computer market is dominated by a small number of subsidiaries of international companies. The top six companies in 2006 (HP, Dell, Acer, IBM, Toshiba and Apple) represented over 68% of the market.¹⁸ However, non-brand or 'white box' computers, which are assembled from imported generic parts, represent a sizeable portion of the Australian market. Apart from some computer assembly, there is no computer manufacturing in Australia.



While currently just 1.3% of annual computers sold are recycled each year, there are growing stockpiles of computers in storage to avoid landfilling. A Meinhardt Infrastructure and Environment report for Multimedia Victoria, estimates that when these stockpiles are ultimately disposed of, recycling rates of around 22% of annual consumption would be achieved. The remaining 78% are sent to landfill. However the rapid rates of increasing consumption means that without intervention the actual rate of recycling is likely to plummet. If recycling remains static (and there is no instrument in place to suggest it will increase) recycling rates will be an appalling 9.4% by 2015.

The lack of collection and recycling facilities for e-waste is resulting in an increasing number of households, waste managers and small businesses tending to store end-of-life computers for extended periods.¹⁹ This creates a growing financial liability to deal with orphaned (or historic) waste computers.

¹⁶ Department of Communications, Information Technology and the Arts, "Advancing Australia – highlights of the Information Economy Progress Report", 2002.

¹⁷ Australian Green House Office, MEPS Program, "Computers and Monitors: The Case for Minimum Energy Performance Standards." October 2007. Computer volumes included office and domestic stock, personal computers/desktops, integrated computers and notebooks (including laptops and tablets)

¹⁸ Australian Greenhouse Office (2007)

¹⁹ IPSOS 2005

The main peak industry body representing computer producers and importers is the Australian Information Industry Association (AIIA). AIIA has been engaged by governments on product stewardship for computers since 2001. During that time, AIIA have put up three proposals to the EPHC to deal with end of life computers. The first two were largely conceptual and did not adequately cover computers already in the market (historic waste). They also placed considerable responsibility for the functioning and success of the schemes onto other stakeholders (local government, waste facility operators) and required extensive government regulation to work. These proposals were not supported by federal, state or territory governments.

In November 2006, EPHC noted the extensive efforts of the AIIA to develop a voluntary scheme, but that these efforts had not been supported by a majority of the sector and that therefore a new approach was needed to manage end of life computers. Ministers agreed to explore regulatory options, with a first step to include the development of a regulatory impact statement analysing the problem with end of life computers and providing a cost benefit analysis of potential options for solving this problem. Used computers and management of end-of-life resources has pervaded the national agenda since 1998. The recurring inability of the computer industry to develop and implement a viable voluntary co-regulatory scheme reinforces the need for Federal Government action in implementing a recovery scheme, particularly were the Australian Government has already used an ADF approach with the *Used Oil program*.

The lack of forthcoming regulation has seen Australia considerably lag behind other developed countries in managing end-of-life computers. The European Union laws passed early in 2003 requiring manufacturers of electronic goods to take back old equipment and implement recycling schemes by 2005. From July 2006, the use of heavy metals, such as lead, has been banned in the EU in production of all electronics goods, including computers and monitors. The US has also passed legislation addressing E-waste legislation, including several state laws banning the disposal of cathode ray tube (CRT) monitors to landfill. With the exception of the ACT having banned the disposal of CRT monitors to landfill by business and government, voluntary schemes have been favoured as the primary action to address the national computer waste problem in Australia.

E-Waste: TV's

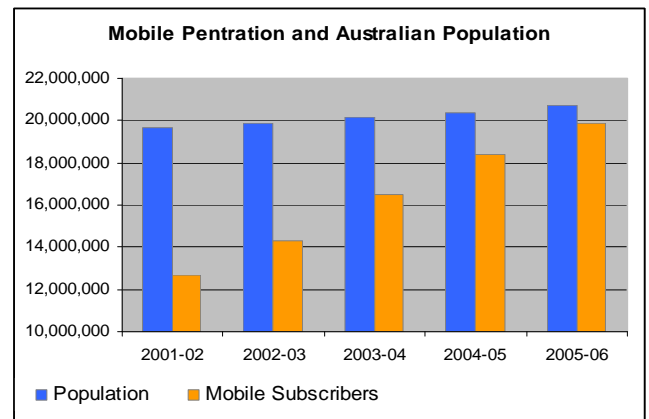
The television industry in Australia is crying out for an EPR scheme with the entire industry having backed the proposed Product Stewardship Australia scheme, yet the Department of Environment and Heritage seems incapable of advancing this program and progress has stalled under successive governments.

With huge public support and complete industry backing, the only structural barrier to progress seems to be passing the office of Best Practice Regulation's (OBPR) guidelines. Following the last EPHC meeting a number of ministers and senior departmental staff have reported that the OBPR guidelines will make it practically impossible to move forward any scheme to improve product recycling. Clearly this was not the intent of the approach endorsed by both the Federal Liberal Government of the time or state labor governments. We would urge the Standing Committee to investigate how a simple, effective scheme which is unanimously supported can become stymied by the federal bureaucracy and narrow economic analysis.

E-Waste: Mobile Handsets and Accessories

Australia's mobile telecommunications industry has been a strong economic performer over recent years, and its ongoing innovation provides a platform for continued growth. The industry has grown at an average annualised rate of 5.8% between 2001-02 and 2006-07.²⁰ The number of subscribers has increased from fewer than 7 million in 1998-99, to 20 million in 2005-06. This rate of mobile penetration in the market represents a percentage increase from just above 30% to almost 100% during this period.²¹

According to a recent report²² undertaken on the state of the mobile industry, the mobile telephone has experienced spectacular take up and growth worldwide over the past two decades and has significantly impacted upon



²⁰ Access Economics, *Australian Mobile Telecommunications Industry: Economic Significance & State of the Industry*, June 2007

²¹ Access Economics, *Australian Mobile Telecommunications Industry: Economic Significance & State of the Industry*, June 2007

²² Access Economics, *State of the Mobile Telecommunications Industry*, July 2007

businesses and the way people live. In Australia, the increase in mobile penetration has occurred in tandem with substantial declines in the price of using mobile telecommunications.

Unlike the TV and computer industries, the mobile phone industry, represented by AMTA has not been under directions from federal and state governments to devise a national co-regulated product stewardship scheme. This is attributed to the voluntary scheme commenced by AMTA in 1998 to establish collection infrastructure and subsidise a back-end reprocessors to dismantle and recycle handsets and associated equipment, raising funds for the scheme by charging \$0.42 per phone sold. The mobile phone industry is the only electrical industry sector with a product stewardship scheme. AMTA runs the scheme, which covers handsets, batteries and accessories. It was initiated nationally in 1999 after being trialled in NSW in 1998. The majority of mobile phone brand owners and service providers and a significant number of mobile phone retailers are in the scheme.

Although about 14 million mobile phones have reached end of life in Australia, the number going to landfill is unknown. Some anecdotal evidence has indicated that a large number is being stored in offices and houses (that will later be landfilled) and an unknown number has been exported for reuse in developing countries. This is far from a satisfactory justification for the current schemes' performance.

Some of the components in mobile phones and batteries are made from non-renewable resources. Heavy metals in mobile phones and batteries, such as nickel, copper and cadmium, may have an adverse impact on the environment if disposed of to landfills or energy-from waste facilities. Mixed with other wastes, mobile phones could undermine the potential to recover useful materials from that waste stream.

When the five year initial phase of the scheme failed to achieve more than a token amount of recycling, AMTA mobilised the accumulated levy funds and re-badged the scheme as "MobileMuster" in 2005. At this time, the industry set themselves some very modest targets for reducing handsets going to landfill and increasing the amounts being recycled each year. Quarterly reports of results were promised and a "National Public Commitment Statement" was to be finalised with the Environment Protection and Heritage Council (EPHC).

Public commitment, promised quarterly reports, and independent audits have not materialised as no information has been made public beyond the selective use of statistics on the website. It is only through an Extended Producer Responsibility framework under the NSW government's waste legislation that the industry is required to report the results of its recycling program.

The mobile scheme is flawed in design having set its own recycling targets based, not on annual sales of mobile phones (8 million) or accumulated sales to date (40 million), but on percentage increases in the amounts of phones collected each year for recycling. These amounts, both historically and currently, are so small relative to sales, that reporting on a rate of increase is extremely misleading.

Reporting is also confused as the unit of measurement used for reporting purposes switches between tonnage and handset or battery units. If tonnage is used, it is evident that the amount collected in 2005-06 was less than in 2003-04. Mobile collections in 2006-07 are reported to have increased off the very low base of the previous year.

The Total Environment Centre conducted its own audit of retailer participation in MobileMuster in the City of Sydney in order to test industry claims about the increased awareness of, and opportunities for, mobile phone recycling. The study found that fewer than 20% of mobile phone retailers were actively participating in the scheme and of those:

- Only 29% displayed recycling information; and
- Only 38% had recycling bins on display in the store.²³

Failure to adequately implement the scheme for maximum uptake may be attributable to the poor performance; after 9 years of operation only 2.7million mobile units have been recycled.

The number of phones recycled as a percentage of the number of mobile phones sold is just 3-4%. This still leaves a huge number of mobile phones unaccounted for, despite the fact that the majority of the companies in the mobile phone industry are members of the scheme. This low recycling rate also means that millions of unwanted mobile phone handsets and batteries are accumulating annually and pose a considerable environmental threat if disposed of to landfill. While small in size, and therefore easy to throw in the bin, each

²³ Total Environment Centre, *Busted: The 'MobileMuster' Myth Exposed*, 2007

phone with accessories is a complex assembly of 48 different chemical elements including toxic heavy metals and brominated flame retardants and valuable metals, such as gold and copper.

The community sector is becoming frustrated by the lack of accountability being brought to bear on the mobile industry. The industry uses the propensity for people to store old mobile phones as an excuse for poor performance and low recycling targets. This is not justifiable when it is the same industry which is driving the rapid turnover of mobile phones by making current technology rapidly redundant. The current turnover rate for handsets is 18-24 months. The 'home storage' situation is only a temporary deferment of the issue and millions of mobiles will eventually be sent to landfill.

The current voluntary industry scheme has not provided audited data and estimates indicate that the volume handsets collected is very low. Knowledge of the scheme in the community is very low and the scheme lacks performance targets. Data collection and reporting are clearly inadequate. Failure of the scheme has resulted in materials stockpiled in the recovery process; a significant concern. Performance has been unsatisfactory and the scheme is not operating effectively indicating that much more is required to capture used mobile phones.

Government must initiate regulation to mandate EPR within the mobile phone industry to ensure that the responsibility is taken for proper recovery and recycling. The Boomerang Alliance advocates a government-regulated scheme which specifies ambitious targets with stated timelines, including a refundable customer deposit on each new phone.

A refundable deposit will engage consumers on producer responsibility schemes raise funds for recycling and can collect data on mobile phone use and recycling. The accumulated amount from the levy could also be used to buy back old phones on which no deposit has been paid creating an inclusive system of recovery.

Tyres

Used tyres present a significant waste problem, with resolution urgent after many years of efforts to encourage the tyre industry to take responsibility for its waste. To date action on this issue has involved the drafting of a Product Stewardship Agreement (PSA), National Environment Protection Measure (NEPM) and Regulatory Impact Statement (RIS). Action on used tyres is encouraged, and current drafts of the aforementioned mechanisms are considered reasonable, though they are yet to be implemented. Of concern is the voluntary nature of these schemes, and the lack of detail in the drafted versions. Improvements required for an effective scheme will involve consideration of the following issues:

(i) Lack of Regulatory Contingency if Targets Not Met

There is no guarantee that the Tyres Product Stewardship Agreement (TPSA) will deliver on its recovery targets despite the modelling undertaken by the tyre industry for the scheme. Regulatory contingency embedded in the NEPM is therefore critical to guarantee the environmental outcomes. Leaving governments to flounder in a policy void and scramble for a solution if the scheme fails to meet its targets or fails for some other reason is inappropriate and an abrogation of governmental responsibility to the community.

(ii) No Commitment to Permanent Tyre Recycling Market

The only reference to scheme duration specifies that the scheme will operate for 10 years. Arbitrarily ending the scheme after 10 years is an enormous gamble that the benefit payments for tyre derived product have served their purpose in creating a sustainable and permanent market for tyre recycling that guarantees an ongoing recovery rate of 90%. It would be far more prudent that the duration of the scheme be reviewed and its termination or extension is dependent on the ability of the tyre recycling market to withstand removal of the benefit payment.

(iii) Inadequate Arrangements for Stockpiles

There is no mention in the PSA or NEPM of how stockpiles of illegally dumped or landfilled tyres will be dealt with. This may cause two problems. Firstly, if significant stockpiles are accessed, particularly early on in the scheme, it is likely that there may not be sufficient funds accrued from the levy on new tyres to pay the benefit on tyre derived products. The second problem, is that without some means of accounting for the proportion of stockpiled versus new tyres, it is likely that collection rates will be distorted and will fail to reflect a true picture of the tyre recovery market. This will make it impossible to determine whether the scheme is achieving its targets and whether it is truly creating a permanent, sustainable tyre recycling market.

(iv) Lack of a Rationale for Benefit Payment Rates

As the Scheme is currently proposed, there is no explanation of the rationale behind the benefit payment. A rationale based on highest resource value and environmental benefit should be proposed, with reference to reuse being the highest form of recovery, followed by recycling and, lastly, waste to energy. Such a rationale should be backed up by data and opened for consultation. To properly reflect the accepted waste hierarchy, reuse should be added to the definitions and the description of recycling should not exclude retread tyres.

(v) **Lack of Benefit Payment for Re-Treaders**

Linked to the issue of a lack of rationale for benefit payments is the issue of the exclusion of retreads from the Scheme. There is inconsistency in the Scheme accepting reuse in structural engineering and export overseas and not accepting retreading. In both structural engineering and retreading, the life of whole tyres is extended, reducing the rate of generation of waste tyres. As such, the reuse of tyres is at the top of the waste hierarchy, under the banner of 'waste avoidance'.

In 2001, about 1 million passenger tyres and 450,000 truck tyres were retreaded annually. This represents a significant waste avoidance capacity. The fact that the retread industry has been declining over a number of years is even more reason to enable the benefit payment for this highly beneficial form of reuse.

Other issues with the Product Stewardship Agreement involve the determination of reporting requirements; it is suggested that jurisdictions, rather than the Tyre Product Stewardship Council (TPSC), reports on achievement of targets, and further, that TPSC Annual Reports be audited by an independent auditor. Another reporting provision that may improve the efficacy of the scheme is where jurisdictions should take account of the amount of non-participants and identify them publicly.

Additional considerations for the National Environment Protection Measure for used tyres will involve the requirement for regular reviews at times that they closely follow reviews of the PSA rather than an arbitrary stipulation for routine assessment. Producers should be required to keep records for 10 years, rather than 5, so that accurate data over the life of the Scheme can be accessed at its' end. Jurisdictions should be required to notify non-participants within 6 months of import; and be required to penalise them within 12 months of import. In addition, this will require jurisdictions to implement laws or other arrangements within 6 months of the PSA coming into force in order to administer the scheme.

The 'stop-loss' clause of the Regulatory Impact Statement should be amended, as in its' current form it will allow producers to simply discontinue the Scheme, particularly if there is no regulatory fall-back in the NEPM. Extraction costs and environmental impacts of raw materials should be included in the assessment of the impacts of the failure to recycle waste tyres; and included as a benefit in the reuse and recycling of waste tyres. Finally, difficulties with landfill remediation should also be included in impacts of unrecovered tyres.

Lead Acid Batteries

The use of lead acid batteries, such as car batteries has the potential to contaminate resource streams where they are inappropriately disposed of. Lead is toxic to humans, animals, plants and micro-organisms at low exposure levels.²⁴ Recycling of batteries for reuse requires only 40% of the energy associated with primary smelting. This action will also avoid the hazardous impacts that even a small amount of leakage will cause on the community, recoverable resources, and the environment.

Studies by Total Environment Centre highlighted the fact that just one used lead acid battery placed in a residential garbage bin can contaminate as much as 25 tonnes of MSW and prevent the recovery of the organic resources within this waste (estimated at 25 per cent of the waste inputs, or 6.5 tonnes) because of lead levels in excess of 500 mg/kg. The contaminated product would have to be landfilled because of elevated lead content, contributing to an associated greenhouse gas liability from the decomposition of degradable organic carbon into landfill gas.²⁵

Research undertaken on the impact of used lead acid batteries has emphasized the negative potential for the disruption of resource recovery from Municipal Solid Waste.²⁶ In order to prevent emissions of lead into the environment, used lead acid batteries are classified as hazardous waste under the federal Hazardous Waste

²⁴ TEC, "An Extended Producer Responsibility Rationale for Used Lead Acid Batteries", October 2007

²⁵ TEC, "An Extended Producer Responsibility Rationale for Used Lead Acid Batteries", October 2007

²⁶ TEC, "An Extended Producer Responsibility Rationale for Used Lead Acid Batteries", October 2007

(Regulation of Exports and Imports) Act 1989 and need a permit for export or import.²⁷ The need to recycle lead acid batteries is well recognised in Australia, with several initiatives established and systems in place for the collection and transport of Used lead acid batteries.

Many automotive service stations and battery retailers will accept batteries for recycling. Furthermore, in New South Wales, WSN Environmental Solutions will accept used lead acid batteries to be dropped off at any of their waste recovery centres for recycling. A similar situation exists in Queensland where Brisbane City Council will accept used lead acid batteries at their waste transfer stations. In Victoria the RACV offers an annual collection of used car batteries. As an incentive, for every car battery collected, the RACV donates \$1 to The Royal Children's Hospital. Batteries can also be taken to many transfer stations in that State.

However, in spite of these initiatives, it is clear that used lead acid batteries are being disposed of inappropriately through kerbside collections of household waste. Even at high recycling rates, the potential negative impact of used lead acid batteries to disrupt and contaminate resource recovery streams provides a compelling case for policy intervention in the form of an EPR scheme for used lead acid batteries.

The financial impacts of used lead acid batteries in household garbage collections (MSW) are primarily twofold. Firstly there is the cost of rigorous sorting of MSW prior to processing; and secondly there is the cost of residual lead contamination from split casings and its deleterious impact on opportunities to use compost.

Action on used lead acid batteries requires greater efforts by industry, government and the consumer. An EPR scheme for used lead acid batteries must charge a significant deposit per battery sold without the return of the old battery. Such a scheme would need to be national in operation, requiring federal government involvement. However, if action on a national level is not forthcoming, then progressive jurisdictions should introduce state based schemes. Regardless of the form, the scheme requires review at regular intervals, and must provide for annual collection of data on material flows and occurrence of used lead acid batteries in municipal and C & I waste collections.

²⁷ For more information on used lead acid batteries visit <http://www.deh.gov.au/settlements/publications/chemicals/hazardous-waste/lead-acid-fs.html>.

6. The National Packaging Covenant

Packaging: A National Waste Disaster

Across Australia governments are facing spiralling costs to address increasing rates of packaging consumption and waste (including away from home); exacerbated by market failure to recognise the environmental costs. Some states are also experiencing the systematic collapse of parts of their recycling industry.

Major environmental and economic problems are attributable to packaging waste:

- The significant water and energy resources used and greenhouse gas emissions by Australia to produce over 4.3 million tonnes of packaging (some excessive; most virgin, unrecycled material) each year.
- Recovery of post consumer packaging for recycling has stagnated at 43% nationally.²⁸
- No reliable and sustainable infrastructure to recover the approx. 50% of beverage packaging consumed away from home.
- Australian ratepayers pay a hefty \$374 million p.a., for kerbside recycling services.²⁹
- Collecting and disposing of litter is very expensive, the recent Regulatory Impact Statement for plastic bags estimates the national costs of managing litter at \$200million p.a.).³⁰
- Over 10% of all recyclable materials collected are landfilled due to contamination.³¹

The public is calling for more action – a Newspoll survey conducted in December 2004 showed 91% of respondents thought governments should make those responsible for packaging waste deal with the mess.³² Boomerang Alliance has studied many container deposit systems around the world. Based on the success of container deposit systems in South Australia and internationally, the Boomerang Alliance have created models to assess the effectiveness of a National Container Deposit System in Australia.³³ The benefits are substantial. We believe a container deposit system will:

- Reduce the volume of litter in our parks, beaches and roadsides by 12-15%
- Increase Australia's recycling by over 630,000 tonnes p.a.
- Achieve a 6% diversion of all MSW waste away from landfill
- Reduce Australia's greenhouse gas emissions by over 1.3 million tonnes of CO₂e per year (equivalent to 197,000 homes switching to 100% renewable energy)
- Save enough water to permanently supply over 24,000 Australian homes
- Deliver the same level of Australian air quality improvements as taking 140,000 cars off the road
- Provide 250,000+ Australian homes with access to recycling services for the first time
- Save rate payers over \$59.8million per annum
- Significantly reduce the number of turtles, lizards, seals and birds killed by litter across Australia
- Create at least 1,000 new jobs, mostly in rural and regional Australia

Importantly our investigation highlights that container deposits can work with and improve the economics of kerbside, reducing the overall cost by at least \$59 million p.a. Further, Boomerang Alliance had no difficulty finding industry operators who were prepared to provide 100% of the capital investment to build a collection system, meaning that the system will be delivered with no infrastructure investment required *by government*.

Overall packaging recycling rates will be dramatically improved. The following compares current national recycling rates and revised recycling rates with a container deposit system against the packaging targets for 2010 imposed by the Environment Protection & Heritage Council.

²⁸ This figure appropriately omits office paper and newsprint

²⁹ Calculated from NEPM Used Packaging Data 2005-06

³⁰ KAB: 2006 National Litter Index

³¹ e.g. in WA over 20% or 25,985 tonnes of the material recovered via MSW recycling is lost through contamination.

³² Newspoll 2004

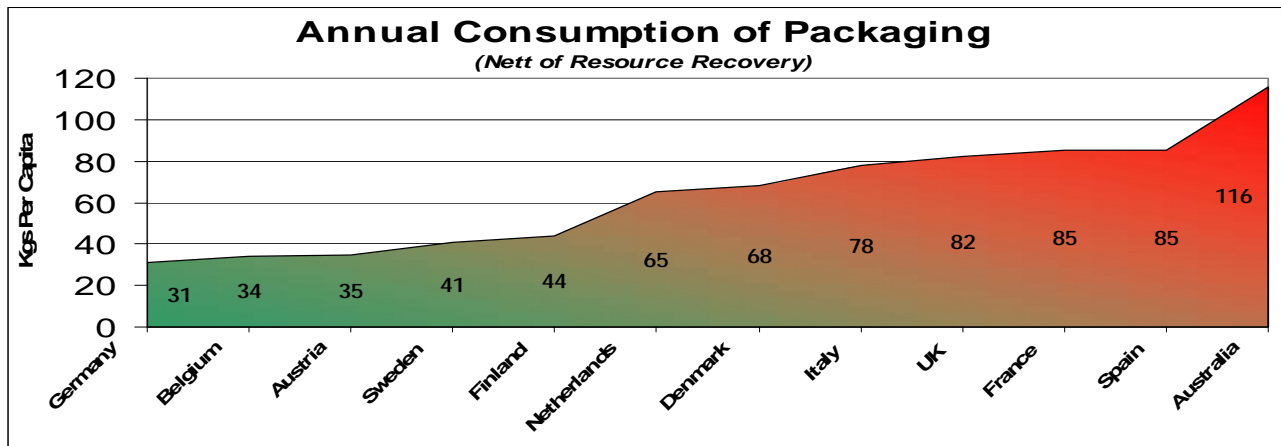
³³ See Financial Analysis of Costs & Benefits of a National Container Deposit System V2.1: BA April 2008

It is clear that the introduction on a National Container Deposit System will do more to lift Australia’s appalling packaging recovery rates than any initiative over the last 20 years.

Packaging Recycling (Tonnes P.A.):	Current National Recycling Rate %	Revised National Recycling Rate with CDS	NPCC 2010 Target
Packaging & Industrial Paper:	47.06%	51.14%	70-80%
Glass Packaging	38.07%	79.62%	50-60%
Steel Cans	37.62%	90.28%	60-65%
Aluminium Bev Containers	71.30%	84.16%	70-75%
PET	46.54%	88.09%	
HDPE	32.19%	63.70%	
All Plastics (including the above)	30.60%	46.85%	30-35%
TOTAL PACKAGING	43.05%	55.88%	65%

Packaging in Australia

Australians consume a lot of packaging and produce more packaging waste per person than many overseas countries.³⁴ A summary chart outlining the per capita consumption of packaging net of recycling is shown in the graphic below.



In packaging resource consumption and recycling, Australia falls well behind those commonly experienced in Europe. It is interesting to note that nations like Germany, Belgium, and Austria enjoy similar lifestyles and wealth to Australians, but consume just 1/3rd of the packaging resources we do.

Kerbside recycling

Kerbside collection is not financially viable without heavy subsidies from ratepayers, who must contribute a huge \$374 million nationwide annual cost to run kerbside recycling services. There is a large and widening gap between kerbside cost and the revenue received by local governments from the sale of recyclables.

According to the NSW Local Government and Shires Association, councils were initially persuaded to establish kerbside recycling services because they involved little cost, due to industry subsidies on the payback price for recyclable materials. However, once kerbside services were established, industry quickly withdrew financial support, leaving ratepayers with the cost burden of recycling their products. Today, the packaging industry contributes just \$3 million a year Australia-wide for both kerbside and public place recycling - less than 1% of the total cost.

³⁴ The Packaging Council of Australia (PCA) recently made much of the fact that the methods of measuring recycling in Europe are far different from those in Australia. This is untrue.

Conversely, paper and cardboard remains reasonably viable for collection via kerbside recycling, thanks largely to the Publishers National Environment Bureau (PNEB) scheme to recycle newsprint which saw newsprint recycling rates lift from just 28% in 1990 to 75.4% in 2005. This dwarfs the meager 47.1% cardboard packaging recycling rates delivered under the National Packaging Covenant.³⁵

Kerbside recycling is a reasonably effective tool for recovering packaging materials consumed in residential homes, but it has limitations:

- Changes in consumer behaviour have seen the majority of packaging consumption growth coming via the 'away-from-home' sector; whether it is at a restaurant or pub, take-away food, or a drink consumed while relaxing outdoors. Industry has estimated that the proportion of glass bottles, PET plastic bottles and aluminium cans being consumed 'away from home' and entering the non-residential waste stream to be 55%, 36%, & 56% respectively.
- The light weighting of glass bottles causes increased breakage leading to a high incidence of glass fines contaminating recovered paper. Nationally the contamination of paper and cardboard sees some 122,000 tonnes of recovered material disposed to landfill costing an estimated \$19.8million p.a. This represents a contamination rate of over 10%. In South Australia where their container deposit system sees most glass removed from kerbside collection, contamination rates are just 1.7%.³⁶
- In the 1990's kerbside recycling systems were expected to collect just 1 type of plastic PET, today they are expected to collect at least 4 varieties of plastic packaging and dozens of composite plastics. This increases sorting costs and undermines the value of the material collected. For example clean PET collected via a system such as container deposits is worth around \$750 per tonne, compared to just \$400 for mixed plastics collected via kerbside recycling.

These changes in lifestyle and the diversification of packaging materials have serious economic and environmental ramifications, requiring a fundamental shift in the policy focus of governments. For example, even if kerbside recycling is 90% effective (which is best practice in Australia nett of contamination and limited geographic collection), the changes in consumption mean it can only ever achieve a 50% recovery rate because of public place (e.g. malls, parks, sporting and cultural events) and commercial consumption (e.g. cafés, pubs and clubs).

It is simple common sense to identify that kerbside systems aren't designed to recover from these sources – without incentive to encourage the right behaviour only the most committed environmentalist will carry their rubbish around until they return home.

The beverage industry and other container deposit opponents frequently argue that container deposit schemes undermine the viability of kerbside recycling services by removing valuable resources from the kerbside waste stream. This is incorrect as councils make a profit from the unredeemed deposits, more than making up for any loss of material. Our recent investigation of a National CD System, confirmed this, with local councils saving an estimated \$59.8million p.a. if a National CD System is introduced.

Is the National Packaging Covenant (NPC) the answer?

The NPC is intended to have a focus on away from home consumption. The current 'solution' being pushed by it, is two-fold:

1. A focus on low hanging fruit in Commercial & Industrial (C&I) sector recovery, where volumes of packaging are consumed such as in food courts, hotels etc.

However there is no requirement or incentive within the NPC for these sectors to participate nor is there a provision within the National Environment Protection Measure for Used Packaging (NEPM) to take action when these points of consumption fail to undertake recycling activity.

2. "Public Place Recycling" is pushed as a silver bullet solution by industry voices such as The Australian Food & Grocery Council's (AFCG) Packaging Stewardship Forum (PSF) and The Packaging Council of Australia (PCA).

Yet this approach requires local government to replace local rubbish bins with a new multi-bin system and split collection service, which local government believes could double or triple the costs of

³⁵ Source: Industry Edge for the NPCC reviewing flawed estimates of Mr Russ Martin used in 2006 NPCC Annual Report

³⁶ 2005/06 NEPC Annual Report

collection. There is little to no current funding, nor a likely future permanent source to support this activity from either the state or industry and no evidence that contamination of recyclables can be brought down to a very small level. Importantly the current NPC policy approach has no financial underpinning to ensure a strategy for collection infrastructure succeeds over the long term.

This means governments can choose to use the last resort - anti-litter campaigns – or select one of the following policy approaches to address packaging waste:

1. Regulate the selection of materials used for packaging materials.
2. Directly tax industry (and in turn consumers) for the total cost of recovery.
3. Utilise a market-based instrument (MBI) to develop incentives and infrastructure for new 'away from home' recovery.

None of these three options are supported by the packaging industry which says their membership of the NPC gives them a veto over government policy. In relation to the collection of packaging waste, they insist on the soft NPC approach with education programs and a few research and trial projects. The

NPC has many signatories and has the potential to influence packaging design and manufacturing processes, but is unable to develop sustainable and comprehensive materials collection systems.

The Performance of the NPCC

The improvement in recycling rates reported in the National Packaging Covenant 2006 Annual Report collated by consultant Mr Russ Martin has recently been shown to be overstated by independent investigation commissioned by the NPCC. Subsequent investigations into MS2 calculations by Industry Edge and Pitcher Partners for the NPCC showed the following **errors** occurred for a variety of reasons:

- Annual paper & cardboard recycling figures included approx. 279,000 tonnes of newsprint and white office paper, which is not considered packaging.
- Glass recycling figures included 70,000 tonnes of glass processed by Visy in New Zealand.

This overstatement of recycling performance by the NPCC is not unusual. Boomerang Alliance is disappointed that for over 3 years the recycling estimates provided by MS2 consistently overstate the case. We also believe plastics recycling rates could still be overstated with pre-consumer recyclate included in recovery figures.³⁷ It is our opinion that the NPCC should seek alternative, advice.

It is clear that after nearly 8 years of efforts by the National Packaging Covenant Council there has been little if any improvement. Further it is clear that the NPC targets will not be met. The best estimates of the current state of packaging recycling presented to the National Packaging Covenant Council are:

Recycling Rates By Material Type	NPC 2006 Annual Report (2005 Performance)	Pitcher Partners adjustment to NPC Annual Report	NPC Targets for Mid Term Review:
Packaging & Industrial Paper	65.30%	47.10%	70-80%
Glass Packaging	44.23%	36.39%	50-60%
Steel Cans	37.62%	37.62%	60-65%
Aluminium Beverage Containers	71.30%	71.30%	70-75%
Sub Total – Plastics	30.52%	30.52%	30-35%
Total Packaging	55.49%	43.00%	65%

We understand that further figures will be released by the NPCC before the end of the year which may increase recycling rates slightly but it's clear to the Boomerang Alliance that the improvement trend since the current NPC came into operation in 2005, is very small. Of particular significance to this Inquiry is that beverage container packaging is woefully low.

³⁷ They are excluded from all other materials in the NPC assessment and are generally not to be considered in recycling figures because they are little more than the collection of materials spilled on the factory floor.

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.

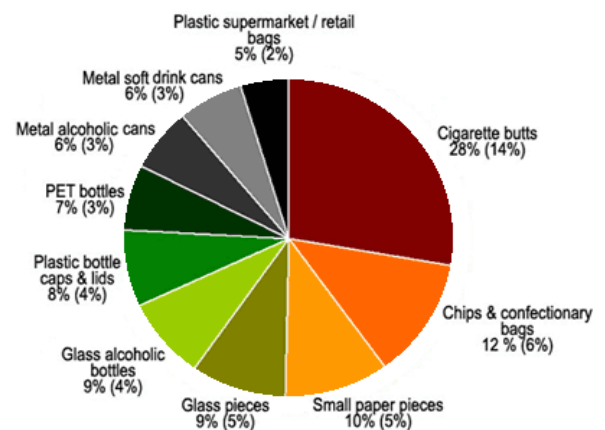
Of course, promoting and then meeting consumer demand for soft drinks, alcoholic beverages, juices, water and other products sold in containers is a huge and lucrative business. And, if done badly, it has huge and costly consequences for human health and the environment. Worldwatch’s 2004 report says:

“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.

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 landfill⁹. At an average cost of \$51.08 per tonne the public pays a hefty



Top 10 Items Littered
Source: CUA 2006 Rubbish Report

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 to 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 recycling⁵⁸ 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 landfill⁵⁹. 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 Recycling⁶²	Cost Per Household	Total Households	Total Cost⁶³	Tonnes of Recyclate	Cost / Tonne⁶⁴
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 1993⁷² revealed that 95% of respondents supported the concept of a refundable drink container deposit. In addition, an EPA survey conducted in

June 2004⁷³ 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

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 \$3million 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 recycle sales)	-\$154,613,873
NGO System Administrator	-\$4,000,000
Handling Fees for collection and Hubs [supercollectors] (nett of recycle 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 recycle sales through reduced contamination	\$14,265,248
Savings to operation of kerbside and MSW recycle	\$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 from 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 Centre⁷⁸, "*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 from 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 year⁸².

The most common causes are seen as

- Entanglement in floating rubbish such as plastic sheet, bags etc
- Strangulation and choking 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 year⁸³.

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, birds 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 tonne⁸⁶ this level of abatement has an economic benefit of \$48.361million per annum.

Water security has become 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 Perth⁸⁷ 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. 605,565 tonnes 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 ₂ e)	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.

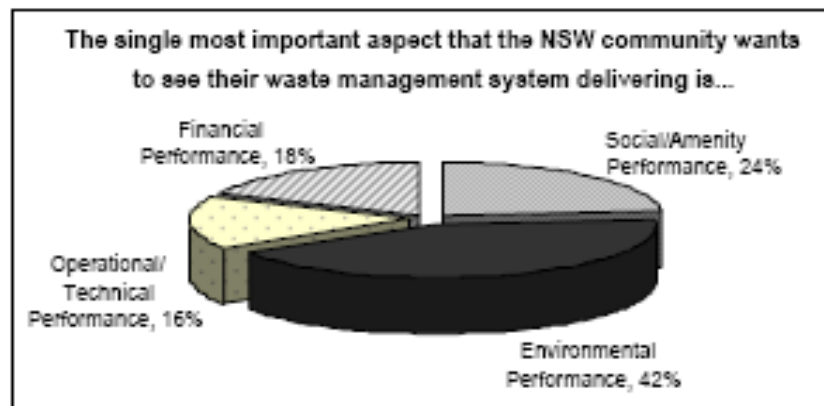
Container Deposits have been a cornerstone of South Australia's success as the leading Australian jurisdiction in tackling waste, litter, and resource recovery.

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 2004⁹⁰ found that environmental performance was the most important feature that communities wanted from their waste management system:

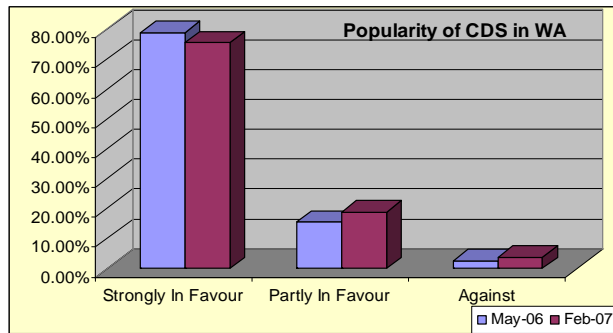
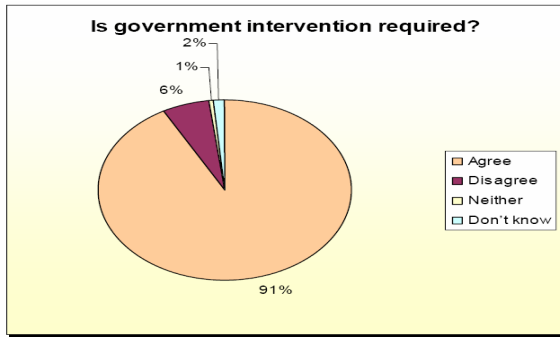


⁹⁰ Nolan ITU (2004). *Getting more from our recycling systems – Assessment of domestic waste and recycling systems*. Report prepared for the NSW Department of Environment and Conservation, Publishers National Environment Bureau and NSW Jurisdictional Recycling Group.

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 mess⁹¹.

Subsequent research undertaken by Newspoll⁹² 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?

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?

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 deals 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.

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