

COMMENTS ON BOOMERANG ALLIANCE PAPER, CONTAINER DEPOSITS –THE COMMON SENSE APPROACH

Introduction

These comments critique the statement and conceptual thinking in the Boomerang Alliance paper. Although the Alliance has set out its ideas on how a CDL might work in Western Australia and has quantified the impacts in some detail, we have not peer-reviewed the data and so cannot comment on the numbers they have put forward.

CDL and sustainability

The foreword to the Boomerang Alliance paper talks about sustainability strategy, and there is no doubt that sustainable development is the key challenge facing business and one of the major challenges facing legislators. It has been suggested that if the Chinese consumed at the same rate as the Americans, we should need the resources of four planets to sustain us. Climate change and competition for scarce resources may well lead to social conflict and economic disruption.

It is vital, therefore, that we focus on the real issues rather than indulging in gesture politics which can only distract us from what has to be done. The priorities should be to conserve energy and minimise activities likely to have a significant impact on global warming – waste management is a side-issue, and zero waste an illusion.

David Davies Associates (2004) has measured overall household waste diversion rates across the world. These include green waste and other recyclable material as well as packaging.

In Europe, best practice performance in the recycling and composting of household waste is a diversion rate of around 200-225 kg per person per year, of which 100-125 kg is bio-waste and around 120 kg consists of dry recyclables (75-80 kg paper, 23-35 kg glass, 20-30 kg plastics and metals and 3-5 kg textiles). Examples can be found in most Western European countries, but they tend to be in rural areas with fewer than 250 people per km².

The best performing provincial and urban areas (1,000-2,500 people per km²) have achieved diversion rates of 45% (Bonn, Seattle and Peel, Canada, for example), but these are not always sustained. The only local authority that seemed to have achieved more than 45% was Ghent, which has claimed 55% diversion.

As regards larger metropolitan areas and cities, the best performers (Berlin, Geneva, Hanover, Munich, Stuttgart, Vienna and Zurich) achieve something like 30%-36% diversion, equivalent to 150-200 kg per person per year. Amsterdam, The Hague and Rotterdam all have a 16%-17% diversion rate, equivalent to 60-70 kg per person per year. London diverted 50 kg per person in 2002/3.

The largest and most densely populated city examined, New York City, has a population density of 10,200 people per km². Recycling has been mandatory since 1989, there is a CDL for beverage containers and a weekly multi-material kerbside service to 100% of households, but the recycling rate has never exceeded 21%.

As Perchards have previously pointed out in 'What's wrong with the pathetic package' (June 2005), there is really no point collecting food-contaminated flexible household packaging and paper bags for recycling. If 90% of household packaging is targeted for collection, and collections are made from 95% of Australian households, then 94% of the households served would have to put out all their packaging for collection every time for an 80% collection target to be met. That means 20% waste. A parallel collection system for compostable packaging and food waste is possible, but there are many pitfalls relating to contamination which would have to be overcome.

A sustainable lifestyle involves not only sustainable production and consumption, but also – and this is usually overlooked – sustainable distribution. Distribution efficiency involves using new information technology to improve routing, share loads and increase backloading, and improve the efficiency of central warehousing operations. People within industry are even beginning to talk about using RFID chips to determine the place of a particular item on the pallet stack – at present, the packaging for every item has to be robust enough for it to withstand being at the bottom, with the weight of all the others on top of it. If RFID could be used to determine what goes on the top and what goes on the bottom, there might be significant savings in transport packaging requirements and thus less fuel consumption and transport pollution.

Against initiatives such as these, it is hard to see how reverting to an old-fashioned distribution system that duplicates the reverse logistics now established for recycling systems can be regarded as ‘common sense’. In any case, a one-dimensional focus on packaging waste management in a polemic that uses sustainability as its principal justification is not just ill-founded, but irresponsible.

Over the last 20 years, overall consumption per inhabitant has remained virtually unchanged in the EU while the economy has grown by 50%. Thus, Europe has significantly improved its material efficiency. However, increased production volumes have often outpaced environmental improvements and efficiency gains and current policies have not been sufficient to reverse fundamentally unsustainable trends, either in Europe or globally.

To reverse these unsustainable trends, environment policy needs to move beyond emissions and waste control. It is necessary to develop means to identify the negative environmental impacts of the use of materials and energy throughout life cycles and to determine their respective significance. This understanding of global and cumulative impacts along a causal chain is needed in order to target policy measures so that they can be most effective for the environment and more cost-efficient for public authorities and economic operators. Informed policy-making requires knowledge of how resources move through the global economy, what drives this and what the impacts are wherever the resources are extracted and used.

European Commission (December 2003): Communication on the Sustainable Use of Natural Resources

‘A Waste Crisis looms in Western Australia’

The Boomerang Alliance says that the costs of municipal recycling services in Western Australia are spiralling out of control due to factors such as a relatively small population, the ‘tyranny of distance’ to reprocessors on the east coast and overseas, and a need to operate collection regimes over enormous distances in rural WA, while strong economic growth is fuelling increased consumption. Local government has been trying to extend kerbside recycling services to an ever-increasing range of materials, and the cost is now unaffordable in much of WA.

This is all true, but duplication of activities – running a separate beverage container return system alongside a system for collecting non-beverage packaging and other household waste – would only add to overall system costs. Since costs represent payment for the use of resources (partly labour, but also fuel consumption which is more significant in the big picture of sustainability), this would be an environmental negative.

The Alliance seems to believe that local government is some sort of innocent bystander that is picking up costs that should be paid by industry. In reality, local government is providing a service on behalf of (and charged to) local ratepayers, while industry costs are either passed

on to consumers or else offset by lower wage bills (through layoffs and/or lower wages or smaller wage increases).

Perchards have previously calculated that for all packaging waste management – beverages and non-beverages – the difference between the individual as ratepayer and the individual as consumer is less than one Australian cent per packaged item bought.¹ Is it worth incurring a considerable increase in total system costs to ensure that consumers pay an extra one cent per item through product prices so that householders can be relieved of paying the same amount through their local taxes?²

Services have to be paid for, and in a democracy the electorate has the right to tell local government whether they want to pay for a high level of service or a lower level, and what weighting they want to give to recycling services as opposed to libraries, parks and road maintenance. If the state government believes that a de luxe waste packaging recycling service is necessary, it should vote local government the resources to carry it out.

The Boomerang Alliance says that upwards of 30% of all residential premises are tenanted, and waste and recycling levies are not directly passed through to the tenant in the same way as energy or water charges. Maybe they do not pay them directly, but surely landlords try to recover their operating costs in the rents they charge?

The Alliance also says that tourists often make significant contributions to waste and litter but pay nothing at all towards the cost of recovery. In reality, tourists are probably responsible for an above-average amount of littering but generate a below-average amount of solid waste. They also bring money into the local economy which, by way of taxes on their purchases and on the people that serve them, pay for their use of the local infrastructure.

Later on in the paper the Alliance says 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.’ How true – unfortunately CDL also adds to the costs that have to be allocated.

The Boomerang Alliance says that the cost factors in WA which it refers to ‘render voluntary commercial and industrial recycling largely unviable, leaving recycling rates well below community expectations’. In point of fact, diverting relatively valuable beverage containers away from kerbside collection and into some parallel collection scheme might well be counter-productive. Without beverage container material, there may be less economic justification for collecting other types of packaging from the kerbside, so the overall diversion rate could easily fall.

This is supported by evidence from Germany, where CDL was introduced in January 2003. The recycling rates relate to the tonnages of packaging collected and delivered to a recycler as a percentage of the tonnage of consumer packaging licensed by the recovery organisation DSD:

¹ Perchards (2005): *Peer review of the Boomerang Alliance report, National Packaging Covenant – Say No to the Waste Club. It is important to understand that Perchards are not opposed in principle to producer responsibility, which can play an important role in developing a large-scale waste recycling system where it does not already exist. Australia already has such a system, however, and we do not believe that it is necessary to set up a complex bureaucracy just to manage a marginal transfer of funds.*

² *In any case, producer responsibility is economically regressive, as the poor spend a higher proportion of their income on packaged goods.*

	Recycling rate				
	2001	2002	2003	2004	2005
Glass	93%	96%	99%	98%	97%
Paper/board	166%	164%	161%	111%	117%
Plastics	87%	87%	97%	82%	75%
Composites	65%	68%	74%	71%	64%
Steel	114%	115%	121%	98%	100%
Aluminium ³	105%	97%	128%	156%	157%

The Boomerang Alliance comments that *'efforts to mine valuable resources and organics by waste are stymied by underpriced landfill and poor market conditions for the sale of recovered material.'* It is true that the higher the cost of landfilling, the greater the incentive there is to recycle, but this is a separate issue which is nothing to do with CDL. Poor market conditions mean that the cost of collecting, transporting and reprocessing used packaging material exceeds the cost of using virgin material. Life Cycle Analysis would reveal whether this is a market failure, or whether it reflects the resource costs of the two approaches, given the 'tyranny of distance' from which Western Australia suffers, but again this is irrelevant to the desirability or otherwise of CDL.

'Away from Home Consumption'

The Boomerang Alliance asserts that *'even if kerbside recycling is 100% effective (which is impossible), the changes in consumption habits 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 true that casual purchases of beverages for drinking in the street or on the beach are likely to result in a very low rate of return by consumers, but there is no reason why this should apply to drinks consumed in cafés, pubs and clubs, where large quantities of containers can be collected at one pick-up.

The assumption that 50% of beverage containers are used away-from-home seems remarkably high. It was presumably taken from the White report on CDL in New South Wales⁴; Nolan-ITU's peer review for EPA Victoria⁵ found that away-from-home consumption represented 29% in Mildura, 36% in Ballarat and 55% in Manningham.

The Boomerang Alliance complains that manufacturers are not required to 'embrace sustainable design' by using materials that are able to be recovered. *'Logically this leads companies to select packaging that is: the cheapest material available; OR the material that best presents the product. Consequently, there is no feedback loop - industry makes decisions that increase the costs of recycling...'*

³ Aluminium beverage cans almost disappeared from the German market as a result of the way the CDL was implemented, so the percentages from 2003 onwards reflect the fact that there was much less aluminium packaging to collect.

⁴ White, Dr S, *Institute for Sustainable Futures, University of Technology, Sydney (November 2001): Independent review of Container Deposit Legislation in New South Wales.*

⁵ *EPA Victoria Policy Background Paper (2003): Container Deposit Legislation – Financial Impacts.*

In reality, sustainable design demands much more than just using materials that are able to be recovered. Since, the amount of energy locked up in the production of goods is at least ten times that used for the packaging⁶, functional performance – successfully protecting the contents – is the most important factor in sustainability, closely followed by minimisation of the use of energy, water and other resources throughout the production, distribution and disposal lifecycle. Recoverability is just one subset, and while it should not be ignored, its significance should not be exaggerated.

‘Compared to the current performance levels of the rest of Australia, South Australia’s 80%+ beverage container recovery rate and the noticeable lack of litter on highways, parks and beaches shows that container deposit systems are proven to be highly effective in addressing away-from-home consumption,’ says the Alliance. *‘Overall South Australian recycling per capita is nearly triple that of WA. The cost of kerbside in SA is estimated to be just \$24.18 per household/p.a. compared to WA’s \$77.15 per household/p.a.’*

Given the distance issue in WA, a comparison of SA with Victoria and NSW would be fairer. According to Nolan-ITU’s study on costs in Victoria,⁷ the cost of kerbside recycling in 2001 was \$30.70 per household in Ballarat, \$32.56 in Manningham and \$62.82 in Mildura.

Perchards have no specific data on litter rates in SA versus those in other Australian states, but a large number of comparative studies have been done in the US, and *‘while it appears that states with deposit legislation, as well as those with total litter control programs, appear to have lower rates than those surveyed which did not have total litter control programs, it is impossible to assert at this time that this can be demonstrated at even moderate levels of statistical significance.’*⁸

More recent work by the Institute for Applied Research,⁹ the leading organisation in this field in the US, shows that under US conditions, beverage container deposits are by far the most expensive way of eliminating one item of litter:

*‘Beverage container deposit programs are also a very expensive way to reduce litter since it does not appear to have any significant effect in reducing non container litter. As a consequence, the added handling cost of the redemption system, must be absorbed solely by the reduction of covered beverage containers in litter. The problem is that unlike the 1970s, when a relatively large percentage of containers sold ended up as litter, our data from recent surveys indicates that, without deposits, less than 0.3% of all containers sold now end up as litter. This means that since only one of 164 containers sold end up as litter, the handling costs for 164 containers is now being spent to prevent a single potential item of litter. **Based on a conservative estimate of a little over 2 US cents per container to maintain a redemption system, this works out at a cost of US\$ 3.42 (A\$ 4.4) to prevent the littering of one container.’***

⁶ Kooijman, Dr J M (2000): Environmental impact of packaging – performance in the household.

⁷ EPA Victoria Policy Background Paper (2003): Container Deposit Legislation – Financial Impacts.

⁸ Syrek, D, Institute for Applied Research, California (1980): Michigan: After – a study of the impact of beverage container deposit legislation on street, roadside and recreation area litter in Michigan. *The IAR’s various research findings have been discussed in more detail in Perchards (2005), Peer review of the Boomerang Alliance report, National Packaging Covenant – Say No to the Waste Club and Perchards et al (2004), Study on the progress of the implementation and impact of Directive 94/62/EC on the functioning of the Internal Market – Interim Report.*

⁹ Syrek D, Institute for Applied Research, California (2003): What we now know about controlling litter – Findings pertinent to Michigan derived from thirty years of litter research.

By comparison, the Institute for Applied Research estimates that

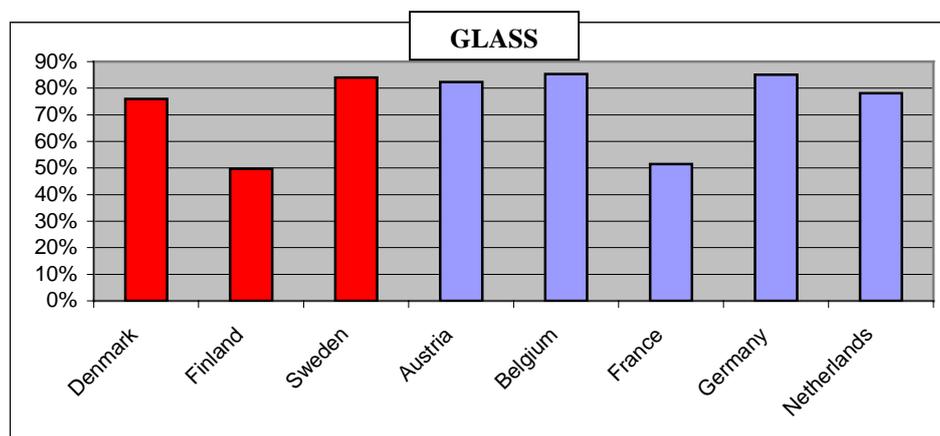
- paid, targeted advertising costs US 1.3¢ (1.7¢ Australian) to eliminate one item of litter,
- “adopt-a-highway” schemes cost US 14.1¢ (18.0¢ Australian),
- comprehensive statewide litter control programmes aimed at preventing rather than removing litter cost US 14.2¢ (18.2¢ Australian), and
- litter pickup programmes cost US\$1.41 (A\$ 1.80).

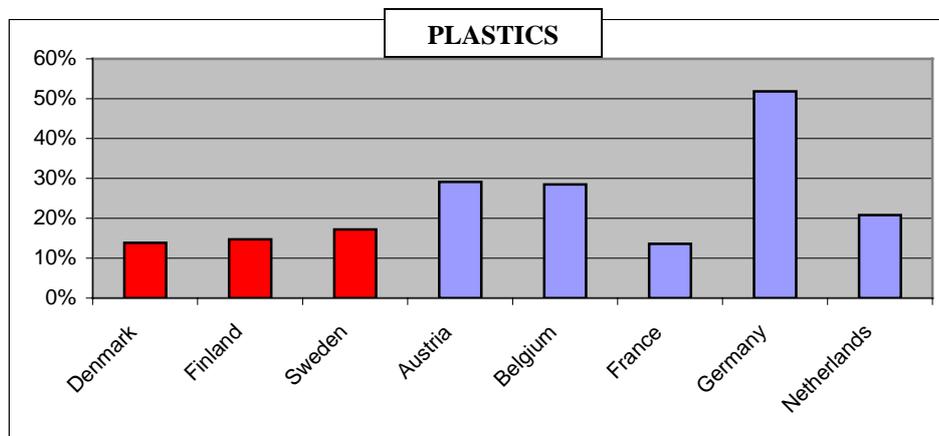
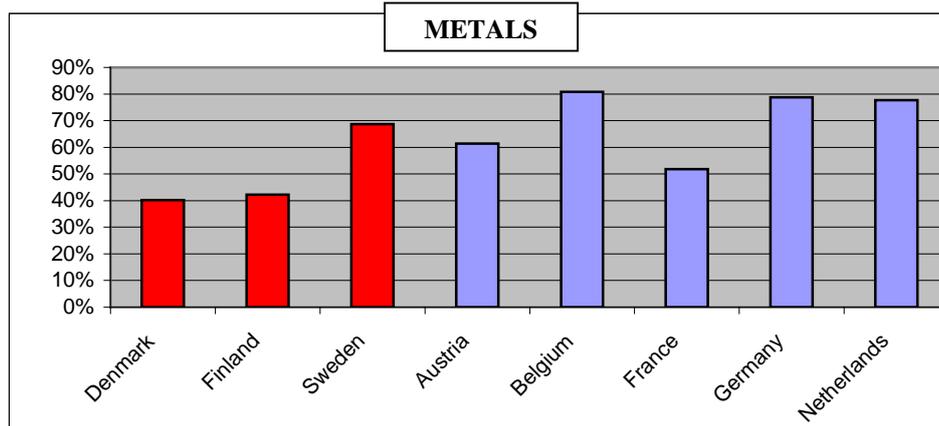
Between 2 and 8 additional cleanings per year are required to cut litter by 50%.

In 2002, the Dutch Government envisaged imposing CDL if litter was not reduced by two-thirds within 2½ years. After further reflection, however, the Government told the Dutch Parliament on 31 March 2006 that a one-dimensional focus on beverage containers through CDL would not deal with non-beverage litter or address the real problem of attitude and behaviour. *‘This means that an integral solution should be sought which yields a much larger result than deposits on a few packaging items’* The type of initiatives the Minister now expected to see included public/private financing for collection, local taxes, area-specific approaches (e.g. in shopping centres), public actions, and increased enforcement.

‘Packaging Recovery & Recycling’

‘All the world’s best recyclers have one common feature – container deposits’, claims the Boomerang Alliance. This is absolutely untrue. Of the eight EU member states with the highest packaging recycling rates in 2002 (i.e. pre-dating Germany’s adoption of CDL in 2003), deposit states Denmark, Finland and Sweden have **not** achieved higher recycling rates than non-deposit states Austria, Belgium, France, Germany and the Netherlands:





The Boomerang Alliance says that the PCA has *'made much of the fact that the methods of measuring recycling in Europe are far different from those in Australia.'* The Alliance appears to have misunderstood the PCA's argument, though. The Boomerang paper focuses on recovery ('collection' in European terminology), whereas the PCA was trying to explain that in Europe, recycling tonnages are calculated on the basis of material delivered to a recycler, not the recycler's output. By contrast, the Australian legal definition of recycling is to *'recover the product and use it as a raw material to produce another product.'*

There may be a difference of 30% between input and output, so to make the two sets of data comparable, the European tonnages have to be adjusted downwards to eliminate moisture, contamination and products that should not be part of the packaging collections (broken toys, laddered tights and other small items of waste).

It appears that Australia is in the same 45%-60% recycling band as most of the EU Member States, ahead of Greece, which has been given longer to meet the EU targets, and significantly behind only Belgium and Germany. The average recycling rate reported by the 15 countries in membership of the EU in 2002 was 52%. Weighting it according to population, it was 55%. The Boomerang Alliance continues to be wrong in its persistent claims that Australia's recycling rate falls well behind Europe's.

The Alliance has constructed tables showing per capita consumption rates nett of recovery (presumably they mean energy recovery rather than collection) and recycling. This, they say, demonstrates that the unrecovered portion of the packaging is higher in Australia than in European countries. But if up to 30% of the European packaging deducted from the consumption figure is collected, transported and discarded, this should be added to rather than

deducted from total resource consumption. In any case, the inconsistency between the data from neighbouring European countries with similar cultures shows that the EU consumption figures are seriously flawed,¹⁰ and the Alliance's comment that the NPC *'has failed to produce any definitive data about consumption, disposal or recycling performance of packaging'* and that *'this makes it difficult to precisely measure performance'* suggests that the data they used for Australia may also be unreliable .

'Consumption, Recovery and Recycling of Packaging'

The Alliance's estimates indicate that *'current WA recycling performance lags significantly behind the rest of Australia. This is caused by the lack of reprocessing facilities and expenses to transport materials over long distances, which leads to a level of expense that limits the viability of current approaches to recycling in WA.'*

This is a factor of geography, not a function of legislative failure. It means that the resource costs of recycling are higher in WA than elsewhere, which in turn means that the optimum levels of recycling are lower in WA than in the eastern states. It does not mean that WA needs a subsidy to bring its recycling performance up to the levels of jurisdictions which do not suffer the same natural disadvantages.

Scope of the proposed CDL

It is astonishing that the Boomerang Alliance now proposes that CDL should include not only containers for the conventional bedrock products (carbonated soft drinks, beer and water) and the usual add-on candidates (sports and new age drinks, juices and still soft drinks), but also for milk, wines and spirits, other foods in rigid containers (ice cream, soups, sauces etc) and even non-foods in rigid containers (paint, chemicals, shampoos etc). Has the author of this paper ever been shopping?

There is no doubt that product development has led to a considerable blurring of categories in recent years. It made no sense that until changes to the German law came into effect in May 2006, Volvic water (deposit-bearing) appeared on the shelves alongside and in the same type of container as Volvic flavoured water (deposit-free) and Volvic Tee Création (deposit-bearing), while juices (deposit-free) were displayed alongside fruit juice-based drinks, which were either carbonated and deposit-bearing, or still and deposit-free. Extending the scope of the CDL has cleaned up the situation to some extent, but has created new anomalies (one manufacturer's deposit-free dietary product is another's deposit-bearing soft drink with added vitamins, and so on).

Without going back to the product range of the 1970s, the only thing that can be done about this is to apply the deposit to all beverages, but experience shows that the more containers there are to be returned, the less consumers are inclined to co-operate because of the additional time needed to redeem their deposits. As the Alliance admits (though in a different context), containers recently added to the system are experiencing lower rates of recovery than those originally part of the scope.

¹⁰ *Austria 130 kg per capita but Germany 183; UK 168 kg but Ireland 218. The reason is that no import and export data are collected on trade between member states. The European data on tonnages delivered to recyclers are much more reliable, though they do not help quantify the output from recyclers. It should also be noted that the Boomerang Alliance's tables do not include Greece, Ireland and Portugal, whose recycling rates are below the EU average.*

Even when retailers have invested in reverse vending machines to automate the returns operation, deposit redemption always takes longer than posting bottles one by one into a bottle bank, which in turn takes much longer than setting out all recyclable packaging at the kerb. Including non-foods and smelly petfood containers, and possibly even takeaway food containers, disposable cups and plant pots, would only reduce the level of co-operation that can be realistically expected. Return systems work best when they fit in with how people live.

This level of diversion would considerably reduce the economies of scale of kerbside collections, unless the decision were taken to refuse to collect deposit-bearing containers at the kerbside. That would speed up and reduce the cost of collections, but it would mean that overall collection and recycling rates would be considerably lower than at present.

We do however agree that including glass in kerbside collections is a problem because it leads to contamination of paper with glass fragments and to low-value mixed-colour cullet. The same problems have been encountered in New Zealand and the UK, where local authorities have opted for lowest-cost collection rather than closing the loop by maximising the marketability of what they are collecting. Continental Europe opts for 'bring' systems (bottle banks) for glass, a much more effective approach.

The deposit system proposed by the Boomerang Alliance

We also agree with the Alliance that any deposit system needs to be planned rather than allowed to evolve. The unintended consequences of the CDL introduced in Germany in 2003 demonstrate that. It is good that the paper puts forward some suggestions on how any deposit system should operate.

However, in its discussion on deposits, the Alliance's paper confuses the deposit which bottlers voluntarily charge on refillables (PET as well as glass) with the mandatory deposits prescribed by law for non-refillables in some jurisdictions. The higher the deposit, the greater the incentive to return; but if the deposit on non-refillables is higher than the deposit on refillables (which is based on the replacement cost of the bottle), the result is to encourage consumers who do not intend to return their empties to buy refillables and then discard them. This is the most wasteful approach of all.

The Boomerang Alliance asserts that '*the notion that the deposit is a cost is spurious*', which suggests that they do not know a great deal about logistics. The introduction of a parallel logistics system, developing new administrative and accounting procedures and anti-fraud measures, and investing in reverse vending machines will all incur start-up and continuing costs, especially if – as the Alliance proposes – the unredeemed deposits are confiscated from industry rather than being used to defray the additional operating costs.

And the idea of introducing the refund 2-4 weeks before the deposit takes effect is outrageous. Once the word got around, containers from all over Australia and possibly beyond would find their way to WA, and industry would find itself with a huge but unpredictable financial liability just at the time it had to invest in new operating systems and equipment.

The Boomerang Alliance complains that the fact that no container recovered in WA is reprocessed in WA '*indicates a high degree of market failure, where major reprocessors have failed to support the recycling efforts of Western Australians.*' In reality, location of production is geared to facilitating the safe delivery of products at the lowest possible cost, and recycling of the material, used for packaging (or other things) is just one intermediate step. It makes better economic and environmental sense to site packaging production

facilities close to where the goods to be packaged are produced. The same is true in Europe – Ireland exports almost all of its used packaging for recycling abroad, the UK imports aluminium cans from many countries for recycling, Belgium and Norway export all of their used glass for recycling elsewhere, and so on. Mandating by law the construction of recycling facilities in WA would only add to overall cost and resource consumption.

One of the features of the arrangements proposed by the Alliance is a prior approval system for packaging, based on its recyclability. It is difficult to see how this could work as state legislation – any such rules would have to be in force nationally. And then:

- It would discourage and slow down innovation – the companies that took the lead in applying for approval would lose their competitive advantage, in that they would incur the cost of preparing the application and rivals, thus forewarned, could quickly bring me-too containers to market once the result of the application was known.
- If some types of container are prevented from entering the Australian market, it may well be open to challenge under WTO rules as a barrier to trade.

And recyclability is a chicken-and-egg issue. Nobody is going to build a recycling facility unless there is a critical mass of feedstock, and this will not be possible until the packaging system has been approved as recyclable. The outcome would be that Australia could never think of introducing a new type of container unless its recyclability had already been proven elsewhere in the world.

Costs and equity

The Boomerang Alliance commends advance disposal fees and deposit/refund systems as a way of ensuring that the cost of waste management is more equitably distributed than if it is averaged out. But if equity is the issue, why should the extra costs of a parallel waste management system be imposed on the beverage sector (whether widely or narrowly defined, depending on the scope of the measure) and not on producers of other products that may end up as waste – other packaged products, newspapers and magazines, meat trimmings, vegetable peelings, tights, old shoes, broken toys and so on?

If CDL is the answer, then equity demands that it is applied to everything that may end up as waste, or at least as recyclable waste. On the other hand, the fewer items that are deposit-bearing, and the less time the consumer has to devote to deposit redemption, the higher the level of co-operation that may be expected. There again, the higher the deposit rate, the bigger the incentive to co-operate, but the higher the deposit, the greater the inequity between deposit-bearing products and competing products that do not bear the deposit.

The Boomerang Alliance claims that overall deposit system costs would be offset by savings to ratepayers of at least \$4.5 million per annum in respect of kerbside recycling costs. We have not been able to find the ‘companion document’ that explains this calculation (referenced as *The costs of container deposits in WA*), but we find it hard to believe, unless deposit-bearing containers are so great a proportion of the waste put out for collection that the frequency of kerbside pick-ups can be halved.

The Alliance seems to be relying heavily on the cost data published in the BEAR report in the US, but these have been strongly criticised within US industry as serious underestimates.

DAVID PERCHARD

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