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30 March 2006

The Commissioner
Waste Generation and Resource Efficiency Inquiry
Productivity Commission
L2B Collins St East
Melbourne VIC 8003

Dear Mr Weickhardt,

Re: Waste Generation and Resource Efficiency Issues Paper

PACIA commends the highly consultative approach that the Productivity Commission has taken regarding the **Waste Generation and Resource Efficiency Inquiry.** PACIA is very pleased to have the opportunity to provide comment at this stage of the process.

PACIA and its members are pleased to contribute to the further improvement of waste minimisation and optimising resource efficiency. These are key areas for the future of the Australian industry as local players in global markets. Our organisation is directly involved in many projects and programs which advance these issues and seek to do more in conjunction with governments and communities. We look forward being involved with the Productivity Commission

PACIA is the peak body representing the plastics and chemicals sectors in Australia. The sectors have a combined annual turnover of $31 billion and employ more than 81,000 Australians. The products produced by these sectors are an integral part of many other industries including automotive, construction, furnishings, packaging, and information technology. PACIA members represent entire product chains including the trading, importing, manufacture, transportation, processing, of plastics and chemicals as well as plastics recycling. Companies range in size from large multinationals to small one and two person operations in both sectors.

PACIA is committed to achieving the highest standards of health, safety and environmental performance by its industries. Adherence to Responsible Care® is a condition of PACIA membership for chemical companies in Australia. This program aims to improve health, safety and environmental performance through the application of an integrated management system approach aligned with the ISO Management Systems, including the ISO14001 environmental series.

PACIA recognises the need for a review of current waste generation levels and management options and commends the Productivity Commission for the ambitious scope of the review.

Our submission provides some general background and comments as well as specific comments to the Productivity Commission's Issues Paper:

- Introduction
- Section 3: Overview of solid waste;
- Section 4: Benefits and costs;
- Section 5: Arguments for government intervention;
- Section 6: Policy options;
- Regulatory impact statements;
- Voluntary Vs Regulated; and
- Conclusion.

Some areas of specific interest include:

1. The future value and access to raw materials and energy
2. Processes and tools to guide decision making in future settings
3. Use of waste to energy and alternative waste technologies (AWT)
4. The importance of a common and objective recognition and value of resources, energy and waste across industry, governments and communities
5. The development of tools, messages and communication through engagement and education to achieve this.
6. This includes the development of suitable environmental break even points which recognise and value the total energy involved in waste management of used products
7. Endorsement of the product stewardship principle of shared responsibility for an issue throughout whole product supply, use and recovery chains. Each sector has significant expertise and resources which combined will usually provide a more effective and meaningful solution than single-point regulation.
8. The importance of nationally consistent regulations, both within jurisdictions as well as between them.
9. Accurate and consistent information to help guide decision making.
10. A recognition that usefulness, practicality and applicability need to be key in all decision making.
11. Target setting needs to be based in a whole of system context and be scientifically and ecologically sound.
12. The necessity of learning and adapting the most suitable mix of solutions from overseas experiences.

Where sections or specific questions included within the Issues Paper Sections have not been addressed within the submission, PACIA has no comment to make in relation to the section or issues.

If you wish to discuss any of the issues raised in the submission please contact James Macdonald on (03) 9426-3808 or by email at jmacdonald@pacia.org.au.

Yours sincerely

Peter Bury
Director Industry Development – Plastics

Introduction

PACIA and its members are pleased to contribute to the further improvement of waste minimisation and optimising resource efficiency. These are key areas for the future of local companies in global markets, as well as Australian society. Our organisation is directly involved in many projects and programs which advance these issues and seek to create improvement in conjunction with governments and communities. We look forward to being involved with the Productivity Commission throughout this review process and implementing recommendations that further benefit the community, economy and environment.

PACIA provides a forum for its membership to share knowledge and experience and improve our sector in partnership with governments and communities. The plastics and chemicals industries are amongst the world's most dynamic and continue to add significant value to society. PACIA is the peak body representing the Plastics and Chemicals sectors in Australia who have a combined annual turnover of $31 billion and employ more than 81,000 Australians. The products produced by these sectors are an integral part of many other industries including automotive, construction, furnishings, packaging and information technology. PACIA members represent a broad range of entire product chains and cycles including the manufacture, trading, processing, importation, transportation, recovery and recycling of plastics and chemicals raw materials and products. Companies range in size from large multinationals to small one and two person operations in both sectors.

PACIA and its' members are committed to achieving the highest standards of health, safety and environmental performance by its industries. The Responsible Care® program is the international benchmark for the Australian chemical industry and is a condition of PACIA membership for chemical companies. Similarly the Plascare™ program provides Members in the plastics sector with OHS management leadership programs whilst the PACIA Carrier Accreditation Scheme provides a validated recognition of safety in national chemical transport. These programs aim to improve health, safety and environmental performance throughout the national industry.

Manufacturers, importers and suppliers of products use their best efforts to prevent the misuse of a product and its packaging. Member companies have a shared responsibility for the storage, handling, use, recycling and safe disposal of their products throughout the life cycle, and endeavour to extend their influence throughout the supply chain through effective education and communication strategies. Any assessment of safety, health, environmental impact and waste management should have priority over commercial and technical considerations.

PACIA endorses the product stewardship principle of shared responsibility for an issue throughout whole product supply, use and recovery chains. Each sector has significant expertise and resources which combined will usually provide a more effective and meaningful solution than single-point regulation. Not using the combined strength of these links in the chain can create a less than optimal outcome.

As society strives to improve quality of life, innovation delivers a range of products and services to meet peoples' needs. Having all of the supply chain partners involved in issues that might arise, at any part of a product's life, provides a wealth and diversity of knowledge to address concerns. Strategically working with the community and governments allows industry to design and deliver preferred outcomes for all concerned. For goods manufactured in Australia this also provides stability for investment, employment and skills retention vital for our countries' future.

We agree with and endorse the need for national uniformity for environmental management. This uniformity is important between departments within a jurisdiction as well as across jurisdictions. PACIA represents companies with activities in all states and territories of Australia and encourages the development of nationally consistent guidance and regulation by all state and territory governments.

In the same way that broad stakeholder involvement with products themselves provides greater synergy and strength for problem solving, guidance and regulation consistency amongst jurisdictions creates similar benefit. The alternative to a uniform approach is for companies to have to deal with the requirements of multiple regulatory frameworks and their unique requirements. This in turn adds cost and complexity rather than building workable platforms for necessary progress.

Finally, the way that society values and uses raw materials and energy underpins how we meet our current needs and allow future generations to meet theirs. There exists a diverse range of views as to what these values are and how future access should be determined. Having a more consistent and objective recognition of waste and energy efficiency anchored in sound science can assist in harmonising these divergent views and helping create future value. Industry's technology and government's policy add most value where they exist in an environment of common direction and purpose. Therefore, engagement and education across industry, communities and governments need to occur for a commonly useful set of outcomes from this Commission's work.

PACIA and its members look forward to working with the Commission to assist this process.

Section 3: Overview of solid waste

To what extent is the lack of disaggregated data (that is, the lack of information about quality and composition of waste) a problem?

It is PACIA's view that the lack of comprehensive and consistent data poses a significant problem at many levels, not the least of which is its impact upon the ability of government and business to accurately plan and work towards meeting future needs. The divergence of views about the composition and impact of waste streams can create debate which detracts from creating improvement. One example of this the variance of views about how much plastic exists in landfill. Anecdotal opinions range from 2% to 50%. As far as we know, the reality is about 5% by weight (with half of this being packaging materials) based on work done by NSW and Victorian governments over the past 5-10 years.

The re-direction of government and industry resources resulting from this insufficient information can be observed in the plastic bag debate. The plastic bag debate, whilst iconic and important in its own right, represents a relatively small amount of waste yet has diverted significant resources beyond it's priority in the minds of many in industry and governments. We consider that a harmonised national approach to data gathering to be of critical importance which will address some of the impediments faced by industry.

What are the most significant data gaps?

PACIA would like to see more comprehensive data collected on the composition of material going to landfill, and believes that if we are to progress towards the stated goal of "Ecologically Sustainable Development" there is significant work which needs to be done on the calculation of Environmental Break Even Points. Environmental Break Even Points would be beneficial in order to illustrate the total energy used in retrieving materials compared to their value at end of life and indicate the relative tipping points at which costs exceed benefits. Without such guiding tools, the divergent views as to "optimum recycling levels" will continue to escalate. Finding suitable combinations of waste management treatments for various product types and volumes would be greatly assisted by this type of information.

Current landfill data tends to aggregate materials, such as recording "plastics" with no details of polymer or product type. For producers and other industry users this makes it difficult to identify potentially viable waste streams for recovery. It would be beneficial to expand data collection in this area to include the type of plastic (PET, HDPE, PVC etc), and major product types (packaging, building materials, automotive parts etc). Again, national consistency between local governments and state governments will be beneficial. The same opportunity exists for standardised classification of waste types across all major product and materials types.

Before we are able to move to a system based on net gains or Triple Bottom Line accounting, there needs to be a significant body of data available that shows relative costs and benefits of different treatment options for the full spectrum of waste. PACIA sees government as having an integral role in progressing this work, not only in the calculation of the break even points, but in validating and promoting the outcomes. We would hope that such an approach might then help address the regulatory impediments that this industry has experienced. Examples where this may be useful are in determining the contribution which waste to energy and other alternative waste technologies can provide.

What are the costs and benefits of collecting more comprehensive and disaggregated data?

A brief analysis shows that collecting more comprehensive and disaggregated data will be more expensive, technically/practically difficult and time consuming. However, it offers a higher level of certainty and minimises risk in planning policy, which would then allow for uniform planning and provide the possibility of measurable outcomes.

Potential costs increases would be likely to be incurred by responsible authorities such as local governments and state governments. Increases, if they were to be needed, may be both ongoing due to increased time and effort in data collection, and initial in standardising and aligning reporting formats across the 673 local and eight state and territory government jurisdictions. Greater standardisation may attract greater reporting efficiencies and overall reduced costs. Other models may see partnerships between parties interested in the data develop systems suitable to their needs.

The increased information and use of this information appears to have many areas of application in planning and resource recovery. Generic waste composition options as well as regional opportunities may provide greater matching of technologies and logistics to improve resource efficiency at the local level.

PACIA would like to stress that while the collection of improved data is necessary and a highly desirable outcome, it is very important that the specific data collected is relevant and useable, as this will help ensure that the costs of its collection do not outweigh its usefulness.

How would the data set be used?

PACIA envisages two main uses for an improved data set. From an operational standpoint, it would allow accurate, realistic planning for optimal resource and energy efficiency and allow the measurement of results. We also believe that improved data will be invaluable in the areas of education, marketing and communications.

An example of how additional information can be used to create improvement is the "Resource Map" initiative currently being developed by the PACIA / Victorian Environment Protection Authority's REWaRDS program as part of their Sustainability Covenant. The data set aims to detail the amount, product type, location and seasonality of plastic waste in Victoria. This will assist in planning for recovery, infrastructure and investment for recovery and reprocessing, especially with the prospect of creating collection nodes of similarly valuable materials. Currently no such data set exists and the first stage of the project will investigate the useability of the various types and sources of data used in Victoria, It is hoped that this project would have applications in other states and across other material types.

What role can web-based exchanges play in promoting the efficient disposal of waste and the recovery of recyclables? What role should government play in developing such exchanges?

Web-based exchanges provide a very time and cost efficient way of matching waste with solutions, or materials with processors. PACIA sees government as having a long-term role, initially through providing assistance in the design and setup of the data base, and subsequently playing the role of 'honest broker', thus ensuring that the unavoidable monopolies associated with some wastes and treatment processes do not adversely affect the fairness, efficiency and viability of the process.

One example of such an exchange is the "wastePro" and the "waste eXchange database" managed by the Victorian Waste Management Association and funded by the Victorian EPA. Details can be found at: www.wastepro.com.au.

Section 4: Benefits and costs

How has the waste hierarchy influenced management policy?

The waste hierarchy serves as a standard to guide common approaches to management. In this way it has also standardised the policy decisions by government, industry and NGO's around waste creation, categorisation and it's management – up to certain points. Across the plastics and chemicals industries the waste hierarchy has to date been a useful tool guiding the development of operational policy with the exclusion of energy recovery. It provides a simple guideline as to how waste management options should rank and has allowed a high level of stability and uniformity of practice across the spectrum of waste treatment.

The limits of policy application appear in at least two areas that we deal with:
1. Energy Recovery: The hierarchy sequence is generally adopted in Australia up to the recovery of energy stage where there appears to be broad reluctance to use energy recovery technologies. Many countries in Europe, Asia as well as the USA use energy recovery as part of their integrated waste management solutions. PACIA notes that some level of energy recovery exists for classes of hazardous wastes in cement kilns and the like. However, there is a point of view that political hesitation exists due to concerns about toxic emissions from facilities. Given their significance in other parts of the world, there appears to be an information, or other, gap preventing Australia from making best use of residual waste materials at this lower end of the hierarchy.

2. Non-kerbside collection for recycling: The waste hierarchy is usually applied to kerbside based waste products where items such as packaging have a high chance of being recycled. However, the same items of packaging go to landfill from commercial, industrial, community, sporting and recreational as well as institutional locations. It appears that whilst the hierarchy exists, it's policy outcomes are limited for packaging to kerbside. The same could be said for the use of food products as compost, where the potential energies are lost to landfill.

NOTE: The waste hierarchy published on page 16 of the Commission's Issues Paper reads that the hierarchy in Victoria sequences a second avoidance step following treatment. PACIA understands that hierarchy used by the Victorian EPA allocates CONTAINMENT after treatment, in this way it should read:

- Avoidance,
- Reuse,
- Recycling,
- Recovery of energy,
- Treatment,
- *Containment* and
- Disposal.

PACIA recommends the italicised 'containment' should replace a repeat of 'avoidance' on the published diagram which needs to be amended before the next stage of the process.

What are the advantages and disadvantages of using the waste hierarchy approach to waste management?

The main advantages of using the waste hierarchy are:

- it's simplicity and universal applicability (local and internationally)
- it's ability to provide stability and a uniformity approach across all sectors;

- it allows all parties to speak a common language when discussing waste treatment options; and
- it prioritises actions based upon desired environmental outcomes.

The international applicability of the hierarchy is an element of note given the global market and trading conditions which Australians import and export with. Standard expectations around waste management create a greater degree of certainty for business.

The inherent simplicity of the waste hierarchy can also be one of its major disadvantages. If literally and inflexibly applied the waste hierarchy can lead to inappropriate and inefficient waste options being mandated. Where it is used as a guide it should produce best results. An example is the management of waste in regional and remote locations where prohibitive costs of recycling infrastructure and technology would require inordinately high transport costs to take the waste to the technology in urban centres.

However, as a greater understanding of a range of issues including impacts of waste, treatment technologies, carbon and energy cycles, greenhouse gas emissions etc., divergent views arise as to the best use of the hierarchy in decision making.

Under what circumstances, and for which wastes, is it appropriate to proceed sequentially through the hierarchy?

PACIA is of the opinion that in the majority of circumstances and for most wastes it is appropriate to proceed sequentially through the hierarchy, viewing it as a sequence of preferred options. Again the tool acts as a guide to consider the most suitable options. Care will always need to be applied as the practical and full environmental impacts of decisions must be considered.

When would it be more appropriate to consider these approaches as options rather than an ordered sequence? For example, when would it be appropriate to forgo reuse or recycling in favour of energy recovery?

PACIA believes that the most beneficial way to view the hierarchy is not purely as a suite of options or as a rigid sequence, but a combination of the two. Ideally we recommend that the waste hierarchy should be interpreted as a sequence of preferred options. As to the judgement of when each option is most appropriate, it comes to the paradigm you are working within. If it is one of purely minimisation of material to landfill, then a blanket, mandated approach is appropriate. PACIA holds the opinion that it is in the best interests of business, society and the environment to take a broader view and consider the question from a whole of system perspective.

> For example, Figures from the Independent Assessment of Kerbside Recycling in Australia (Nolan ITU & SKM 2001) provide an example: Where travel to recycling station is greater than 1300km or where number of collections is below 400-500 per 8hr day the overall average benefit drops to zero (pg 12 Nolan ITU & SKM 2001), thus in small and/or regional locations alternatives to kerbside recycling are required.

Part of the issue around recycling compared with energy recovery has to do with contamination from either the contents of packaging or the combination of materials used to manufacture finished goods. An example is used packaging from food courts. Bottles with minor levels of low viscosity fluids such as soft drinks pose little barrier to recycling compared with trays, cups, bags and cutlery with varying amounts of sticky, highly viscous foods such as pasta, rice, vegetables, breads, milk products and meats. The packaging materials themselves are relatively simple to recycle on their own. The heavy food contamination creates the economic and often environmental barriers to retrieving the packaging materials. The residual value of the food as compost is similarly lost by landfilling.

Given the value of the hierarchy as a guiding tool, there may be merit in also attaching a dynamic list of considerations which allow users to make the best use of available information and options. These considerations may include: market conditions, environmental break even points, remoteness and travel distances, total energy yield, technology availability and suitability.

How can Australia improve the economic efficiency with which resources are used in waste management and disposal?

In PACIA's opinion, the introduction of nationally consistent waste regulations and the resultant reduction in the restrictions on moving waste interstate would provide vast improvements in efficiency. A second area where improvement could easily be obtained relates to overcoming technological and economic plateaus. Through direct and indirect funding measures government can have a large impact on improving economic efficiency, therefore encouraging the development, diffusion and introduction of new technologies.

Australia may also be able to improve economic efficiency of waste management by considering and adapting approaches successfully applied in other countries. The Canadian Plastics Industry Association's (CPIA) Environment and Plastics Industry Council (EPIC) has developed an Integrated Waste Management Model (IWM) for Municipalities. The model can be viewed at: http://www.iwm-model.uwaterloo.ca/. The IWM provides a method for evaluating the most suitable combination of technologies for the type, amount and composition of waste and the local conditions and markets.

Section 5: Arguments for government intervention

How large a problem is illegal dumping and littering? What types of waste cause most of the problems?

While PACIA believes it is very difficult to estimate the total cost of littering and illegal dumping there is consensus that it is a major problem. For example, Sustainability Victoria estimates that Victorian councils spend $8.5 million on cleaning up dumped rubbish and roadside litter[1], Marrickville City Council estimates that illegal dumping costs $1million per year to clean up[2] and Randwick City Council collected just over 820 tonnes of illegally dumped material in 2003[3]. While these examples give an indication of the magnitude of the problem they do not accurately reflect its true size or cost as they do not consider material dumped or littered on private land, or in National Parks and other Crown Land, both of which are doubtless significant in terms of both volume and cost. In addition to these data gathering considerations there are the significant social and environmental costs that currently go uncalculated. PACIA is a strong supporter of the development and implementation of a comprehensive and nationally consistent litter minimisation strategy.

An additional element of the littering problem is public perception and the influence of campaign style programs. One example is the plastic bag campaign of the last few years. Plastic bags received icon status well beyond their 2% contribution to the total litter stream. PACIA acknowledges the importance of not only eliminating plastic bag litter, as indeed all litter, as well as the value and exposure which icon issues bring in developing broader recognition for the need to improve. However, the result of the considerable diversion of Federal, State and local government as well as industry and NGO resources into this campaign style issue has meant that litter and other environmental problems previously being dealt with in order of magnitude and impact have been compromised. Work has been slowed and advances impeded to deal with the issue of the day. It is reasonable for society to have a guiding priority list of matters requiring publicly funded attention.

What are the most cost effective policy and enforcement mechanisms for limiting illegal dumping and littering?

PACIA believes the only effective policy for combating littering and illegal dumping must effectively combine the triumvirate of Education, Infrastructure and Enforcement. Litter is a complex issue and there needs to be a considered application of a mixture of these elements to be successful. The approach adopted by the Victorian EPA of encouraging the general public to take on an enforcement role through calling a litter hotline is a novel idea that effectively combines community education and potentially provides an enormous expansion of enforcement capability. Time will tell how successful this scheme will be, but it provides an excellent example of a how novel ideas can potentially be very effective and cost efficient.

It would be valuable for us to have a clearer and consistent view of the dominant causes of litter generation so that we can apply the most appropriate combinations of education, infrastructure and enforcement. This would also assist in the most cost effective management system.

This in turn would be assisted by a nationally consistent method of measuring litter and its impacts. Whilst two main types currently exist, from time to time organisations adapt some litter reports which may create additional confusion.

A third area of benefit would be to have a transparent accounting of how the resources allocated to a program have created change. It is unclear, for example, how funding and program allocations have

[1] http://www.ecorecycle.sustainability.vic.gov.au/resources/documents/051023_Litter_Statistics.pdf
[2] http://www.marrickville.nsw.gov.au/csc/waste/illegaldumping.htm
[3] http://www.litter.vic.gov.au/resources/documents/Illegal_Dumping_-_Hard_Waste_Collection-report-RMIT,_20051.pdf

decreased plastic bag litter to date. Whilst the DEH and some State Governments have taken a balanced, objective and information based approach which has assisted in progress, others have taken a more politically attuned approach with unclear achievements.

A view exists that emphasising education and infrastructure require less direct intervention with individuals who actually create litter. Cultural norms also have an impact in this dimension. Anecdotal observations of litter left behind at Australian sporting events from Mexican waves and other crowd activities pose questions about behavioural norms. An alternative is in countries, including Singapore, where people who litter are dealt significant fines and so culturally litter could be viewed as significantly less acceptable than in Australia. Finding an appropriate level of personal responsibility may be helpful in the best application of the triumvirate.

An additional method of effectively reducing litter and it's impacts can be seen from the work undertaken by groups such as the Victorian Litter Action Alliance (VLAA) including the appointment of full-time information and communication specialists such as the Victorian Litter Champion. VLAA has been successful in creating a common game plan for litter, drawing expertise from industry, governments and NGO organisations. PACIA endorses the value of this consultative approach which facilitates information building, exchanges of local and international views, models and experience and combining these into an agreed approach. Similarly, this method is being applied to the recently formed New South Wales Litter and Illegal Dumping Alliance. PACIA participates on this body as well as VLAA and recognises the value of local initiatives within a national context.

How important are market power issues in waste management? Are there barriers to entry in the market for collecting and recycling waste and what are they?

From PACIA's perspective market power issues in the waste management field are significant and dominant. There are substantial barriers to entry into the market that can be summed up as: availability and stability of end markets, access to and affordability of equipment, and government policy.

In previous times, some of the labour force for the recovery of waste was by volunteer groups who were able to sell the product to recyclers. One example is the Scouts who used to collect bottles, with most scout troops having one or more local bottle depots. It appears that this activity has reduced considerably. It is unknown if this has had an effect on the recycling rate for glass.

Are institutional or regulatory barriers preventing the uptake of better waste management practices and how?

PACIA believes that institutional or regulatory barriers are preventing the uptake of better waste management practices. With around 670 Local Governments and variable consistency between them it is impossible for waste management practices to be as effective as they could be. This insularity at the local level is exacerbated by regulatory differences at the state level that make it very difficult to transport wastes between states and result in there being very limited knowledge of what waste treatment options are available outside the state in which it is generated.

Currently there is no planning requirement for a variety of locations to provide recovery systems for materials including packaging for which strong markets already exist. One example is the lack of planning provision in the construction of new public, commercial or multi-dwelling facilities for adequate numbers of and placement of recycling bins or their retrieval by contractors.

The lost opportunity in these circumstances is that beverage containers which are recovered for recycling from kerbside locations, with stable markets, are not recovered from others where they are often prominent

due to the catering and social elements of the venues. Examples of such venues include: sporting clubs and stadiums, pubs, hospitals, community venues, strip shopping precincts or multi-dwelling apartments.

It would seem helpful that where meaningful amounts of materials with end-markets accumulate, that suitable planning provisions support the increased recovery of these materials.

What regulatory and institutional barriers are impeding the development of markets for recovered resources? What is the case for removing these barriers?

Australia openly competes in a global economy where price signals market behaviour. The domestic economic conditions for manufacturing commodity items is increasingly challenging for many companies with the combination of labour, raw materials and regulatory compliance costs being significantly higher than competing economies. The use of recyclates may create an element of input price benefit which can assist viability.

The export trading of plastic recyclates is commodity based and of increasing interest. The 2005 PACIA recycling survey notes that the percentage of plastic recyclates exported during 2004 was 32.4% - an increase of 5.5% on the previous year, but less than the 36% increase between 2002 to 2003. Whilst the appetite for recyclates in Asia, especially China is recognised, concern also exists as to when this demand may significantly slow and create a glut of material without a destination and the impacts on pricing and the local markets.

This variability has a degree of impact on the local market for uptake of recyclates.

Variability and support for market development also varies between States. In Victoria, landfill fees are fully hypothecated back into identifying and supporting more appropriate waste management options. This system is lacking in most other States and therefore market development is less progressed and more difficult to achieve. Sustainability Victoria provides a high level of support for recovery, recycling and market development. An annual survey of Victorian Recycling Industries is generated which reports on progress against standardised indicators. The most recent report for 2004 can be found at: http://www.ecorecycle.sustainability.vic.gov.au/resources/documents/Annual_Survey_of_Victorian_Recycling_Industries_2003-04.pdf.

Increased regulatory support which includes hypothecation of waste management fees to improve waste management activities would be welcomed in other States.

Section 6: Policy options

How effective has the mix of policy instruments been in achieving efficient levels of waste? What policies have produced the most efficient outcomes?

Most of our contribution here will focus on packaging waste. Issues raised previously relating to the waste hierarchy having limited policy impact, although the low usage of waste to energy and limited away from home collection are relevant here in context.

The current mix of policy instruments, including the National Packaging Covenant, has been helpful to date in promoting recovery to divert plastics packaging from landfill, primarily from kerbside sources. A report commissioned by the NPCIA to help inform discussions on development of the Covenant's overarching targets identified the 2003 levels of packaging recovery by material type shown in Table 1. With subsequent adjustment of paper and cardboard (to 64% recovery) and glass (to 35% recovery) estimates, the estimates in Table 1 have become viewed as the most accurate current estimates of packaging recovery in Australia. The 48% rate of total recovery has been adopted as the baseline estimates for the Covenant. It is encouraging to note that given the identified shortcomings of the previous Covenant, around half of the packaging generated in Australia is being recycled under approaches that are largely voluntary in nature. This voluntary/co-regulatory approach has been improved and strengthened in the new Covenant to ensure that the performance continues to achieve and provide cost effective and tangible results.

Table 1: 2003 Australian recovery for packaging materials

	Kerbside/Municipal Recovery		**Away from Home Recovery**		**Overall Recovery**	
Material	**Tonnes**	**%**	**Tonnes**	**%**	**Tonnes**	**%**
Paper/cardboard	333,300	42%	1,200,000	94%	1,533,300	74%
Glass	320,000	68%	30,000	4%	350,000	30%
Plastics	92,500	28%	42,400	13%	134,900	21%
Steel cans	46,200	44%	46,200	44%	92,400	44%
Aluminium cans	18,000	79%	11,000	48%	29,000	63%
Total	**810,000**	**47%**	**1,329,600**	**54%**	**2,139,600**	**51%**

Source: Reproduced with permission by MS2 and NRS 2005

These impressive results cannot be directly attributed to any one approach. A variety of factors including, but not limited to, policy instruments is responsible:

- strong public support for, and participation in, recycling programs, including kerbside recycling;
- concentration of population in and adjacent to capital cities and other major cities;
- implementation of the original Covenant;
- provision of recycling collection and processing infrastructure by local governments and industry;
- generally strong end use markets for recovered materials, including overseas markets;
- procurement policies and practices by industry and all levels of Government; and
- reasonable jurisdictional support to help optimise recycling programs.

One of the key strengths that needs to be noted is the Covenant creating groups of stakeholders who are able to work cooperatively and collectively on improvement. This is a significant improvement over previous, singular approaches and cannot be highlighted enough. The capability has been created for strategic links both within and between industry, governments and community groups which previously did not exist.

Policy Instruments for Packaging

Policy instruments for packaging consistent with EPR and product stewardship principles are provided in Table 2, and examined in detail in the accompanying MS2 (2006) report.

Table 2: Overview of Policy Instruments Consistent with EPR and Product Stewardship

Policy Instrument	Comments[4]
Take-back requirements Mandatory product take-back Voluntary or negotiated take-back programs	Take-back is viewed as the purest form of EPR Often associated with reuse and/or recycling targets Responsibilities may be discharged through participation in a Producer Responsibility Organisation (PRO), the approach usually preferred by industry due to lower cost and greater control Australia's National Environment Protection Measure (NEPM) on Used Packaging requires take-back for brand-owners not signing or not in compliance with the Covenant
Standards Minimum recycled content standards (often referred to as 'rates and dates') Industry funding organisations (IFOs)	Recycled content standards have generally been intended to increase local recycling markets Recycled content standards must deal effectively with the large volume of imports into respective jurisdictions IFOs solely address funding, not other responsibilities

Table 2: Overview of Policy Instruments Consistent with EPR and Product Stewardship (continued)

Economic Instruments Deposit-refund schemes such as container deposit legislation (CDL) Advance disposal fees (ADFs, increasingly referred to as advance recycling fees, ARFs) Taxes and/or subsidies Upstream combination tax/subsidy (UCTS) Tradeable resource recovery certificates (RRCs)	Economic instruments provide a direct financial incentive to take desired action(s) Some CDL programs are viewed as full EPR, rather than as economic instruments The OECD (2001) states that an ADF does not constitute EPR per se, even it may serve to recover costs for EPR initiatives; however, ADFs may be viewed as EPR if they transfer sufficient physical or financial responsibility to producers (OECD 2005) Material taxes aim to reduce the use of virgin or difficult to manage materials in favour of recycled or less difficult materials Economic instruments may also be referred to as market-based instruments (MBIs)
Other industry-based measures Covenants Industry Codes of Practice Leasing	May be co-regulatory (such as the Covenant) or used in conjunction with other approaches Leasing is impractical or impossible for products with relatively short life-cycles, such as packaging

Source: MS2 2006.
Adapted with permission from NPCIA's 'Waste Generation and Resource Efficiency of Packaging'

How are targets being set? What consideration is given to the social, environmental and economic costs of achieving these targets? How should targets be set to optimise social, environmental and economic outcomes?

With regard to the National Packaging Covenant, PACIA suggests that targets to a large extent and KPIs to a lesser extent were set based primarily on political requirement rather than full consideration of their social, economic and environmental costs and benefits. This was also noted in an independent review of the Covenant's RIS carried out by ACCESS Economics, which stated that the true costs of the proposed Covenant had not been taken into account. Despite concerns about the robustness of the RIS and the setting

[4] Derived from a range of sources, including OECD 2001; Walls 2003; West and Hogarth 2005 and MS2 experience.

of overarching targets, the Covenant, "seems to ACCESS Economics to constitute a prudent evolutionary approach to tightening industry performance requirements" (p.1, ACCESS 2005).

Access Economics suggest that the prescribing of over-arching recycling targets, divorced from consideration of how, and at what cost, they are to be achieved at the business-specific level, ranges from being ineffective to, at worst, generating net costs to the community rather than net benefits. PACIA strongly supports the argument made by Access that unless targets are linked to practical business specific actions, there are significant questions posed as to how anybody can be sure they will be achieved, and most importantly, at what (social, environmental and economic) cost?

Access Economics suggest that the implementation of targets as contained and reviewed in the RIS associated with the revised Covenant to be completely inconsistent with the spirit and intent of the RIS process itself. This supports the PACIA view that the setting of targets and the consideration of the social, environmental and economic impacts were not linked to business specific actions. Accordingly, a robust and rigorous cost benefit analysis, as required under the RIS process, was not undertaken. The targets were set based on inaccurate and shallow (at best) investigation into the actual impacts on business.

The Covenant calls for an overall packaging recycling rate of 65% to be achieved by 2010. This is despite the current overall Australian packaging recycling rate of around 50% being comparable to the European packaging recycling rate of 55% overall. The European material recycling rates are viewed by most stakeholders as the highest recycling rates that can practically be reached. As Australia pushes up against the point of diminishing returns for packaging recycling, marginal costs of achieving higher recycling rates will continue to increase significantly. It is inevitable given the current challenges facing manufacturers of fast moving consumer goods in Australia in terms of increases in input costs and pressure on margins from the retail sector, that such costs will surely be passed on to consumers.

PACIA accepts the targets embodied in the revised Covenant, but view their initial establishment as less than desirable. The primary rationale for this view is that most EPR and product stewardship approaches have moved away from mandated targets toward more encompassing approaches addressing a wider range of environmental impacts. The imperative for targets and KPIs under the revised Covenant resulted primarily from the lack of effective monitoring and accountability consistently noted in reviews of the original Covenant.

PACIA was involved in the development of targets, in close consultation with jurisdictional, Commonwealth and NGO representatives. The process was disruptive and disjointed, with advocacy groups seeking target initial proposals based on unrealistic, unsubstantiated and inaccurate representations of the current state of packaging recovery in Australia and inappropriate comparisons against other programs, especially those in Europe.

The NPCIA developed detailed modelling, based on the best available information, of target recycling rates that could be achieved with substantial effort by industry. Despite the best efforts of the NPCIA, these estimates were only marginally taken into account during the actual establishment of targets. This was largely due to the lack of recognition by some stakeholders involved in the process that Australia performs especially well against world standards for packaging recycling and that the upper limits of practical recycling are being achieved for most packaging materials.

Based on the above experience, PACIA cautions against the use of targets based on less than a full consideration of social, economic and environmental costs and benefits, and against failure to understand practical realities of what can be achieved. Where targets are established, they should be reasonable, achievable with an appropriate effort and industry should be allowed the flexibility to achieve the targets in the most cost-effective and resource-efficient manner.

PACIA views the 'top down' setting of 'over-arching' targets as was undertaken as part of the revised Covenant as poor policy development. Without consideration of a practical mechanism linking business/consumer/government actions to the achievement of such targets, there is no practical way of assigning responsibility for their achievement or failure to participants in the revised Covenant.

In this respect, PACIA supports the finding of Access Economics that the RIS itself has been forced to assume specific environmental outcomes in order to evaluate particular policy options in place of the current Covenant. In addition, policy makers have not examined 'the implementation steps, practicality or desirability of achieving (the targets)'. PACIA is of the view that any targets should be developed from the 'bottom up' rather than from the 'top down'. By engaging industry participation in their development, and aggregating any 'over-arching targets' from individual targets and actions, all of the practical shortcomings identified will be considered. It is possible to develop waste management policy that 'pushes the envelope' but in a cost-effective, practical manner.

Once again, the development and use of suitable environmental break even points will be valuable in guiding decision making.

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How should Australia's performance in waste management relative to other countries be measured? What role is there for key performance indicators in making such comparisons and which KPI's are the most useful for public policy purposes?

While recognising the need and / or value for measuring Australia's performance relative to other countries, PACIA would like to stress that any indicators need to be carefully selected to ensure that the information they provide is meaningful and valid in contexts other than international comparisons. Following from this we would suggest that a framework based not around simple-to-measure yet potentially misleading indicators such as tonnages of waste diverted from landfill, but on the flow of energy and resources through the system would be most useful. An additional example of confusion is the deliberate aggregation of mechanical recycling with energy recovery activity in some European countries which add up to total recovery value higher than Australia which employs only mechanical recycling. This creates an unbalanced perception of Australia "lagging behind".

In addition, the total cost per tonne may be useful to measure cost effectiveness. Anecdotal evidence suggests that the costs in achieving at least European recovery rates are orders of magnitude higher than in Australia. Again this information is unknown, but would be valuable given issues of population distribution and infrastructure. PACIA is aware that currently much of this data is not collected or calculated, and suggests that in a similar fashion to the strategy adopted by the NPC, the collection of meaningful datasets be set as one of the initial KPI's.

How well have these policies worked in generating economically efficient levels of recycling? What policies or mix of policies are likely to work best in this regard?

PACIA believes the combination of policies in Victoria that target pre and post consumer waste have been highly successful in generating economically efficient levels of recycling. This includes the hypothecation of landfill charges back into improvement programs as well as partnership programs with industry which harness specific information and, expertise, and focus it into sector based improvements.

Examples of these programs are the Sustainability Victoria / PACIA Industrial / Automotive Plastics Management project as well as the Victorian EPA / PACIA Sustainability Covenant referred to earlier. Both of these partnerships have created new consultative groups, generated new knowledge able to assist improved decision making and have marketing and communication functions which recognise the importance of communicating progress.

Without hypothecated funding for specialist managers to run these programs, groups within industry and government would not have had the chance to participate and apply expertise and knowledge to creating positive change.

How useful is full life-cycle analysis in determining the environmental and economic costs and benefits of recycling various products?

Full life-cycle analysis (LCA) is useful in driving improvements over time for individual products. We do not, however, support the use of LCA to develop policy, as framing and assumptions are easily called into question and policies based primarily on LCA would fail to adequately account for product innovation and changes over time. Policies should be based on full considerations of social, economic and environmental costs and benefits, within which LCA can have a complementary role.

Whilst the benefit of LCA's is their expanse of data and detail, this can also be a barrier to their application in some instances. Comparisons using LCAs' need to ensure consistency of data, boundaries and methodologies.

In many instances, the use of Life Cycle Thinking tools can deliver more appropriate guidance for decision making. As part of the Victorian EPA / PACIA Sustainability Covenant, a project is being undertaken that seeks to develop and apply life cycle thinking tools which are more succinct and useful in decision making.

Are there particular products or locations for which disposal rather than recycling might be a more efficient option?

There are a number of situations where options other than recycling are preferable. In their 2001 study of the net gains of kerbside recycling in Australia, Nolan ITU and SKM found that in areas where travel to recycling station is greater than 1300km or where number of collections is below 400-500 per 8hr day the overall average benefit drops to zero (Nolan ITU & SKM 2001), thus in small and/or regional locations alternatives to kerbside recycling are required. In situations such as this PACIA's preference is for development of local recycling markets where feasible, or for recovery of energy in line with the Waste Management Association of Australia's Sustainability Guide (WMAA 2005). In addition to distance from market considerations there are products that are contaminated with secondary substances or that by their very nature are difficult or inefficient to recycle. Here a TBL or net gains approach is recommended to determine whether the recovery of embodied energy from the material is a more efficient option than recycling and the associated processing, treatment and disposal of resulting residues.

How has government procurement policy affected recycling levels? How important is the demonstration effect of government actions?

Government and business procurement are equally fundamental to creating stable demand for recovered materials and to demonstrating leadership by example. Procurement will be increasingly important to stimulate demand for increased recovery under the NPC as it strives to achieve the overall targets. PACIA acknowledges the success of existing procurement policies and programs and supports their improvement and expansion.

The consistent specification for using locally created post consumer recyclates would be helpful in promoting local recycling market development. Concern exists that whilst some specifications for procured items such as mobile garbage bins include post-consumer recyclate, the purchase of these items from overseas sources does not support the local market.

What are the economic, environmental and social benefits of recovering energy from waste?

Where the practical, cost-effective limit of recycling has been reached the recovery of energy from waste (EfW) is a desirable outcome. Advantages of EfW include:

- Reduction of volume to landfill
- Improved energy efficiency
- Less coal/other fossil fuels burned
- Reduction in recycling residues (often hazardous and requiring containment)
- Reduced transport costs
- It is 'recycled energy' in that the product has been used at least once already

In additional, EfW provides retrieval of energy that will only be lost in landfill where the capability to deal with contaminants such as residues from packaging or multiple material types is limited by technology or end-markets.

The Victorian EPA is currently undertaking an investigation into the viability of EfW in Victoria.

What is hindering the greater use of recovering energy from waste in Australia?

From PACIA's perspective, one of the major hindrances to the increased use of EfW in Australia is a lack of understanding of EfW which has lead to concern and a negative attitude toward the technology by the general public. This has been, in some instances, further fuelled by the activities of some environmental advocates. The government at all levels has a key role in supporting the legitimacy of alternatives and in educating all parts of the community of the benefits of applying complementary alternatives such as EfW. It also has a role in ensuring the adoption of best practice technologies and compliance of new technologies with appropriate regulatory regimes.

Are there particular products or locations for which recovering energy from waste would be the most efficient approach to waste management?

As discussed in responses to points 6.6 and 6.8, PACIA supports EfW in accordance with the WMAA (2005) Sustainability Guide when: the practical limit of recycling capability has been reached; the remoteness of communities makes recycling or other treatment unviable; or where the environmental cost of recycling is greater than that of EfW.

Is it appropriate to hypothecate levies to other waste management activities? Does this provide the correct level of funding for such activities?

PACIA believes it is appropriate to hypothecate levies to other waste management activities. The Victorian system of hypothecating landfill levies back into recycling programs has resulted in Victoria having the highest overall recycling rate in the country.

What are the advantages and disadvantages of extended producer responsibility and product stewardship schemes?" and "Which products are most amenable to these arrangements?

PACIA believes whilst EPR is often touted as a means of shifting or spreading waste management costs, applying EPR to packaging (as opposed to hazardous or difficult-to-manage wastes) is inconsistent with OECD principles and objectives for EPR.

Collection and disposal of non-hazardous end-of-life products from households are generally the responsibility of municipal governments and funded through general taxation such as rates or through user charges for households and/or businesses. The system and societal costs that may result from the introduction of problematic materials into such systems are significant, and it therefore makes sense to

establish through EPR separate, controlled channels for toxic or hazardous products such as tyres, batteries and mercury-containing products (OECD 2005).

Attempts to apply EPR to packaging, especially in Europe, have introduced significant social and economic costs; yet environmental results may be viewed as mixed at best. Put simply, packaging waste does not justify EPR instruments, either from an economic or an environmental perspective.

Separate collection schemes and EPR and product stewardship approaches (such as ADFs and ARFs) and development of producer responsibility organisations (PROs) are most appropriate for end-of-life management of hazardous or difficult-to-manage products such as certain electronics, oil, tyres and lead acid batteries. For such products, PACIA supports the adoption of product stewardship and shared responsibility principles and approaches that address the full life-cycles of products and the reduction of overall environmental impacts. It is noted that a variety of approaches may be required in combination to achieve desired objectives.

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Another issue which Australia needs to address is access to future knowledge, technology and expertise regarding how waste products are best managed. Australia faces a future knowledge deficit challenge with an aging population retiring from industry and government departments where this expertise has been held and known to be accessible. Additionally, any loss in local manufacturing activity takes with it skills, expertise and networks specific to products and technology types. With a projected increase in the demand for goods, being able to meet increased expectations for lower waste levels and improved treatment options will require more resources, with local contextual knowledge and experience, not less.

What are the advantages and disadvantages of the different regulatory options for setting up extended producer responsibility or product stewardship schemes: self regulation, co-regulation and explicit legislation?

Self regulation

In broad terms, self-regulatory approaches provide significant flexibility for progressive companies but can lead to market distortions due to 'free riders', or 'non-participants' that gain unfair competitive advantage by not participating in EPR or product stewardship schemes and thus not contributing an appropriate share of the costs of such schemes despite their contribution to the waste stream. In schemes affecting a large number of companies or where responsible parties are difficult to track, free riding can threaten the financial viability of entire schemes (EPHC 2004, OECD 2001).

Co-regulation

Co-regulatory approaches help to address free riders through underpinning legislation such as the NEPM for Used Packaging and the NEPM for Product Stewardship currently under development by the Environment Protection and Heritage Council (EPHC). Co-regulatory approaches such as the Covenant provide an equitable and effective balance of industry initiative and regulatory underpinning to address free riders, as addressed in Section 3.

The OECD (2005) has found that co-regulatory approaches or market-based instruments (MBIs) such as tradable recycling credits allow greater flexibility, help to ensure goal achievement cost-effectively and provide greater transparency, in contrast to explicit legislation such as mandated targets.

Explicit legislation

Regulation and enforcement of explicit legislation is by far the most expensive of the regulatory approaches considered. Further to this, explicit legislation is not inherently more effective at reducing negative social and environmental externalities. Explicit legislation and mandatory take-back programs generally occur where:

- products contain toxic or hazardous substances (such as certain waste electrical and electronic equipment (WEEE));
- the products are integral to established recycling programs; and
- affected industries have failed to respond effectively to Government pressure to accept an appropriate level of responsibility for their products.

A significant disadvantage of explicit legislation such as EPR is that there is no upper limit on costs of such approaches, as EPR costs are incurred even if they exceed benefits (OECD 2005). Attempts to apply EPR to packaging, especially in Europe, have introduced significant social and economic costs; yet environmental results may be viewed as mixed at best. Recent reports for the review of the European Packaging and Packaging Waste Directive (PPWD) have found that (Perchards et al 2005, PIRA and ECOLAS 2005):

- European packaging taxes such as those under the PPWD are discriminatory and serve mainly as a revenue source, rather than driving environmental improvements.
- European packaging taxes have a significant distortive effect on retail pricing.
- Related programs implementing EPR and product stewardship for packaging also entail high economic and social costs without delivering significant environmental improvements.
- There is general consensus that the highest recycling rates that can practically be reached, from both an environmental and an economic point of view, have already been achieved.

Whilst these last two points may seem contradictory, recycling rates by themselves can represent environmental improvement, but must be understood in context with overall social, economic and environmental impacts, and practicalities of achieving reasonably efficient resource use. In 2001, the EU-15 recycled 30.7 million tonnes out of 56.3 million tonnes of packaging waste, for a 55% packaging recycling rate overall. However, in 2001 only 9% of total packaging recycling in the EU-15 could be directly attributed to the PPWD and of environmental improvements due to packaging recovery, only 8-9% was directly related to the PPWD (PIRA and ECOLAS 2005). The remainder came from industry initiative and efficiencies undertaken within companies such as lightweighting and innovation, as well as pre-existing recycling programs.

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What should be the relative roles of industry and government in the development of such arrangements (as the Covenant)?

Schedule 1 of the Covenant details appropriate obligations for the packaging supply chain and for governments. Whilst industry must adopt product stewardship principles, jurisdictional governments are responsible for enforcing the NEPM and governments at all levels have responsibilities consistent with achieving Covenant objectives. All participants in the Covenant process have specific obligations to help achieve the overarching targets and KPIs detailed in Schedule 2 of the Covenant. PACIA supports the current allocation of roles under the revised Covenant.

PACIA strongly supports a whole of system approach to the revised Covenant. The achievement of the targets established under the new Covenant will require each signatory to undertake action and make improvements. This includes governments. The likelihood of achieving the targets will be significantly

enhanced if all stakeholders in the process remain committed to the Covenant as the primary policy instrument for packaging waste management.

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In addition, the value of creating more accurate information to guide future decision making cannot be under emphasised. It is hoped that more accurate information is applied at both ends of the equation: establishing relevant and practical outcomes as well as focusing effort on initiatives which produce the greatest results.

How effective has the National Packaging Covenant (in both its initial and subsequent forms) been in promoting optimal levels of packaging wastes?

Initial Covenant

The initial Covenant was effective in raising awareness of packaging-related issues within corporations, providing a framework for packaging product stewardship and increasing collaboration within and between governments and product chains. It created a number of useful data sets including the creation of the annual PACIA Plastics Recycling Survey.

It is recognised that it could have been more effective in communicating the various and valuable progress, projects and outcomes in a way which engaged community and NGO groups with particular concerns about packaging. A significant number of stakeholders, especially local governments, were not engaged in the process (Nolan-ITU 2004). There is also an opportunity for closer engagement with collectors and MRF operators in identifying further opportunities for both kerbside and away from home used packaging.

There was so much inherent flexibility for companies that progress could not always be measured in the most effective manner. It was also felt that while the NEPM was an effective regulatory safety net for signatories, the NEPM enforcement would need to be more visible and rigorous (ISF 2004, Nolan-ITU 2004). Whilst other reviews sought to strengthen and renew the Covenant, one review (ISF 2004) found that the initial Covenant was not an effective instrument for reducing the generation of packaging waste and that an alternative policy framework was needed.

The NPCIA (2004) commissioned an independent review of representative Action Plans submitted under the original Covenant. The review found that more than two thirds (68%) of the Plans reviewed made a clear effort to deliver against at least some of the objectives set out in the Covenant. The review also found that around 20% of Action Plans were good or outstanding but in contrast, 29% of Action Plans adopted a relatively basic response of going through the motions of developing a plan but demonstrating little understanding or commitment to the process. Five plans (2.5%) were considered unacceptable. These findings suggest that nearly 70% of company signatories to a voluntary process (underpinned by a regulatory NEPM) have taken the process seriously as reflected by their efforts in developing and reporting Action Plans under the original Covenant.

Revised Covenant

PACIA believes it is too early into the revised Covenant to effectively quantify its impacts and progress against overarching targets. However, PACIA is of the view that in contrast to EPR, 'shared responsibility' approaches such as the recently strengthened Covenant are clearly the most efficient and effective vehicles. The available evidence proves the Covenant provides a realistic and appropriate balance of resource use, efficiency and recovery throughout the life-cycle of packaging. Such a valuable and equitable mechanism therefore warrants continued Government support for a variety of reasons:

- Australia has packaging recycling rates comparable to those of far more costly EPR and product stewardship schemes in other countries, where the highest practical recycling rates have been achieved.
- The Covenant emphasises reduced overall environmental impacts and shared responsibility across the packaging supply chain, consistent with recent approaches to EPR and product stewardship. In contrast, 'traditional' EPR focuses predominantly on producers and end-of-life management of hazardous or difficult to manage products.
- Given the diverse nature of the industry shared arrangements provide capacity and flexibility to innovate and invest where they can make a difference, without the costly impost of regulation.
- The Environmental Code of Practice for Packaging (ECoPP) and its strengthened linkages to the Covenant provide stronger incentives for DfE than alternative EPR approaches.
- Strengthened reporting requirement and use of key performance indicators (KPIs) under the Covenant and steps being undertaken by the NPCIA are likely to result in better data and feedback to address impacts of packaging than alternative approaches.
- The Covenant has industry support and engagement, which allows investment and innovation and provides industry with flexibility to undertake measures they know will reduce impact across the life-cycle perspective.
- European debate has shifted away from EPR as an end in itself and more toward Integrated Product Policy (IPP). Under this approach a range of instruments are targeted to the various stakeholders (such as producers, consumers and governments) in an attempt to send clear signals about environmental performance to each stakeholder and reduce overall environmental impact. The Covenant is therefore broadly consistent with IPP principles currently being pursued elsewhere.

An independent review of the Covenant's regulatory impact statement (RIS) carried out by ACCESS Economics found that despite several concerns about the robustness of the RIS and the setting of overarching targets, the Covenant "seems to ACCESS Economics to constitute a prudent evolutionary approach to tightening industry performance requirements" (p.1, ACCESS 2005).

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An additional element is that there has been over the past ten years or so, ongoing weight reduction or down-gauging of products by a combination of material advancement and supply chain modification and other factors. In some cases, this has been in the range of 25% - 40%. This dimension has not been taken into account as the NPC focuses on future improvement. This element is, however, built into the Environmental Code of Practice for Packaging, a guidance for the development and design of new or reviewed packaging.

What is the role of levies in EPR and PS schemes?

Levies are means to raise money. How that money is used to create improvement is the issue which consumes most debate. Raising money does not solve problems. Applying funds to activities which quantify the issue, seek viable solutions and assist the implementation of these anchored against measurable results are valid use of funds in the initial term. Where funds may be required, their allocation from current waste management charges and relevant government sources makes sense as society has received the benefit of the item which may end up as a waste. Where short-term top-up funding may assist this process, a levy may be one appropriate mechanism to consider.

Much of the work of this Commission deals with the most effective framework for dealing with this challenge and we do not seek to reiterate this element here. Suffice to say that objective information and sound science must be applied to solving problems.

In our view, the industry-wide and supply chain based voluntary approach is the most appropriate mechanism for achieving positive outcomes for end of life materials and products. Product Stewardship covers all stages

of a product's life and is intended to prevent misuse, mishandling or other activities that might result in harm to people or the environment.

Manufacturers, importers and suppliers of products use their best efforts to prevent the misuse of a product and its packaging. Member companies have a shared responsibility for the storage, handling, use, recycling and safe disposal of their products throughout the life cycle, and endeavour to extend their influence throughout the supply chain through effective education and communication strategies. Any assessment of safety, health, environmental impact and waste management should have priority over by commercial and technical considerations.

As society strives to improve quality of life, innovation delivers a range of products and services to meet peoples' needs. Having all of the supply chain partners involved in issues that might arise, at any part of a product's life, provides a wealth and diversity of knowledge to address concerns. Strategically working with the community and governments allows industry to design and deliver preferred outcomes for all concerned. For goods manufactured in Australia this also provides stability for investment, employment and skills retention vital for our countries future.

Our concern with the objectives of EPR in singling out manufacturers to bear significant physical and/or financial responsibility for the environmental impacts of their products is that this could reduce the likelihood of achieving the desired outcomes due to targeting a single functional point in the supply chain rather than encouraging broader involvement and consistency. In contrast, under EPR proposals, consumers do not take any responsibility for the waste. The introduction of regulatory measures will only drive prices of products upward as industry would seek to recover their costs. Consumers will be reluctant to pay higher prices for goods and would seek cheaper options that are not covered by the EPR.

Ultimately this could involve the government having to enforce a compulsory EPR scheme as happens in Europe, the level of assessment required to demonstrate compliance may prove to be close to unsustainable, adding significantly to costs and the resultant imposition on industry resources.

We are aware that programs such as fees for used tyres and oil containers for car servicing exist. The effectiveness of these programs is diminished where the funds are not directly applied to activities which create improvement. Concern exists in some quarters that not all of the funding for some of these schemes are applied back to the problem, rather used for consolidated revenue. This has the compounded effect of not only not fixing the problem, but reducing confidence in programs seeking to create useful change.

How can or should waste disposal and recycling facilities be treated in an urban planning context?
PACIA believes the current stigma attached to "waste disposal" facilities is outdated, counter productive and inaccurate. Best practice waste facilities of today are not the dirty, smelly open pit 'tips' of twenty years ago; segregation of waste streams, increased environmental responsibility and vastly improved recycling and composting has totally transformed them.

If we are to move forward and make the most of our resources a fundamental step will be to change the general perception of these facilities. They are no longer the end of the line into which we dispose of unwanted materials, but are necessary and valuable step in the cycle of energy and resource usage and should be treated as such.

The Canadian Integrated Waste Management Model is one option to be considered.

What are best practice examples of using enforcement and education to reduce the extent of littering?
PACIA believes that Singapore provides a best practice example of litter reduction. While not suggesting Australia wholeheartedly embraces the Singaporean model, there are many aspects of their education, infrastructure and enforcement policies that could easily be adapted to the Australian situation.

What are the advantages and disadvantages of container deposit legislation in reducing litter and increasing recycling? What part do they play in optimising waste management outcomes?

PACIA concurs with the Inquiry's observation that "container deposit schemes can lead to higher levels of recycling for selected products, but can lead to costly duplication of collection systems and adversely affect the viability of kerbside collection for other recyclable materials" (p.30, PC 2005).

PACIA views CDL as a potential costly and inefficient threat to current recycling activities, without resulting in increased optimisation of waste management and only limited positive impacts on litter.

Various studies have found that there is no direct link between the presence of CDL and optimised waste management outcomes such as increased overall recovery, reduced packaging to landfill or reduced environmental impacts of landfilling (C4ES 2000, Perchards et al 2005). In their review of the PPWD, Perchards et al (2005, p.130) found that,

> "There is no evidence that mandatory deposits improve the efficiency of recycling systems – collection arrangements for non-beverage packaging are still needed, and one system is cheaper to run than two. The results reported by the EU-15 countries show that deposit systems are not necessary for the achievement of high recycling rates."

PACIA believes CDL can be effective in increasing beverage container recovery and decreasing beverage container litter, which generally accounts for 8-10% of the litter stream, but has no effect on other litter types. However, CDL increases the supply of recovered materials without increasing demand for the materials and requires the establishment of separate, competing systems (C4ES 2000, Perchards et al 2005). These conditions introduce market distortions that reduce the cost-effectiveness of recycling programs. Florida repealed CDL provisions due to take effect, in favour of a market-based ADF to promote recycling markets to address this specific concern (MS2 2006).

C4ES (2000) first pointed out that, prior to the introduction of CDL in Germany, CDL had always been introduced first and then comprehensive waste management and recycling programs could be designed around the CDL programs, thus reducing conflicts with recycling programs and contracts.

Germany introduced CDL on top of their comprehensive waste management and recycling program in order to penalise the beverage industry for failure to achieve an arbitrary 72% reuse quota for refillable beverage containers. As a result, the introduction of CDL cost the German industry PRO (DSD) over €300 million (currently around A$490 million) in 2003 and led to a net loss of 9,530 jobs (EUROPEN n.d.). The program has also resulted in a net increase in environmental impacts and significant market distortions. To avoid the additional deposit, consumers frequently buy less expensive refillable bottles, then litter them (Perchards et al 2005).

Introducing CDL on top of comprehensive recycling programs such as those in Australia would entail significant conflict. These conflicts are highlighted as recycling programs increase their recycling rates and reduce their costs. For example, C4ES (2002) found that the introduction of CDL in the Australian Capital Territory (ACT) could at best result in a 10% increase in beverage container recovery. However the marginal cost for recycling would increase from $110 per tonne to $900-$1,900 per tonne for a 10% recycling rate increase. Council recycling costs would therefore not go down, even though less material would be recovered. Importantly the evidence suggests council rates could actually rise if CDL was implemented in top of comprehensive recycling programs (C4ES 2000).

Even studies that disagree in their recommendations on CDL are remarkably consistent in estimating that introducing CDL in Australia would double or triple the cost per household of kerbside recycling in Australia (C4ES 2000, EPA Victoria 2003, ISF 2001).

C4ES (2000) further found significant difference in CDL collection depot viability between urban and rural areas. C4ES modelling showed that for NSW rural areas to try to achieve the same coverage as the South Australia CDL system would require $123 million in establishment costs alone to create 500 depots, despite only 30-60 of the depots being commercially viable on their own. This raises important policy issues – namely introducing CDL in Australia would either require significant subsidisation in rural areas or charging consumers deposits they may not actually be able to redeem.

Although in theory deposit-refund schemes such as CDL can be effective in addressing illegal disposal, they are not suited to high volume waste streams (MMA and BDA Group 2003). The impacts of CDL are also highly dependent on the deposit providing enough incentive to warrant the extra effort to redeem the containers, and the ability of CDL to provide incentives for return is debatable. For example, return rates are especially low for reusable agricultural and veterinary chemical containers, even though they can carry deposits of $350 or $1,000 and users can return the containers to the same stores where they purchase new supplies. To keep up with inflation, CDL deposits would have to be in the order of 20-30 cents per container. The question is whether people would redeem containers, and if so, how? Given the strong support for kerbside recycling in Australia and 85-95% access to kerbside recycling, it is less likely that people will go out of their way to redeem containers (MS2 2006).

Martin (2005a, 2005b) has highlighted the potential for significant diversion of revenues from recycling programs under CDL if consumers are motivated to return the containers. Martin (2005a) found that materials covered under CDL contribute 54% of the volume, yet 77% of the financial value of kerbside recycling in Tasmania. In addition, Martin (2005b) found that materials covered under CDL contribute 33% of the volume, yet 59% of the financial value of kerbside recycling in Northern Queensland. Economic viability of such programs would be threatened to the extent that consumers redeem containers through CDL collection depots rather than through kerbside.

While Australians have demonstrated their commitment to kerbside collection, the proportion of Australian householders that sort their recyclables and/or their green waste from their garbage is one of the highest worldwide. The introduction of CDL would require a further sorting of householder rubbish, which may act as a deterrent to recycling rather than an incentive. The extra effort in sorting by consumers could be responsible for South Australia's overall diversion rate being lower than the National average.

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What effect is international trade having on the level and disposal of waste in Australia? What effect is international trade having on recycling?

It is widely accepted that international trade is increasing the levels of both waste generation and disposal, especially in the realm of post-consumer waste, as the spread of cheap, short life-span consumer products encourages the development of a 'throw-away society'. This negative impact of international trade is somewhat offset by the positive effect it has on recycling. PACIA recycling surveys show that in 1997 a total of 93,547 tonnes of plastics were recycled 16% of which was exported, in 2000 this had increased markedly to 167,673 tonnes recycled and 26% exported, and by 2004 these figures had reached a total of 190,979 tonnes recycled with 32% of this being exported (PACIA 2005).

Refer to earlier comments.

Are there any significant regulatory differences between the states and territories in waste management? What are the costs of these differences?

There are significant differences between the regulatory approaches that the states apply to waste management, a key example being the CDL programs that have been in place in SA for many years and are being developed for WA. The costs of these interstate variations are difficult to quantify as they include

economic, environmental and social factors. Some examples of the costs include: increased burden of duplicate paperwork, difficulty of transport across borders resulting in less than optimal waste treatment outcomes, and a lack of business certainty resulting in lower investment.

When is it appropriate to implement uniform national approaches and when is it appropriate for the jurisdictions to pursue their own agendas?

Nationally consistent policy approaches are critical to limiting compliance costs of companies and in recognition that viable trade generally shows little regard for jurisdictional boundaries. PACIA understands that jurisdictions may feel compelled to pursue their own agendas if they feel that businesses are not responding effectively to initiatives or policy approaches that are national in nature.

PACIA also supports jurisdictions working with industry leaders in innovative environmental initiatives and where jurisdictional action is necessary to support underpinning legislation such as NEPMs. However, jurisdictional efforts should be complementary to, rather than undercutting, nationally consistent initiatives and be based on a full understanding of social, economic and environmental considerations.

What role should the Australian government play in pursuing uniform national approaches when this is the appropriate course of action to take?

We agree with and endorse the need for national uniformity for waste management. PACIA represents companies with activities in all states and territories of Australia and encourages the development of nationally consistent guidance and regulation by all state and territory governments.

In the same way that broad stakeholder involvement with products themselves provides greater synergy and strength for problem solving, guidance and regulation consistency amongst jurisdictions creates similar benefit. The alternative to a uniform approach is for companies to have to deal with the requirements of multiple regulatory frameworks and their unique requirements. This in turn adds cost and complexity rather than building workable platforms for necessary progress.

We encourage the implementation of programs of ongoing national uniformity. We believe this is best achieved through a coordinated approach through the Environment Protection and Heritage council. We would be pleased to provide advice and guidance on how this can best fit our member's products.

Regulatory impact statements

Any proposal to introduce a new regulation or instrument to 'manage industry' should be accompanied by a comprehensive regulatory impact statement, prepared by government for consideration by stakeholders with the proposal. A regulatory impact statement assesses the likely impacts, both costs and benefits, of the proposed regulation on all sectors of the community.

Voluntary vs. Regulated

PACIA believes the success of voluntary programs can be attributed to:

- Recognition across stakeholder groups;
- Contribution from stakeholders to the issues;
- Support from industry and governments, particularly with regard to resourcing;
- A willingness to allow industry to determine the implementation phase of programs.

PACIA has a strong preference for voluntary programs, incentives and product stewardship initiatives rather than a regulatory approach.

The National Packaging Covenant has been set up as the national instrument to manage packaging waste in Australia, and is considered by PACIA as one example of product stewardship. It is a co-regulatory agreement between industries in the packaging chain and all spheres of government, based on the principles of shared responsibility through product stewardship, and applied throughout the packaging chain, from raw material suppliers to retailers, and the ultimate disposal of waste packaging. Changes have occurred to product packaging as well as other initiatives, which have been stimulated by the Covenant.

Furthermore, the National Packaging Covenant has led to greater activity by many companies to proactively improve the environmental performance of their packaging. Company signatories cover the entire packaging supply chain-raw material suppliers, packaging manufacturers, packaging users and retailers. There are growing signs that the impact of the Covenant goes well beyond these achievements. The National Packaging Covenant is designed to provide companies with guidelines to help evaluate the environmental impact of new and existing packaging. Most importantly, the Environmental Code of Practice for Packaging recognises that post-production and post-consumer handling of packaging is a joint responsibility for the entire community-consumers, governments, industry and commerce. The Covenant is producing change within companies. It is having an impact on products and systems. There has been an increased use of recycled/recyclable packaging and light weighting of packaging. It is difficult to precisely measure the extent and effect of these changes. However, the process is assisted by the reporting mechanisms, which are required by signatories under the National Packaging Covenant.

The approach taken by industry is consistent with a government approach of supporting and encouraging industries to improve their environmental performance and only legislate if necessary.

Conclusion

In conclusion, PACIA believes that the Issues Paper provides general identification of and direction for the development of ideas which can create positive change. PACIA recommends a national approach to waste management and resource efficiency regulation, which would be best achieved through a coordinated policy approach facilitated by the Environment Protection and Heritage Council. We believe that a national approach will provide the greatest benefits. The Issues Paper has been useful and added to the debate, raising many important issues which should be further addressed.

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