06EC2551

Mr Philip Weickhardt
Presiding Commissioner
Waste Management Draft Report
Productivity Commission
Locked Bag 2, Collins Street East
MELBOURNE VIC 8003

Dear Mr Weickhardt

The South Australian Government welcomes the opportunity to provide its submission to the Productivity Commission inquiry Draft Report, entitled *Waste Management*.

The Productivity Commission's Inquiry comes at a time when there is irrefutable evidence of the need to reduce our impacts on the planet, or face profound changes and consequences that will affect every aspect of our environment, lives, economies and societies.

The South Australian Government has a strong commitment to providing a policy framework aimed at avoiding or reducing waste and recovering resources. This commitment is demonstrated through South Australia's Strategic Plan, released in March 2004. One of the objectives of South Australia's Strategic Plan is to make South Australia world renowned for being clean, green and sustainable. The Strategic Plan is about embracing change, improving our current ways and finding better ways to do things and to meet the challenges confronting us as a community. Attaining sustainability is one of six key strategic objectives in the Strategic Plan and a target of reducing waste to landfill by 25 per cent within 10 years has been established.

To drive the necessary transformation and contribute to the sustainability framework identified by South Australia's Strategic Plan, the State Government established Zero Waste SA and developed South Australia's Waste Strategy 2005-2010. The Waste Strategy provides a comprehensive blueprint for achieving the outcomes and targets for zero waste set out in the Strategic Plan and provides direction for continued and timely action.

South Australia is a leader in environmental reform across the nation through its container deposit legislation. The success of this legislation has lead to the State Government extending the scheme in 2003.

We are now leading the commitment by all States and Territories to phase out single use plastic shopping bags by the end of 2008.

South Australia's commitment is also demonstrated at the national level through active participation in Ministerial Councils, including the Environment Protection and Heritage Council and through being a signatory to initiatives such as the National Packaging Covenant.

The South Australian Government strongly encourages the Productivity Commission to consider the enclosed submission in drafting its final report. The submission contains no confidential material.

Yours sincerely

HON GAIL GAGO MLC

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SECTION 1

South Australian Government Response to the Draft Findings and Recommendations of the Productivity Commission Inquiry into Waste Management.

This Section provides comments on the findings and recommendations made under the corresponding headings in the draft report.

WASTE MANAGEMENT IN AUSTRALIA

In responding to the Productivity Commission's draft report this submission makes reference to South Australia's Strategic Plan and South Australia's Waste Strategy 2005 –2010. South Australia's Strategic Plan aims to make South Australia world renowned for being clean, green and sustainable. It is about embracing change, improving our current ways and finding better ways to do things in order to meet the challenges confronting us as a community.

'Zero Waste' is a new way of thinking about an age-old problem. It is part of a worldwide movement that recognises the need for change in the way that society manages its waste. Some countries have always reused and recycled materials because of limited access to resources. Now, countries such as Australia, with its ample resources, are recycling more because Governments, businesses, communities and individuals consider it increasingly important to do so.

Waste data is currently collected by numerous State (EPA, Zero Waste SA and Local Government Grants Commission) and Federal (Australian Bureau of Statistics) bodies. It is acknowledged that the comparability of South Australian studies with similar data collected by other States or at a national level is limited due to differences in definitions, statistical approaches and report timing issues.

A key challenge is to find ways to deal with variations in jurisdictional administrative, operational and compliance frameworks. The Environment Protection and Heritage Council Waste Working Group could play a role in developing a uniform data collection system. Alternatively, the Australian Bureau of Statistics (ABS) could provide a new data series that would assist in harmonising and sharing the collection and reporting of recycling and resource efficiency data across jurisdictions for national policy purposes could be pursued through appropriate forums including the relevant Ministerial council. The Australian Bureau of Statistics could also provide a useful role in this area.. It is understood that the ABS's Centre of Environment & Energy Statistics has identified waste as an area targeted for further development. Nationally consistent reporting requirements would also be beneficial.

Many countries around the world are grappling with the same waste streams as Australia. In this context there is considerable benefit from examining how similar waste problems are being tackled internationally and what policy measures are proving successful. It should be recognized that comparisons can be made as various countries seek to attain the same objective. What is important is the methods by which objectives are achieved (eg

through policy interventions) that need to be locally appropriate. The Productivity Commission must also recognize that many recyclable products are exported overseas which may impact on this reporting.

THE COSTS AND BENEFITS OF WASTE

We know that wasteful consumption habits are not sustainable because of global limits to the availability and accessibility of the earth's natural resources. We also know that there are limits to the amount of man made waste and pollution the earth can absorb or contain.

South Australia's Waste Strategy recognises that there is an urgent need to examine ways to avoid and reduce the creation of waste in the first instance. South Australian businesses are also recognizing that good business practice can benefit individual companies and the environment.

These benefits of waste management and recycling go beyond standard benefit cost analysis models, and it is important to include these environmental and social factors to gain a true understanding of the benefits and costs of waste. It is disappointing that the productivity commission has not appropriately recognised and accounted for this now well established need in the report.

In addition, the economic modeling used by the Commission appears to be based on a best case scenario in calculating the external costs of landfill management. This model does not take into account gaps in scientific knowledge and does not reflect of the state of current landfills.

The increasingly complex substances used in production and found in various materials and products create additional risks for landfill management and increases long term liabilities. Notwithstanding modern, fully compliant landfills, the long-term performance of landfill liners over time remains a matter for conjecture.

Also, the number of fully engineered landfills servicing communities (particularly in rural areas) are very few, hence the environmental impact of landfilling is significantly more extensive than is reported by the Productivity Commission. The majority of existing landfills in South Australia are unengineered and as such are likely to require relatively costly long term environmental management. This scenario is not considered in the Commission model.

A recent study conducted by Hyder Consulting (commissioned by Zero Waste SA, Environment Protection Authority, Office of Local Government and the Local Government Association of SA) assessing the total costs of rural landfill development, operation and closure found that to meet current regulatory requirements and provide for closure, a conservative estimate of costs ranged between $102-$259 per tonne. This excludes costs of transport and other externalities such as loss of potentially productive land and other resources.

THE CASE FOR GOVERNMENT INTERVENTION

In its draft report, the Commission suggests that "up-stream issues" of sustainability and resource use need to be addressed by other means, not waste policy. It uses an example: "if conservation of old growth forests were a policy priority, subsidising newspaper recycling on the grounds that this would relieve harvesting pressures on those forests would be largely futile. This is because virgin newsprint is predominantly made from plantation-grown wood."

This argument is a strange distraction. Newsprint recycling was never aimed at reducing impacts on old growth forests. In this logic the Commission fails to recognise that there are significant environmental benefits from newsprint recycling: firstly, the savings of energy (40%); and secondly the other savings associated with resource consumption and plantations such as land, fertilizer, water, harvesting costs etc. Governments around the world have recognised the need to intervene to reduce energy consumption to reduce highly destructive greenhouse gas emissions and our ecological footprint.

Innovative and well considered waste policy should continue as a tool that Governments can use to influence externalities associated with resource consumption.

THE WASTE HIERARCHY AND TARGET SETTING

The draft report suggests that because targets for waste management are difficult to set they should be avoided. Policies without targets or significant milestones are often ineffective. Targets are typically employed to provide direction and a means for measuring progress and achieving outcomes. The aspirational effect of targets should not be underestimated, they serve to focus effort and lead to reexamination and innovation.

South Australia's Waste Strategy 2005-2010 incorporates non-mandatory targets and importantly recognizes that future waste strategies will look to re-examine and where necessary adjust these targets based on improved data acquisition and knowledge obtained through many of the initiatives in the Waste Strategy.

State Government authorities when setting targets do consider regional differences and the targets set are generally, and not specifically, applied. The Productivity Commission has ignored the fact that these broad overarching targets are often underpinned by strategies that target resource streams currently being disposed of but could otherwise be recovered.

Zero Waste is an aspirational target. Aspiring toward Zero Waste is part of a worldwide movement that recognizes the need for change in the way that society generates and manages its waste, and consumes resources, particularly as humanity is now largely urbanized with a population in excess of 6 billion. The Commission's finding in relation to this matter does not appear to reflect contemporary and progressive policy development both nationally and internationally and growing community expectations.

The Commission is critical of the waste hierarchy as a policy setting instrument. The waste hierarchy is a nationally and internationally accepted guide for prioritizing waste

management practices with the objective of achieving the optimal environmental outcome. The waste hierarchy is used as the basis for broader assessment and not used as the sole method for identifying interventions. It is upon this basis that the waste hierarchy is incorporated in South Australia's *Zero Waste SA Act 2004*. Importantly, the waste hierarchy also provides an approach that enables meaningful engagement with community – it provides an easy to understand guide by which the community can assess waste management options both at the personal level and in relation to third party approaches.

Governments necessarily analyse a number of policy outcomes in addition to cost benefit. In South Australia a triple bottom line approach has been adopted for all policy evaluation, to take account of social, environmental and financial costs and benefits.

REGULATION

Greenhouse Gas Externalities

The South Australian Government agrees with the Productivity Commission's view that greenhouse gas emissions should be addressed within a broad national framework. However, in the absence of a national approach, South Australia has taken a leadership role in dealing with greenhouse gas emissions.

In addition, the Commission fails to recognize that a range of policy approaches is acceptable and necessary to address greenhouse gas emissions. One of the efforts to slow the potential for climate change is provided by the opportunity to retain the energy embodied in waste products by re-use and recycling. For example, 3,080 tonnes of aluminum cans entering the South Australian market each year, 90% are recycled (largely due to container deposit legislation), resulting in a saving of 11281 MTCE (Metric Tonnes of Carbon Equivalent)

90% of 3,080 tonnes of aluminum cans recycled saves GHG equivalent to:

- keeping 2,442 passenger cars off the road for a year; or
- saving 26,235 barrels of oil; or
- 1448 households of electricity use for one year.[1]

This intervention policy reduces our demand on the processing and manufacturing of primary materials by re-using and recycling secondary materials (waste products) saves energy and the resulting emissions associated with production processes.

Although the waste sector is a minor source of emissions compared with energy and agricultural sectors, there is scope for reduction. For example, there are five power plants located at various closed and operational landfills across metropolitan Adelaide that have a combined energy generating capacity of 12.7 megawatts. "The use of methane in this form saves the equivalent of 50,000 tonnes of carbon dioxide for every 1 megawatt

[1] Based on data from Recycling in SA Reports and the US EPA's Greenhouse Savings Calculator:
www.zerowaste.sa.gov.au/pdf/recycling_expansion_priorities.pdf
www.zerowaste.sa.gov.au/pdf/product_recovery_analysis.pdf
http://yosemite.epa.gov/oar/globalwarming.nsf/WARM?openform

generating capacity from being released into the atmosphere annually" (Department of Environment and Heritage, 2000).

Plastic Bag Phase Out

South Australia has made a commitment to ban plastic bags from the end of 2008. Again, it is essential that the Commission understand that other factors need to be considered alongside economic cost benefit analysis. Because the value of social and environmental benefits cannot be fully expressed in economic equations, cost benefit analysis alone will not lead to good outcomes for the community and the environment.

Research conducted in South Australia in July 2003 revealed that the South Australian general public would support a ban of plastic carry bags, *assuming that environment friendly alternative bags were made available to the public*, over a charge or levy on plastic carry bags at the point of sale. (McGregor Tan Research, 2003)

The compelling argument for a ban clearly includes a social dimension not well considered in the economic analysis presented by the Productivity Commission. To many people, plastic bags have become a symbol of waste within society, and are representative of much broader concerns about plastics, packaging and the environment. Phasing out plastic bags represents an important step toward greater environmental consciousness and stewardship within society.

At the Environment Protection and Heritage Council in June, South Australia led the Council to re-affirm this commitment to the phase out of single-use plastic bags by resolving to look at regulatory options for the phase out.

MARKET-BASED INSTRUMENTS

Land Fill Levies

The draft recommendation to cease the use of landfill levies as an intervention instrument is based on reasoning that does not take account of some important factors.

Landfills are, in the main, not modern and as a result many will require management (and financial resources) to address ongoing environmental impacts. Establishing a new, integrated, long-term and sustainable approach to waste management requires the application of practical resourcing strategies to underpin and drive the changes required. Following the establishment of Zero Waste SA in 2003, South Australia has achieved a 9% reduction in waste to landfill. Zero Waste SA's programs and activities are fully funded from waste levy revenue.

Disposal fees (gate fees) set by landfill operators usually reflect establishment and operational costs and seldom, if ever, reflect the true costs such as environmental and social costs (which also appear to be understated by the Commission). As a market based instrument in a highly competitive market place, gate fees do not therefore seek to modify waste generation behaviour, but instead as a volume based business landfill operators seek to secure a supply of waste, often through price discounting practices.

Market set waste disposal charges therefore fail to signal to the community the full cost of landfill.

The waste depot levy (waste levy) is the South Australian Government's chosen economic instrument to address this market failure and influence waste management. The waste levy is incorporated by landfill operators into the total price of the gate fee charged to users of the facility. This levy (incorporated within the gate fee) is a broad economic instrument that catches all (with the exception of illegally dumped materials).

Container deposit legislation

The Commission argues that container deposit legislation is not a cost effective mechanism for resource recovery and litter reduction. The South Australian experience clearly demonstrates this draft-finding to be untrue and short sighted. Container Deposit Legislation (CDL) enhances kerbside collection and reduces litter in the environment. This is discussed further in Section 2.

EXTENDED PRODUCER RESPONSIBILITY AND PRODUCT STEWARDSHIP

In finding that mandatory product stewardship and product responsibility schemes are largely unlikely to deliver net benefit, the Commission does not mention environmental benefits of such schemes and therefore the whole point of such schemes must necessarily be undervalued in the Commission's approach. In general, the Commission's view regarding extended producer responsibility (EPR) and product stewardship seems to be inconsistent with contemporary international experience and has little regard to the resource impact of landfill disposal of these materials.

A variety of policy models exist for EPR schemes ranging from purely voluntary to fully regulated. The Productivity Commission should recognize that given the growing international acceptance of EPR schemes, businesses may be subject to these requirements through the import and export of their goods.

GOVERNMENT INFORMATION PROVISION AND PROCUREMENT PRACTICES

The Commission's argument that it is relatively ineffective to use Government procurement to demonstrate good practice and assist in developing recovered materials markets, does not recognize State Government's key leadership role in the community. As a large consumer, the operational policies and practices of Government, such as procurement, can also be influential in the market place.

World-wide, procurement processes are being re-evaluated to consider: end-of-life impacts of materials; the need to procure products that are designed for disassembly, reuse and recycling; or products that have recycled content. A recent acknowledgment of the importance of using procurement to drive environmental outcomes is evidenced in the Climate Change Leaders Declaration that was signed by the South Australian Premier alongside other national and international leaders (*http://www.mddep.gouv.qc.ca/Air/Leaders/Declaration_en.pdf*).

South Australia continues to provide strong policy direction and lead by example in areas such as encouraging greener electricity by supporting the expansion in the State's supply of green energy in the areas of solar, wind and geothermal power. The Government has also been leading the way in making sure public buildings use green energy. The Government has mandated that all new houses must be "five star" energy rated and given preference to leasing "five star" energy rated buildings for Government operations. Businesses and the community are encouraged by tangible State Government leadership in these and many other areas.

INSTITUTIONAL AND REGULATORY IMPEDIMENTS TO WASTE MANAGEMENT

Licencing and full cost recovery for landfill

The Commission argues that State Governments should ensure local government operated landfills fully comply with licence conditions and charge users the full cost of waste disposal.

The South Australian Environment Protection Authority has the statutory responsibility to manage the environmental impacts of waste in South Australia and to minimize adverse effects on human health and the environment. The EPA licenses landfills and monitors compliance with licence conditions.

Local Government has operated waste management as a public good rather than a business. Whilst this does not eliminate the need to charge full cost for waste disposal, the magnitude of the difference between current charges and the charges required for cost recovery would be an excessive financial burden on small communities. The Audit of Selected Country Landfill Facilities conducted by Hyder Consulting (2006) showed that there was a major disparity between current charges and the charges incurred for full compliance with current regulatory requirements - the major disparity was the charges required to be levied to achieve full cost recovery.

Aggregation of waste management in urban centres

In response to the draft recommendation that responsibility should be shifted for waste management in large urban centres from local government to appropriately constituted regional bodies, local government has already largely made these arrangements in Adelaide.

Production materials

South Australia is leading the way in building and construction environmental responsibility. In 2005, the Government of South Australia committed $360,000 in funding to develop Green Star rating systems for the Health and Education sectors in conjunction with the Green Building Council of Australia.

The SA Government is developing a Sustainable Procurement Policy and has issued an 'Ecologically Sustainable Development Guide Note - Planning, Design And Delivery', and 'Ecologically Sustainable Development Guide Note - Sustainment Of Existing Buildings', which include guidance on minimising resource use and maximising diversion of materials from landfill generated via capital works.

PERFORMANCE MEASUREMENT

In South Australia, information regarding the amount of waste disposed to landfill is reported to the Environment Protection Authority. South Australia's Strategic Plan has a target for reducing waste to landfill. The State Government has sought extensive community feedback on the targets contained in the Strategic Plan.

Whilst there is currently no reported measure for the composition of waste, more extensive data on this, and on recycling and resource efficiency, is generated through studies commissioned by Zero Waste SA for this purpose. These studies value add to waste policy development and when conducted over time (as is the case in South Australia), trends and performance can be determined.

Waste generated by commercial and industrial activity is generally managed at the source by the business or industry itself and resultant data is retained by the business or industry and often not readily accessible.

The South Australian Government sees merit in a national approach to developing a robust and consistent set of performance measures for waste management.

SECTION 2

South Australian Government Response to the Productivity Commission Inquiry Draft Finding 9.2 – Deposit Refund Schemes

This Section provides the case for container deposit legislation that the Draft Report has missed.

The South Australian Government does not support the Commission's draft finding 9.2

The South Australian Government notes that the draft report has not focussed on the benefits of container deposit legislation (CDL) schemes. It would also appear that the Productivity Commission's draft finding 9.2 has resulted from information provided in submissions to the Inquiry that do not support the CDL position.

White's (2001) review of CDL "...found that stakeholder attitudes to CDL are highly heterogeneous with strong support from local government and environment groups, majority support from the community, limited support from the recycling industry and opposition from the beverage packaging and retail industries."

Benefits of running combined CDL & Kerbside Recycling in SA

The SA Government supports the position that CDL is compatible with and enhances kerbside collection. Hudson and Cole (1999) concluded that it was difficult to accept the argument that CDL adds a significant net cost to kerbside recycling. They argued that the ability of Local Government and contractors to redeem deposit containers remaining in the kerbside waste should significantly offset any increase in the unit cost of collection caused by the diversion of deposit containers to collection depots. High annual revenue streams identified by two councils who responded to a survey undertaken as part of this study were considered to support this view.

EPA discussions with a major metropolitan Adelaide waste collection contractor (servicing in the order of 100,000 households) revealed that an additional number of collection vehicles would be required to do the same job in the absence of CDL, increasing capital costs significantly. This would also increase external environmental cost such as greenhouse gases.

The following information lends support to this finding:-

- Due to CDL in SA a large portion of glass is removed from the recycling stream. With a reduction in beverage glass, there are a greater proportion of PET containers and this has the effect of reducing weights to be carried and increases the ability to compact the loads collected.
- Compactor bodies can be set to 200 kg's per cubic metre (m3) providing a material that the material recovery facility (MRF) operator can manage with less glass broken up penetrating the paper, cardboard and Liquid Paper Board (LPB) which ultimately makes that product less viable.
- In Victoria the comparison is a compactor set to 120 kg's per m3 due to the large quantum of glass in the mix and less PET, LPB and with a greater m3 mass.

Those jurisdictions without CDL carry less volume and weight because there are fewer 'softening' agents in the load to prevent glass breakage and the consequent damage to paper and cardboard prices due to the broken glass that infiltrates the product.

Impact on littering

The Draft Report fails to mention the fact that beverage containers are a highly visible part of the litter stream regardless of the percentage found within litter. The deposit mechanism of CDL has had, and continues to have, a positive impact on consumer and community behaviour in relation to the collection and return of deposit containers and thereby contributes significantly to the Government's overall litter reduction objectives. Where littering has occurred or deposits are not redeemed by consumers of the product, CDL encourages the removal of these unsightly containers from the sides of roads, highways and parks by being collected and exchanged for cash by enterprising individuals and organisations. Local councils also offset the cost of services from recycling the containers they collect.

In April 2005 Ian Kiernan, Chairman, Clean Up Australia was recorded in the media as saying that on Clean Up Australia Day, 40% of everything picked up in most states are drink containers and that by comparison, in South Australia, only 9.6% of everything picked up are drink containers.

Costs of introducing a CDL scheme

The South Australian Government considers that the Commission has omitted some pertinent comments from White's research, which appeared in both Vol 2 and the Executive Summary:

"When both financial and environmental impacts were considered on a whole of society basis, the potential benefits of introducing CDL in NSW were found to significantly exceed the costs." (White, 2001)

White's Executive Summary then goes on to say:

"The annualised net economic benefit of CDL in NSW in the case where recovered container materials are recycled was found to be of the order of $70-100 million per year compared to the current situation. This net economic benefit is largely due to

environmental benefits that were valued by the CDL Review at $100-150 million per year. This valuation of environmental benefits is exclusive of the value of improved visual amenity due to litter reduction. Litter reduction is, however, an important benefit to be gained from CDL and has historically been a major driver for its introduction both in Australia and overseas.

In summary, the estimated value of the environmental cost of disposing of a single average beverage container to landfill, compared to recycling that container, is 8-9¢. The cost of recovering that container through a combined CDL and kerbside recycling strategy is approximately 2-3¢."

Box 9.4 Container deposit legislation in South Australia

The South Australian Government believes that the contents of this Box in the draft report is misleading.

Whilst the South Australian Government is not privy to the financial transactions between manufacturer/distributor and retailers, it is misleading to imply that the retailers pay a 5 cent deposit and an agreed handling fee to the filler or manufacturer.

The deposit and handling fee is actually set by the collection coordinator (known as Super Collectors) and is levied to the manufacturer. In other words the manufacturer/distributor incorporates these additional costs into the selling price of the beverage to the retailer. Whether or not the deposit value is flagged as part of the sale process may depend upon the supplier or may even depend upon GST requirements.

Super Collectors act as agents for manufacturers/distributors and broker the remuneration of refunds and the payment of handling fees to collection depots based on upon empty containers returned to them by depots and also sales declared to them by the manufacturers. In other words, depots get back the 5c that they have paid to consumers and are also paid a handling fee by the super collector.

SECTION 3

South Australian Government Response to the Productivity Commission Inquiry Draft Report into Waste Management – The Benefits of Resource Efficiency

This Section comments on the Draft Report's apparent failure to address the terms of reference regarding resource efficiency.

The Case for Change

According to the 2004 Living Planet Report issued by the World Wide Fund for Nature, the United Nations Environment Program and the Global Footprint Network, the average Australian has an 'ecological footprint' of 7.5 – 8 hectares. This means that every Australian needs 7.5 – 8 hectares of bioproductive space to provide the primary resources required for food, fibre and shelter. This is one of the largest footprints in the world and if every person on earth lived in this way, 4 planets would be required to sustain this level of resource demand. Similarly the World Economic Forum has ranked Australia 56th out of 122 countries in terms of eco-efficiency.

Resource efficiency is clearly a vital element of sustainable development and Australia currently performs relatively poorly on this matter, yet the Commission dismissed the issue by arguing that:

- it is likely that technological change will mean that we will be able to do more with less and we might be able to switch our dependence on some non-renewable resources to some renewable resources; and
- as finite resources become scarce, prices will rise stimulating exploration and development of new reserves, greater recycling, conservation through greater efficiency of use and the development of substitutes (where possible).

The Approach in the Draft Report

The Productivity Commission Inquiry draft report implies that there is no need to adopt any specific policy measures to encourage improved resource efficiency. While it is acknowledged that technological change and rising prices are likely to provide some stimulus for increasing resource efficiency, this is not a reason to adopt a 'do nothing approach' as the Productivity Commission appears to be suggesting. Eco-efficiency surveys undertaken by the Australian Chamber of Commerce and Industry indicate that lack of time, costs of investigating ways of improving operations and lack of knowledge regarding legal responsibilities are important barriers to improving resource efficiency in Australian industry.

The failure of the Productivity Commission Inquiry to adequately consider resource efficiency is all the more baffling in the face of the mounting evidence regarding the economic and environmental benefits of improved resource efficiency and because of the Commission's strong (although questionable) view that waste policy should not be used to deal with 'upstream' issues in the product life cycle. Enhancing resource efficiency provides a direct mechanism for reducing the adverse impacts of production processes including pollution and resource depletion.

South Australia's Approach

In a recent publication by the Premier's Round Table on Sustainability, Good Business: South Australian Industry Leadership in Environmental Sustainability[2], the Government of South Australia has encouraged "businesses to seek creative solutions to environmental issues and to build competitive advantage". Product stewardship, manufacturing efficiency and supply chain management are key drivers identified for improving companies profits while reducing their environmental impact.

The waste management hierarchy is a nationally and internationally accepted philosophy for prioritising and guiding efforts to manage waste. It is a guiding principle of the *Zero Waste SA Act 2004* and the foundation upon which South Australia's Waste Strategy has been developed.

The waste management hierarchy establishes approaches to waste management according to their importance and preference in descending order. Waste avoidance and reduction are regarded as the most optimal approach and, to the extent that this cannot be achieved, reuse, recycling and recovery of waste is preferred, with treatment and disposal the least preferred approach. A lot can be done to redirect our waste management efforts to more closely reflect the guiding principles of the waste hierarchy.

The South Australian Government has developed a balanced set of policy measures to ensure that the South Australian community moves up the waste management hierarchy, including:

- Increased Environment Protection Authority powers and associated improved environmental performance at licensed landfills and recycling operations
- Limited the development of any new landfills servicing metropolitan Adelaide
- Establishment of Zero Waste SA and legislative framework to enable State and Local Government, industry and the community to work together to drive a new strategy for waste avoidance and reduction, waste reuse and recycling and waste disposal.
- Developed of South Australia's Waste Strategy 2005 – 2010 that builds on innovative and strong policy decisions such as South Australia's Strategic Plan and our highly successful container deposit legislation (CDL).

Zero Waste SA has:

- Provided a range of incentives to local government and industry to better manage waste and resources in SA
- Developed South Australia's first state-wide Waste Strategy (2005-2010)
- Developed new education programs for school children
- Strategically funded new investment in infrastructure
- Reduced waste in government (greening of government program)
- Identified litter and illegal dumping issues to be addressed
- Researched new markets for recycled materials through grants programs
- Collected household and farm chemicals for treatment or disposal

[2] http://www.environment.sa.gov.au/sustainability/latest_news.html#goodbusiness

- Provided incentives to councils to introduce high performing kerbside recycling systems
- Sponsored the development of regional waste management plans with local government
- Promoted recycling at public events, and
- Reduced plastic bag use by the community.

In 2003, South Australia recycled approximately 65% of its waste stream. This is equivalent to most leading European countries and can be attributed to a complementary policy framework of incentives and regulations.

South Australia's Waste Strategy 2005 – 2010 seeks to maximise the beneficial use of waste materials, decrease the generation of greenhouse gas and reduce the disposal of waste to landfill. One of the first priorities in implementing South Australia's Waste Strategy has also been to initiate a comprehensive benefit–cost analysis using a full cost accounting approach. This detailed benefit–cost analysis should provide greater certainty and information about the real and total costs (including social and environmental externalities) of implementing its range of strategies, next steps and other measures.

Importantly, international, interstate and previous State-based analysis provides reassurance that the South Australian Waste Strategy is an optimal approach that makes good economic, social and environmental sense. In particular, South Australia is building on previous successes demonstrated in promoting eco-efficient principles through a former Pollution Prevention Program and through South Australia's container deposit legislation which has been an effective form of extended producer responsibility. South Australia will continue to encourage increased uptake of resource efficiency measures in industry through Zero Waste SA's incentive programs and initiatives.

CONCLUSION

There are some stark realities and some simple truths that should be regarded as beyond dispute. The Round Table on Sustainability established by the Premier of South Australia gave such a message in its report to the State Government. That simple message is, "Our society and economy are dependent on a healthy environment. The future of South Australia is threatened by climate change and biodiversity collapse."

We know that wasteful consumption habits are not sustainable because of global limits to the availability and accessibility of the earth's natural resources. We also know that there are limits to the amount of man made waste and pollution the earth can absorb or contain.

By disposing waste to landfill we are burying and degrading many useful resources and preventing on-going use of these materials in one form or another. Although these materials can be re-made, this requires large amounts of energy and the consumption of more resources with attendant greenhouse gas and other pollution implications. A major challenge – to break the strong link between waste generation and economic development – will only be met by a range of policy measures.

The South Australian Government places resource efficiency in the forefront of measures necessary to bring about the required changes and this is reflected in its policies.

However, while it is acknowledged that Governments must provide policy direction and support, industry must also take responsibility for adopting and implementing continuous improvement principles and practices aimed at achieving best practice environmental management. By adopting environmentally sustainable practices businesses can increase profit, manage risk, reduce costs and increase opportunities. In this context, resource efficiency is an important economic driver.

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