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AN INQUIRY INTO

THE RECYCLING INDUSTRY

4th Report of the

ENVIRONMENT, RESOURCES AND DEVELOPMENT COMMITTEE

"Make good use of bad rubbish"

-The Wombles, BBC

Tabled in the House of Assembly and ordered to be published 21 July 2020

Second Session, Fifty-Fourth Parliament

PRESIDING MEMBER'S FOREWORD

I wish to thank all those who gave their time to assist the Environment, Resources and Development Committee (the Committee) with this inquiry. In particular, I'd like to thank the 54 submitters and 39 witnesses who appeared either in-person or via video or teleconference to provide their evidence. I would also like to thank the businesses who welcomed the Committee onto their premises and helped provide context and background to their industry. I would also like to thank the councils (Whyalla City Council, City of Mt Gambier and Wattle Range Council) who provided forums for the Committee's regional public hearings.

In May 2019, when the Committee resolved to commence this inquiry the Australian government, and governments from other jurisdictions (including South Australia) were already responding to the challenges presented by China's ban on the importation of waste. Parliamentary inquiries had been commenced in Victoria and in the Senate, with a further Senate inquiry launched on 23 October 2019 to explore innovative solutions for Australia's waste and resource recovery industry.

A National Waste Policy was published in 2018 and, during the progress of this Committee's inquiry, a National Waste Action Plan (2019) was released to help meet the targets in the National Waste Policy. The Meeting of Environment Ministers in 2019 also committed to a ban on some types of waste being exported. At a local level, the South Australian government had:

- Commenced a review of South Australia's Container Deposit Scheme;
- Released for consultation, and now introduced, its *Single-use and Other Plastic Products [Waste Avoidance] Bill* 2019;
- Published an Energy from Waste Discussion Paper; and
- Released for consultation its draft Waste Strategy for 2020-25.

The activity of governments across jurisdictions in relation to waste management and resource recovery throughout this inquiry has made reporting on the state of the industry somewhat of a 'moving feast'. The Committee was heartened to note governments across jurisdictions were keen to address legislative and policy challenges that have been faced by the industry for many years, and that the Commonwealth were taking the lead in coordinating a national approach through the Meeting of Environment Ministers.

In late 2019 and early 2020, some of this momentum was interrupted dramatically as Australia experienced severe bushfires in every state and territory, except the Northern Territory; with South Australia experiencing bushfires throughout many parts the State. The trauma of these bushfires was closely followed by the Covid-19 global pandemic and the resulting socio-economic restrictions. Local and state government resources have, quite rightly, been put towards dealing with these unanticipated and traumatic events. This has meant that the Committee's findings and recommendations for the industry, although important, must now be viewed through the lens of post-bushfire and pandemic recovery.

Covid-19 has revealed challenges associated with fragile global supply chains and business models, making some of the Committee's recommended improvements to the legislative and policy environment to support the domestic waste management and resource recovery

industry even more pertinent. Findings, such as moving the South Australian economy towards a circular model for waste management is well supported, and consistent with a post Covid-19 recovery plan for South Australia. Success for the industry is, however, likely to be contingent upon a collaboratively-developed statewide strategy and action plan that is embedded within nationally-agreed objectives.

The Committee makes 16 recommendations in this report which I believe will address many of the issues raised by submitters and witnesses.

I commend the members of the Committee, the former Presiding Member, Mr Adrian Pederick MP (until 5 February 2020), Mr Nick McBride MP, Mr Michael Brown MP (until 5 February 2020), Hon. Tony Piccolo MP (from 17 February 2020), Hon. John Dawkins MLC (until 6 April 2020), Hon. Dennis Hood (from 7 April 2020), Hon. Tung Ngo MLC and Hon. Mark Parnell MLC, for their contributions to this report. All members have worked cooperatively on this report. Finally, I thank the Committee staff for their assistance.

Bushfire waste

Anyone seeking information specifically on bushfire waste should visit Waste Management after a Bushfire, South Australia 2019-2020 (https://www.greenindustries.sa.gov.au/bushfires) or https://www.epa.sa.gov.au/environmental_info/waste_management/burn_damage.

Stephen Patterson MP
Presiding Member
21 July 2020

EXECUTIVE SUMMARY

On 13 May 2019, the Environment, Resources and Development Committee (the Committee) resolved to conduct an inquiry into whether a current crisis in waste management exists in South Australia as a result, at least in part, of China's National Sword Policy (CNS).

The Committee considered a wide range of evidence from 54 submissions, 39 witnesses and published literature. The Committee visited waste management and resource recovery sites in the northern and north-western metropolitan area, and conducted regional visits to Whyalla and the South East. The Committee held public hearings in Adelaide, Whyalla, Mount Gambier and Millicent.

In 2017, China announced to the World Trade Organisation that it would no longer be accepting certain kinds of solid wastes; including plastics waste, unsorted waste paper and waste textile materials. Other Asian countries, such as Indonesia and Malaysia indicated that they would be adopting similar policy positions. Australia's response to the bans on waste exports has been encapsulated in the National Waste Policy 2018 and the subsequent Action Plan 2019.

South Australia has led the way in waste management and resource recovery through introduction of Container Deposit Legislation in the 1970s and banning single-use plastic bags in 2009. South Australia continues to implement legislation aimed at reducing waste with its *Single-use and Other Plastic Products [Waste Avoidance] Bill* 2019.

Recycling and waste management challenges were evident prior to CNS, but have been compounded by the reduced ability to export recyclable materials. Submitters and witnesses outlined the socio-economic impacts of CNS on councils and industry. A diminished competitive market; lower value commodity prices and higher sorting costs; and increased gate fees served to impact upon stakeholders in the resource recovery industry.

In recognition of China's restrictions on importing recyclables, the state government (Green Industries SA) released a $12.4 million package for local government and the resource recovery industry. This package was intended to be directed towards improving sorting and processing and enabling industry investment in remanufacture.

Challenges and opportunities existed prior to CNS, but CNS has helped highlight a community desire for reform within the waste management and resource recovery industry. Submitters provided many possible solutions to the issues and challenges as they saw them. Potential solutions tended towards global and transformative change, such as shifting the state towards an industry based on the circular ecomony model, while other solutions were behavioural, such as increased education to reduce contamination. Increased government transparency and accountability, and certainty and clarity for industry were also important to stakeholders.

Economic and legislative tools were suggested to encourage best practice in product stewardship and to minimise production of non-recyclable or hard-to-recycle products. The Committee also heard that better and more equitable risk-sharing partnerships and collaboration at regional levels will result in a more level playing field.

An issue that was important to all councils and local government associations was the state government announcement of an increase in solid waste levies for the 2019-20 budget. Councils and LGAs called for increased transparency and accountability for expenditure of solid waste levies.

Overwhelmingly, there was a desire to decouple the state from external markets and to provide self-sufficiency for future generations. A waste management and resource recovery industry based on a circular economy model was widely supported by submitters and witnesses. It was important that any such transition be supported by economic and legislative tools to encourage best practice, and strategic planning and action that is underpinned by better knowledge about product and packaging flows. It was important to consider Energy from Waste in the context of a circular economy model, and also to consider the best possible use for waste. Finally, submitters and witnesses all recommended that government policy focusses on the creation of local markets for recyclable and recycled products.

COMMITTEE'S FINDINGS

The Committee found that:

1. The China National Sword Policy did not cause a waste management and resource recovery crisis in SA; rather, that the China National Sword Policy exacerbated issues that already existed and are continuing;
2. A model based on the circular economy was well supported for SA moving forward, and strategic and action plans are important to get there;
3. There is a lack of consistency in policy and legislative language, as well as waste levy charges, across jurisdictions;
4. Policy and legislation needs flexibility to allow industry to innovate;
5. There is some policy inflexibility to increasing the frequency of organics collections and reducing collections of landfill waste with a lack of community awareness around why increasing and/or decreasing certain services is beneficial;
6. Some recyclers had been disproportionately affected by the economic impact of the China National Sword Policy – created by the drop in the price of cardboard and paper, higher transport costs and lack of capital to invest in infrastructure.
7. Unexpected increases in the Solid Waste Levy (SWL) has created challenges for councils and industry;
8. There is a lack of transparency and accountability around (long-term) decision making for expenditure of the SWL;
9. Regional councils have been disproportionately affected by policy and legislative changes to the SWL, even with assistance towards transport costs from state government;
10. Waste management and resource recovery may be best managed by multiple councils collaborating and partnering at a regional level, with assistance from the state government;
11. The scrap metal resource recovery industry has economic challenges that need to be overcome in order to remain globally competitive;
12. The lack of available and open access data and knowledge on the life cycle of products and packaging, and available markets, was hampering resource recovery efforts;
13. A lot of focus for solutions has been on sorting and processing, but more focus could be on dealing with problematic waste at its source;
14. Diverting food and garden organics is critical in reducing landfill and providing feedstock to the organics recovery industry;
15. State and local governments have an important role to play in the creation of markets for products and packaging with recycled content;

16. Energy from waste has a role to play in the context of a circular economy, especially for regional areas;
17. That unintended consequences may arise from competition for feedstock and that the most beneficial use of waste should be the primary consideration for implementing energy from waste facilities;
18. It is important to address illegal dumping and litter; and
19. Education and promotion of awareness is still an important part of reform for waste management and resource recovery.

COMMITTEE'S RECOMMENDATIONS

Recommendation 1:

That state government, in collaboration with local government and other stakeholders:

a) prioritises and develops a long-term strategy and action plan to shift SA towards a suitable waste management and resource recovery model based on a circular economy (including legislation/ policy and economic incentives to support such an economy);
b) articulates and evaluates the following outcomes within the strategy and action plan: (1) clarity, consistency and certainty; (2) transparency and accountability; (3) leadership; (4) collaboration and partnerships; and (5) awareness raising, education and behaviour change. The objective of the strategy should be to achieve zero litter and zero waste to landfill, consistent with the Waste Strategy 2020-25;
c) ensures that future waste management and resource recovery strategies and action plans are aligned with the Commonwealth government's direction, however, this should not stop South Australia being a national leader in waste management and resource recovery; and
d) reports annually to Parliament on its progress towards the circular economy and achieving zero litter and zero waste to landfill.

Recommendation 2:

That state government continues to participate in the Meeting of Environment Ministers:

a) to help drive outcomes at a national level that are consistent with SA's shift towards a circular economy, emphasising the use wherever possible of consistent legislative and policy language across jurisdictions; and
b) drives, at a national level, the consistent use of Australian standards across all jurisdictions on recyclable and compostable products and packaging and discouraging the use of terminologies that do not meet either of these two standards (especially from imported goods).

Recommendation 3:

That state government, in collaboration with local government and other stakeholders:

a) conducts a review into state policy and legislation, with the aim of ensuring that there is flexibility and incentives to innovate, conduct trials and share data and outcomes from such trials; e.g. different approaches to collecting glass and trialling collection frequencies; improving organics (FOGO) collection services to institutions such as schools and hospitals; and provision of more collecting stations for soft plastics;
b) develops and maintains a financial and legislative/ policy environment in SA that facilitates open access public and private research and development into best practices for waste management and resource recovery; and
c) considers further economic levers to incentivise, and legislative levers to mandate, greater use of recycled content in products and packaging.

Recommendation 4:

That the state government, in collaboration with local government and other stakeholders:

a) Undertakes an objective evaluation of the allocation of grants, loans and other types of support to councils and industry, identifying gaps and publishing the results;
b) Reviews and identifies challenges to smaller MRFs (particularly regionally-located MRFs) and prioritises funding towards assisting MRFs in the short-term, such as levy discounts, assistance to access grants or cash injections, until longer-term strategies, such as better risk-sharing contracts with councils, are able to be developed and implemented to help all of industry;
c) in the interests of transparency, develops and implements a long term (5-6 year) strategy for expenditure of the SWL that is consistent with shifting SA towards a circular economy; and
d) considers how best to reduce the risk of waste from SA going to landfill in other states because of inconsistencies in the price of solid waste levies across jurisdictions.

Recommendation 5:

That state government, in collaboration with local government and stakeholders, coordinates and reports on a strategic investigation into the challenges and opportunities for regional areas to best undertake waste management and resource recovery services.

Recommendation 6:

That state government, in collaboration with local government and other stakeholders, reviews and develops a strategy and action plan to identify data and knowledge gaps in the life cycle of products and packaging, and addresses ways in which knowledge may be shared with industry and the community (particularly local and national market analyses).

Recommendation 7:

That state government, in collaboration with stakeholders:

a) investigates options for legislative and policy flexibility, and economic incentives, to assist scrap metal recyclers to remain globally competitive and continue best practice resource recovery (including options to reduce or eliminate the cash economy environment); and
b) ensures that the EPA remains well-resourced to police participants in the scrap metal industry who are not compliant.

Recommendation 8:

That state government, in collaboration with local government and other stakeholders, investigates and considers implementing changes to packaging and products legislation/ policy that could be undertaken at a state and local level.

Recommendation 9:

That state government, in collaboration with local government and stakeholders:

a) implements a strategy to continue to educate the community on the importance of diverting food and garden organics from landfill;
b) considers and implements a strategy to increase the frequency of organic waste collection and raise awareness amongst the community to reduce the frequency of collection of waste destined for landfill; and
c) consults with all relevant stakeholders to address the issue of current medium-high density dwellings that do not have separate organics (FOGO) waste facilities and ensures all new medium-high density residential developments will enable residents to separate FOGO and recyclables from landfill waste.

Recommendation 10:

Parliament, as a workplace for hundreds, should investigate and adopt best practice in recycling and waste minimisation. The Joint Parliamentary Services Committee should conduct a green audit of Parliament's waste management practices, in the context of the waste hierarchy and the circular economy, including FOGO. The Joint Parliamentary Services Committee should report annually to Parliament on its programs and achievements in waste management.

Recommendation 11:

That state government, in collaboration with local government and stakeholders, devises a cost-effective strategy and implementation plan to divert as much glass as possible from co-mingled recycling.

Recommendation 12:

That state and local government help create certainty in markets for recyclable and remanufactured products by incorporating circular economy principles into procurement policies and practices by adopting best practice principles and guidelines along with targets (where possible) that meet social, environmental and economic outcomes.

Recommendation 13:

That state government, in collaboration with regional local government and stakeholders:

a) investigates the potential for small-scale Energy from Waste (EfW) technology that may be sustainably and cost-effectively managed at a regional level; and
b) develops and applies criteria for the 'most beneficial use' of feedstock (especially organics) in implementing strategies for EfW technology using appropriate incentives to encourage best use of feedstock.

Recommendation 14:

That state government, in collaboration with local government and stakeholders:

a) undertakes a review to ensure that policy/ legislative barriers to locally produced organics recovery are minimised; and
b) collaborates across agencies and jurisdictions to investigate economic and policy or legislative tools to encourage the use of recovered organics in improving environmental and/or agricultural productivity.

Recommendation 15:

That state government, in collaboration with local government and stakeholders, investigates the current suite of economic and policy/ legislative tools that may help reduce illegal dumping activity and considers whether current tools are adequate for regional areas.

Recommendation 16:

That state government, in collaboration with local government and other stakeholders, considers and reports on the current awareness of local communities in reducing waste and adopting a circular economy and reports on new (locally appropriate) strategies to increase education and awareness.

TABLE OF CONTENTS

LIST OF FIGURES

ENVIRONMENT, RESOURCES AND DEVELOPMENT COMMITTEE

The Environment, Resources and Development Committee (the Committee) was established pursuant to the *Parliamentary Committees Act* 1991.

Its membership for the duration of this inquiry was:

Mr Stephen Patterson MP (Presiding Member) (from February 2020)

Mr Adrian Pederick (Presiding Member) (until February 2020)

Hon. John Dawkins MLC (until April 2020)

Hon. Dennis Hood MLC (from April 2020)

Mr Nick McBride MP

Hon. Tung Ngo MLC

Hon. Mark Parnell MLC

Mr Michael Brown MP (until February 2020)

Hon. Tony Piccolo MP (from February 2020)

Parliamentary Officer to the Committee: Ms Joanne Fleer

Research Officer to the Committee: Dr Merry Brown

FUNCTIONS OF THE COMMITTEE

Pursuant to section 9 of the *Parliamentary Committees Act* 1991, the functions of the Committee are:

(a) to inquire into, consider and report on such of the following matters as are referred to it under this Act:

(i) any matter concerned with the environment or how the quality of the environment might be protected or improved;

(ii) any matter concerned with the resources of the State or how they might be better conserved or utilised;

(iii) any matter concerned with planning, land use or transportation;

(iv) any matter concerned with the general development of the State;

(b) to perform such other functions as are imposed on the Committee under this or any other Act or by resolution of both Houses.

REFERRAL PROCESS

Pursuant to section 16(1) of the *Parliamentary Committees Act* 1991, any matter that is relevant to the functions of the Committee may be referred to it in the following ways:

(a) by resolution of the Committee's appointing House or Houses, or either of the Committee's appointing Houses;

(b) by the Governor, or by notice published in the Gazette;

or

(c) of the Committee's own motion.

TERMS OF REFERENCE

Pursuant to section 16(1) (c) of the *Parliamentary Committees Act* 1991, the Committee is inquiring into whether a current crisis in waste management exists in South Australia as a result, at least in part, of China's National Sword Policy, with reference to:

1. How South Australia has responded to China's recent restriction on its importation of recyclable material;
2. Examining current policy and legislative frameworks (and potential for desirable reforms) that govern resource recovery, in the context of China's National Sword Policy;
3. Whether funding from the state government (including Green Industries SA funding) has been enough to support South Australian businesses and local councils affected by China's National Sword Policy;
4. Identifying short and long term opportunities and solutions in response to China's restriction on the importation of recyclable material;
5. Examining strategies more broadly to reduce waste generation and better managing commercial and industrial, municipal, and construction and demolition waste (and costs thereof); including, but not limited to:
    a. Product stewardship;
    b. Container deposit and other legislative responses;
    c. Improved sorting and processing; and
    d. Re-manufacturing materials locally into desirable products (including energy production) and procurement policies and practices that support the use of re-manufactured products; and
6. Any other relevant matter.

1 INTRODUCTION

1.1 Reason for the inquiry

On 13 May 2019, the Environment, Resources and Development Committee (the Committee) resolved to conduct an inquiry into whether a current crisis in waste management exists in South Australia as a result, at least in part, of China's National Sword Policy.

1.2 Scope of the report

This report addresses the Terms of Reference and touches briefly on Energy from Waste, litter and illegal dumping.

It does not specifically address investment in infrastructure, nor does it address bushfire waste. Anyone seeking information specifically on bushfire waste should visit Waste Management after a Bushfire, South Australia 2019-2020 (https://www.greenindustries.sa.gov.au/bushfires) or https://www.epa.sa.gov.au/environmental_info/waste_management/burn_damage.

This report does not address radioactive waste.

1.3 Disclosure of evidence

The Committee resolved on 3 June 2019 that evidence received would be published on the Committee's website as soon as practicable following receipt of the evidence. This report will also be made available on the Committee's website upon tabling in the Houses.

1.4 Conduct of the inquiry

The Committee considered a wide range of evidence from submissions, witness statements and published literature. The Committee visited the northern and north-western metropolitan areas, Whyalla and SA's regional south east (set out in Appendix A); heard from 39 witnesses (as per Appendix B); and received 54 submissions (listed in Appendix C).

The Committee met on 18 occasions for the purpose of considering evidence and deliberating this report. The procedural meetings of the Committee were held in Adelaide with witness hearings in Adelaide, Whyalla, Millicent and Mount Gambier.

All views expressed by the Committee in this report are based on the evidence presented before it.

1.5 Methods of analysis

1.5.1 Engagement strategy

1.5.1.1 Social media strategy

A communications and engagement plan was developed for this inquiry. Facebook was the social media platform chosen as the primary engagement tool to reach as many interested stakeholders as possible. Twitter was also used to advertise the inquiry, as well as email to reach media and identified stakeholders. An advertisement for this inquiry was placed in every South Australian regional newspaper and the Messenger press.

Three (30-40 second) videos were produced for this inquiry and posted to the Parliament of South Australia – House of Assembly (@houseofassembly and #saparli) Facebook account prior to the closing date for submissions of 19 July 2019.

1.5.1.2 Engagement for site visits

Northern metropolitan area

An approximately 30-second video was produced of the Committee's tour of the northern area recycling and waste management facilities and posted to the House of Assembly Facebook account. The tour was hosted by KESAB who also posted details of the tour on their website.

Whyalla

To promote the Committee's visit to Whyalla and the public hearing, the City of Whyalla provided information through their website and Facebook page, in addition to posting to the House of Assembly Facebook page.

The Whyalla News also published an article on 12 September 2019 promoting the public hearing and site visit. The Committee's Presiding Member conducted radio and press interviews prior to and after the public hearings with follow up articles appearing in the Whyalla News.

South East

A similar approach to engagement was conducted in preparation for and following the visit to the South East. The Mount Gambier and Wattle Range Councils promoted the Committee's visit on their websites and through social media. Local media interviews were conducted prior to the visit, with news articles appearing in the Border Watch and the South East Times before and after the Committee's visit.

This community engagement strategy resulted in a small number of the general public observing the regional hearings held in Whyalla and Mount Gambier, including three members of the public providing evidence to the Committee in addition to the scheduled witnesses.

1.5.2 Receipt of evidence

Evidence was received in the form of written submissions and hearings. Submissions and Hansard transcripts were sorted into groups of stakeholders. The Committee received submissions or heard from, two government departments, 19 local councils or council associations, 13 industry associations, 8 businesses and 19 individuals.

A mixed methods analysis was chosen to provide a combination of quantitative and qualitative analyses. Evidence from submissions was able to be quantified once sorted into themes and examined more closely.

2 DISCUSSION

2.1 Waste management and recycling in Australia

2.1.1 The fate of Australia's waste and recyclables

For every Australian, an astonishing 2.7 tonnes of waste is generated annually (Department of Agriculture, Water and the Environment, 2019a). It follows, therefore, that the fate of our waste is the responsibility of every Australian. Waste generation is driven by growing populations and although resource recovery rates are increasing, waste generation is outstripping the amounts that can be recovered (Department of Agriculture, Water and the Environment, 2019a). Waste that is not recovered goes to landfill or becomes litter that might end up in our oceans, or even washed up on remote Australian or other islands; e.g. Cocos Islands (Lavers, et al., 2019) and Henderson Island (Lavers & Bond, 2017).

Recovered waste that is destined for export is sorted within Australia prior to being on-sold to other countries. In Australia, plastics, paper and cardboard, metals and hazardous waste are the primary materials that are sorted locally and exported. The Australian Bureau of Statistics has more than 10 years of data on the exported fate of Australia's waste and shows that China and other (mostly) south-east Asia countries have been major importers of Australian waste. Australia exported over 4.4 million tonnes of waste in the financial year 2017-18[1] (Blue Environment, 2019). Australia has also been known to contribute to illegally imported waste in countries, such as China (Green Industries SA, 2019a) and Indonesia (Hodge, et al., 2019).

In 2017, China announced to the World Trade Organisation that it would no longer be accepting certain kinds of solid wastes; including plastics waste, unsorted waste paper and waste textile materials (Green Industries SA, 2019a). In more recent years, other Asian countries (Hodge & Visontay, 2019) have announced that they will be similarly 'cracking down' on illegal factories that have been accepting foreign (including Australia's) waste. Further, 'Indonesia's environment ministry … proposed a ban on all imported plastic scrap by 2022' (Hodge, et al., 2019) and is shipping two containers of contaminated waste back to Australia (Hodge, 2019).

Australia's response to this crisis in the fate of its waste has prompted a senate inquiry (Senate Standing Committees on Environment and Communications, 2018) and a parliamentary committee inquiry in Victoria (Environment and Planning Committee, 2019). A further senate inquiry was launched on 23 October 2019 to explore innovative solutions for Australia's waste and resource recovery industry (Senate Standing Committee on Industry, Innovation and Resources, 2019). Regardless of China's policies on the importation of waste from Australia, the Commonwealth has been responsive to Australia's policy challenges on waste management and resource recovery.

The 2018 National Waste Policy features:

> … five overarching principles underpinning waste management in a circular economy. These include:
>
> - Avoid waste
> - Improve resource recovery

[1] Data for 2018-19 are incomplete (Blue Environment, 2019).

- Increase use of recycled material and build demand and markets for recycled products
- Better manage material flows to benefit human health, the environment and the economy
- Improve information to support innovation, guide investment and enable informed consumer decisions.

(Department of Agriculture, Water and the Environment, 2019a)

The 2019 National Waste Policy Action Plan was developed to provide concrete targets and actions for the National Waste Policy.

These [targets and actions] include:

- ban the export of waste plastic, paper, glass and tyres, commencing in the second half of 2020 [now commencing January 2021]
- reduce total waste generated in Australia by 10% per person by 2030
- 80% average recovery rate from all waste streams by 2030
- significantly increase the use of recycled content by governments and industry
- phase out problematic and unnecessary plastics by 2025
- halve the amount of organic waste sent to landfill by 2030
- make comprehensive, economy-wide and timely data publicly available to support better consumer, investment and policy decisions.

(Department of Agriculture, Water and the Environment, 2019b)

During the course of this inquiry, the Council of Australian Governments (COAG) made an agreement in 2019 to establish a timetable to ban the export of waste plastics, paper, glass and tyres. The ban will commence January 2021:

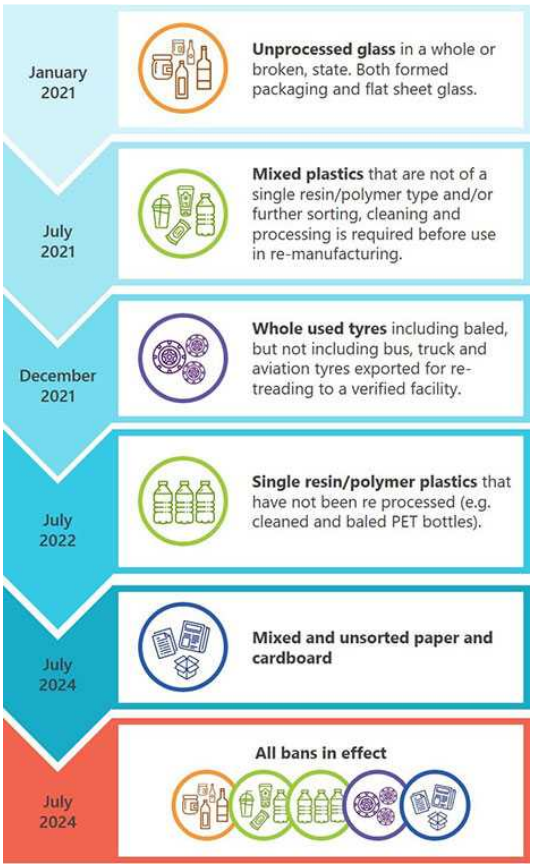

Figure 1. The phased approach to the ban on exported waste (Department of Agriculture, Water and the Environment, 2020)

2.1.2 Regulation of Australia's waste

The regulation of waste management and resource recovery in Australia is primarily governed by local and state and territory governments. At a national level, the Commonwealth government is responsible for ensuring that Australia meets its obligations under international environmental and socio-economic agreements. In particular, the Basel Convention to which Australia has been a signatory since 1992. Australia's obligations, in accordance with the Basel Convention, are to:

- Minimise generation of hazardous waste;
- Ensure adequate disposal facilities are available;
- Control and reduce international movements of hazardous waste;
- Ensure environmentally sound management of wastes; and
- Prevent and punish illegal traffic.

(Department of the Agriculture, Water and the Environment, 2019)

Australia's obligations in accordance with the Basel Convention are observed by the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*. The Commonwealth government has also entered into arrangements with industry in accordance with the Australian Packaging Covenant, the *Product Stewardship Act 2011* and *Product Stewardship (Oil) Act 2000* (Department of the Agriculture, Water and the Environment, 2019).

Australia's waste policy supports legislative frameworks and sets out the role of governments in promoting innovation, developing standards for products and materials, addressing market failures and collecting and reporting on data (Department of Agriculture, Water and the Environment, 2019a).

2.1.3 The South Australian experience

South Australia has a long and proud history of innovation in resource recovery and waste management. Container deposit legislation and schemes (CDL & CDS) have been in place in South Australia since the 1970s, with the deposit increased from 5 cents to 10 cents in 2008. Many items are banned from landfill. Single use plastic bags have been banned since 2009, and many councils in South Australia have implemented a 3-bin kerbside collection service to allow for the separation of general waste, recyclables and organics.

The state government concluded consultation in February 2020 on its draft legislation to ban some types of single use plastics – the *Single-use and Other Plastic Products [Waste Avoidance] Bill* 2019, such as plastic cutlery, etc. The bill is currently before the Parliament with the planned start date of 30 June removed from the legislation in response to the Covid-19 pandemic. The consultation report on the draft bill revealed that submitters wanted further products to be incorporated into the bill:

> Respondents were predominantly in favour of the government's decision to phase out the initial items listed as prohibited plastic products in the Bill.
>
> A number of respondents recommended additional items for phase-out, both as part of the first tranche of products and at a later date.

(Green Industries SA, 2020, p. 3)

Of the ~4.4 million tonnes of waste exported to other countries in 2017-18, South Australia contributed 322,135 tonnes; over half of which was waste metals (199,977 tonnes) (Blue Environment, 2019). Interestingly:

> SA has the lowest per capita landfill disposal rate at 505 kg/p/yr. With this in mind, SA continues to report high overall per capita waste generation rates, and in 2016-17 it … had the highest value in Australia at 3,060 kg/p/yr.
>
> (Rawtec, 2018, p. 31)

South Australia's waste and resource recovery efforts is governed by the Environment Protection Authority (EPA) in accordance with the *Environment Protection Act* 1993 (including the recent (June 2019) amendments), and Environment Protection Policies. Green Industries SA (GISA) works in collaboration with the EPA and the community to develop policy for waste and recycling. GISA also manages the Green Industries Fund:

> Funding for Green Industries SA's programs comes from the solid waste component of the waste depot levy, collected under the Fees and Levies regulations of the *Environment Protection Act 1993*. The Environment Protection Authority collects the levy of which 50% is paid into the Green Industry Fund as set out in the *Green Industries SA Act 2004*. The expenditure authority for the 2019-20 business plan is $66.8 million.
>
> (Green Industries SA, 2019c, p. 23)

2.1.4 Benefits of resource recovery

2.1.4.1 Economic

The waste management and resource recovery industry are a vital part of the South Australian economy with an annual turnover of $1 billion and 4,800 people employed. The industry creates 9.2 direct full-time equivalent employees (FTEs) for every 10,000 tonnes of waste, compared with 2.8 direct FTEs for the same amount of waste that goes to landfill (Green Industries SA, 2019b).

2.1.4.2 Environmental and social

> Better waste management also helps reduce health and environmental problems and prevent pollution of our land and oceans.
>
> (Department of Agriculture, Water and the Environment, 2019a, p. 5)

Better waste management and resource recovery will also play an important role in helping Australia meet its international waste-related obligations.

Specifically, better waste management and resource recovery '… will help address increasing volumes of plastics in the marine environment, now estimated globally to be upward of 150 million tonnes' (Department of Agriculture, Water and the Environment, 2019a, p. 5). Further, better management of food and garden organics waste (also known as FOGO):

> … will reduce greenhouse gas emissions by cutting emissions from landfills. Waste is responsible for approximately two per cent of Australia's emissions consisting largely of methane gas from decay of organic material in landfill.
>
> (Department of Agriculture, Water and the Environment, 2019a, p. 5).

> Diverting just an additional 2 million tonnes of organics from landfill would effectively replace 10,000 tonnes of urea, 1,000 tonnes of phosphate and 5,000 tonnes of potassium sulphate, with

> the resulting yield improvements delivering another $39 million in Australian farm revenue. Additionally, it would avoid approximately 2 million tonnes of CO_2 emissions and sequester approximately 1 million tonnes of CO_2 in soils.
>
> (Bio Gro, 2020)

FOGO also contributes to better soil productivity and water management:

> … they [Jeffries] have been supplying compost for six years to a vineyard, they have taken their carbon from half a per cent to 3½ percent, and they are using 60 per cent less water than their neighbours.
>
> P. Wadewitz, Chair, National and SA Branch, AORA (Jeffries, et al., 2020, p. 110&111)

Finally, a thriving resource recovery industry helps meet the major government policy issues of reducing biodiversity loss, addressing the impacts of climate change and improving public health by ensuring that waste is managed and disposed of responsibly, reducing the need to use raw materials in manufacturing and reducing emissions.

2.3 Term of Reference 1: How South Australia has responded to China's recent restriction on its importation of recyclable material

2.3.1 Impacts of the China National Sword Policy (CNS) to stakeholders in the waste management and resource recovery industry

Submissions described the impacts of the China National Sword Policy (CNS) to South Australian stakeholders in the waste management and resource recovery industry.

2.3.1.1 Economic impacts

Economic impacts were described by submitters (mostly in terms of increased costs) as:

- A diminished competitive market (City of Adelaide, 2019);
- Lower value commodity prices and higher sorting costs (City of Holdfast Bay, 2019; City of Marion, 2019; City of Mount Gambier, 2019; City of Onkaparinga, 2019); and
- Increased gate fees (Limestone Coast Local Government Association, 2019).

More specific examples of economic effects were:

- The price of cardboard dropping by 31% (City of Norwood Payneham & St Peters, 2019);
- Recycling processors no longer providing a rebate and charging a processing fee (impacting on councils in excess of $2 million) (East Waste, 2019);
- Increased gate fees disproportionately affecting regional councils (Environmental Defenders Office (SA) Inc, 2019); and
- 'Global demand for recyclables has now dropped to the point where international Global Trading Indices (PPI:RISI) ceased publishing prices in late 2017' (Waste Management & Resource Recovery Association Australia, 2019).

At least one submitter (City of Mount Gambier, 2019) pointed out having to re-negotiate its contract with recyclers following CNS.

2.3.1.2 Social impacts

Stockpiling was an issue that caused both social and economic impacts. CNS '… created global oversupply of material and insufficient demand has led to stockpiling' (Visy Industries Australia Pty Ltd, 2019). Stockpiling can:

- Interfere with market competition (City of Adelaide, 2019);
- Cause instability in recycling collection and processing services (Environmental Defenders Office (SA) Inc, 2019);
- Create hazards (e.g. fire); and
- Risk the social licence (City of Holdfast Bay, 2019; City of Norwood Payneham & St Peters, 2019; Wattle Range Council, 2019) councils have with the community.

Impacts to legislation followed CNS, because of the increased risk of stockpiling and potential diversion to landfill, and therefore regulations were strengthened to better regulate stockpiling (Environment Protection Authority, 2019).

Finally, one submitter suggested an imbalance in knowledge of market conditions that led to inequitable risk and knowledge sharing amongst stakeholders:

> Although the restrictions from China were foreshadowed, early action to prepare for the impacts could have been improved through analysis to understand and document how SA would be affected. Recyclers were put in position of power (through knowledge not necessarily shared), thus for the most part, able to dictate conditions to clients.
>
> (Fleurieu Regional Waste Authority, 2019, pp. 1-2)

2.3.1.3 Other impacts: positive and negative

Recycling and waste management issues were evident prior to CNS, but have been compounded by the reduced ability to export recyclable materials; most particularly, plastics, paper, cardboard and metals (Environment Protection Authority, 2019).

In contrast to the ways in which the media has been reporting CNS, and Australia's waste issues since CNS (Slezak & Branley, 2018; Anderson, 2019; Cansdale, 2019; Hodge & Rayda, 2019; Lasker & Goloubeva, 2019), the word 'crisis' appeared in only eight submissions[2]. Of the 48 submitters who did not mention the word 'crisis', three submitters (National Waste and Recycling Industry Council, 2019; Waste Management & Resource Recovery Association Australia, 2019; Waste & Recycling Industry Association SA, 2019) alluded to the fact that CNS had been in process for a few years and was therefore expected. One submitter suggested that CNS should be viewed as a 'turning point', rather than a crisis (Waste Management & Resource Recovery Association Australia, 2019). Green Industries SA (GISA) commenced preparations for CNS by establishing a working group as early as November 2017 (Green Industries SA, 2019).

According to some submitters, CNS has highlighted a '… recognition of the value of on-shore processing' (Environmental Defenders Office (SA) Inc, 2019, p. 2). The Chinese Policy has also perhaps highlighted the '… legacy benefits SA achieved prior to China National Sword' (KESAB,

[2] City of Adelaide, City of Tea Tree Gully, City of Marion, Limestone Coast LGA, LGA SA, AHRWMA, SRWRA and Visy.

2019, p. 5). Benefits, such as the Container Deposit Scheme and banning of plastic shopping bags in 2009, have contributed to less landfill and greater resource recovery.

2.3.1.4 State government economic response

In recognition of China's restrictions on importing recyclables, the state government (Green Industries SA) released a $12.4 million package for local government and the resource recovery industry. This package was intended to be directed towards enabling 'industry investment in remanufacturing and local re-use, as well as improved sorting and processing …' (Environment Protection Authority, 2019, p. 2). A further package of $12 million over 4 years (called the Waste and Resource Recovery Modernisation and Council Transition Package) was announced as part of the 2019/20 state budget (Environment Protection Authority, 2019).

2.3.1.5 Attention has been on plastics, but should it be on metals?

Although SA only contributed a small fraction of Australia's overall exported waste, 62% (almost 200,000 tonnes) of SA's recovered metals were sent overseas for processing:

> It is anticipated that the scrap metal industry will face additional negative impacts from further future changes [to] China's policy ban on 16 additional waste types having taken effect from 31 December 2018, including waste hardware and electrical appliances, waste electric motors, waste vessels and other floating structures and baled automobiles, and a further 16 waste types to be restricted from 31 December 2019, including stainless steel scrap and titanium scrap.
>
> (Environment Protection Authority, 2019, p. 2)

According to data on exports of Australian wastes, the export of scrap metal to China had been declining prior to the China National Sword Policy, but not because of a reduction in waste generation, but because more countries participated in the market (Blue Environment, 2019). Exporting scrap metal to other countries can be problematic because it means the impetus is upon Australia (in accordance with the Basel Convention) to ensure that the countries in receipt of its waste can manage the waste in an appropriate manner.

Further, limiting the export of scrap metal, particularly titanium, would appear to be a good model given that mineral sands for titanium are limited for extraction in Australia because of competing claims for access to land:

> Allocation of land to other uses has rendered some mineral sands resources inaccessible to exploration or mining. Geoscience Australia estimates that around 44% of ilmenite and 26% of rutile [both of which are associated with titanium] are unavailable for mining.
>
> (Geoscience Australia, 2019)

During the Committee's visit to Whyalla, the Committee learned of an opportunity in the re-processing and re-manufacture of steel which is being investigated:

> … at Port Pirie there is an old decommissioned warship currently docked, the *HMAS Success*, and it is in the process of being broken. That will commence at Port Pirie and then the hull will be tugged across to Whyalla and the ship will be finally fully broken down in Whyalla, with the ultimate goal being that that's a test case as to whether this can be done in an economically sustainable manner. McMahon's are running that process, and if that goes well we will be looking to have a stream of ships going through that process. That is an exciting opportunity for us.
>
> … there's an issue at the minute because every piece of steel is coated with some amazing marine paint and some sections of that vessel are coated with a tar product. The current furnace technology at the steel plant operates at a significantly lower temperature than an electric arc

> furnace, and so the emissions are certainly unacceptable. The steel that comes from this exercise will be transported and sold and used in other activities. An electric arc furnace solves that issue. That's where this facility would have an ability to process significant levels of scrap material
>
> C. Cowley, CEO, Corporation of the City of Whyalla (Banks, et al., 2019, p. 55&60)

To further close the loop on the export of electric arc furnace (EAF) dust, companies, such as Nyrstar, are capable of extracting and processing the major component of the dust, zinc, within Australia and would prefer that export of EAF dust be limited:

> I believe that Liberty Steel [now InfraBuild] currently has an export licence for 20,000 tonnes of EAF dust (electric arc furnace dust), which they are allowed to export up to 20 October this year [2019] to South Korea.
>
> … the process that is involved in Australia granting export licences for materials that could and should be recycled should be a process whereby the opportunities for recycling within Australia are exhausted first before these licences are granted.
>
> … In my view, the default expectation should be that recycling should be occurring here inside the country primarily, and only if it can be demonstrated that there is no means of recycling should that [export] … be allowed.
>
> N. Clift, Vice President, Australian Operations, Nyrstar (Banks, et al., 2019, pp. 34-35)

In March 2020, the Committee visited Sims Metal Management (SMM), Wingfield, to gain further insight into scrap metal management. SMM at Wingfield purchases and processes ferrous and non-ferrous metal for sale.

SMM experiences challenges that have been exacerbated, but not caused, by CNS (and now the Covid-19 pandemic). For example, domestic costs (such as the shredder floc levy) cannot be pushed onto overseas steel mills, which means these costs are instead pushed onto local sellers of scrap metal by way of lower purchase prices.

The cost of freight also prevents SMM from working effectively with regional areas to purchase and collect regional communities' scrap metal. The cost of freight is such that farmers are leaving scrap metal in paddocks rather than transporting it to a location where it can be accessed by SMM and removed for their processing. In particular, SMM has an ongoing project with KESAB to remove scrap metal from the Anangu Pitjantjatjara Yankunytjatjara (APY) lands, which has been hampered by current market conditions and freight costs.

Also, players in the metal scrap industry who are not compliant are not well policed by an under-resourced state Environment Protection Authority. Greater resourcing to the EPA to allow for better investigation and compliance would assist in creating a more level local playing field for all participants in the scrap metal industry.

Figure 2. Committee visiting Sims Metal Management (SMM), Wingfield, (left to right) Andrew Bell, SMM, Todd Scott, Chief Financial Officer – Australia & NZ, SMM, Hon. Tung Ngo MLC, Stephen Patterson MP, Nick McBride MP, Hon. Mark Parnell MLC, Tony Fox, General Manager – SA/NT, SMM and David Davis, SHEC Manager – SA/NT, SMM

Figure 3. Committee visiting Sims Metal Management (SMM), Wingfield, (left to right) Hon. Mark Parnell MLC, Tony Fox, General Manager – SA/NT, SMM, Hon. Tung Ngo MLC, Nick McBride MP and Stephen Patterson MP and (left to right) Hon. Mark Parnell MLC, Stephen Patterson MP, Hon. Tung Ngo MLC and Nick McBride MP

The Committee also heard from Adelaide Plains Recycling, a small, family-owned business in the north of Adelaide, who also buy and sell scrap metal. Adelaide Plains Recycling have diversified their business model providing cash for containers that are the subject of container deposit legislation as well as other plastics, paper and cardboard and scrap metal. The concerns of Adelaide Plains Recycling centred around options to reduce the cash economy that has grown within the industry:

> … The biggest threat to our business is not being transparent in the sense of the customer coming towards us. In the early days, we had people coming with a non-deposit from Victoria and arguing, and the police and all sorts. If we had had this [cashless] system now, he would have had to identify himself through his credit card; he would be traceable and it would be transparent … There shouldn't be a black market; it should be better than that. We should be more honest and be open with what we do. That would give the industry more credibility; it would raise it to a better level.

E. Stubing, Owner, Adelaide Plains Recycling (Adelaide Plains Recycling, 2020, pp. 156-157)

2.3.1.6 Ethical issues

Four submitters (Fleurieu Regional Waste Authority, 2019; KESAB, 2019; Spencer Gulf Cities, 2019; City of Tea Tree Gully, 2019) pointed out that Australia should not export to countries that do not have the capacity to manage waste in a manner that minimises impacts upon the health of the population and the environment (as per the Basel Convention). Although South Australia only exports approximately 14% of its waste interstate or overseas, there is currently insufficient data to state with certainty that none of South Australia's waste has impacted upon other countries.

2.4 Term of Reference 2: Examining current policy and legislative frameworks (and potential for desirable reforms) that govern resource recovery, in the context of China's National Sword Policy

2.4.1 Current status of policy and legislative frameworks

The Committee was keen to hear whether the community believe that the current policy and legislative frameworks that govern waste management and resource recovery were adequate, particularly in the event of further restrictions on waste imports from other countries.

Because South Australia recovers and locally processes approximately 86% of its waste, further restrictions on imports are unlikely to create intolerable impacts to South Australian businesses. However, high contamination rates from kerbside comingled recycling are impacting upon the ability of South Australia to provide clean products for export to other countries, particularly China.

Challenges and opportunities existed prior to CNS, but CNS has helped highlight a community desire for reform within the waste management and resource recovery industry. Recycling is no longer perceived as an option or a luxury (City of Norwood Payneham & St Peters, 2019) and waste, as a whole, had some submitters calling for it to become managed by government as an essential service (City of Holdfast Bay, 2019; City of Onkaparinga, 2019; Local Government Association SA, 2019; Veolia, 2019).

These are global transformations in the current ways in which we think about waste. Currently, the main focus has been on the safe disposal of waste (Veolia, 2019), with lots of individual solutions to the problems of waste (Fleurieu Regional Waste Authority, 2019).

If reform is not undertaken, or not undertaken holistically, there is a risk that the whole will fail. Reforming only part of the framework may result in:

- Loss of reputation for SA as a leader in waste management and resource recovery;
- Reduced market competition;
- Loss of social licence (decreased community trust in what happens to their recycling);
- Inequity in (or access to) markets across jurisdictions;
- Continued high contamination rates and increased amounts of waste; and/ or
- Markets not existing for re-manufactured products.

2.4.2 Potential for reforms

2.4.2.1 Global or transformative reforms

GISA has drafted its Waste Strategy for 2020-25 for public consultation. An important objective of South Australia's Waste Strategy 2015-20 has been 'a resource efficient economy where the best or full value is secured from products and materials produced, consumed and recovered across the State' (Green Industries SA, 2015, p. 5). The main ways of achieving this objective are by means of the collaborative and/ or circular economy models:

> The collaborative economy considers the design of living systems, including how food is grown and prepared, how people clothe and transport themselves, and how they might collaborate with others to meet their daily needs.
>
> (Green Industries SA, 2015, p. 13)

> A Circular Economy is an alternative to the wasteful traditional 'linear' economy based on 'take, make, use and dispose'. It is a self-sustaining system driven by renewable energy and an imperative to keep material resources in use, or 'circulating' for as long as possible.
>
> (Green Industries SA, 2017, p. 6)

The collaborative economy addresses the first two principles of the waste hierarchy (Figure 1); avoid and reduce. The latter, the circular economy, addresses the other principles of the waste hierarchy; recover, recycle and reuse. Both economies are alternatives to the linear economy based on 'take, make, use and dispose' (Green Industries SA, 2019d), with about half[3] of submitters citing the circular economy (Figure 2) as a good model for SA to adopt.

[3] City of Adelaide, City of Tea Tree Gully, City of Marion, Adelaide Hills Council, Port Adelaide Enfield Council, City of Norwood, Payneham & St Peters, City of Holdfast Bay, DC of Streaky Bay, Wattle Range Council, Alexandrina Council, Copper Coast Council, Spencer Gulf Cities, Limestone Coast LGA, LGASA, NAWMA, AHRWMA, SRWRA, East Waste, Visy, KESAB, EDO, APCO, WRISA, WMRR, NWRIC, SA Wine Industry, Australian Grape & Wine, EPA, GISA.

Figure 4. The waste hierarchy (Green Industries SA, 2015, p. 24)

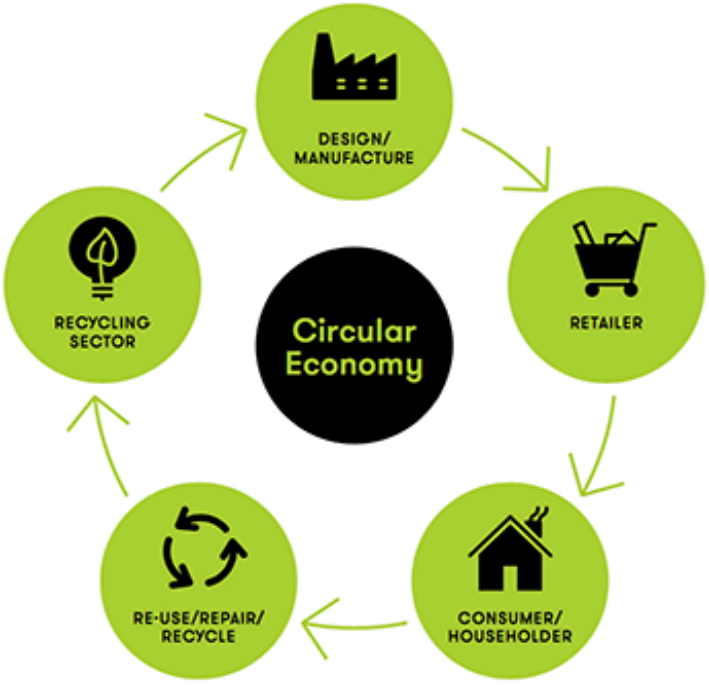

Figure 5. The circular economy (Green Industries SA, 2019d).

Alternatives to the traditional linear model of economy would serve to reduce South Australia's exposure to the vagaries of international markets (Waste Management & Resource Recovery Association Australia, 2019) and limit the amount of waste to landfill. However, with the rise of local processing and remanufacture, local markets need to be established:

> One of the concerns I have is that we [in SA] produce high-quality plastic material, but we can't find a local market for it because we are not doing enough manufacturing … We need to find new industry, new businesses, especially in the manufacturing area.
>
> V. Levitzke, Chief Executive, Green Industries SA (Bellette, et al., 2019, p. 8)

Banning single-use plastics was a topic of discussion amongst submitters with many supporting the state government proposal to ban single-use plastics (City of Norwood Payneham & St Peters, 2019; Fleurieu Regional Waste Authority, 2019; Adelaide Hills Region Waste Management Authority, 2019).

Two outcomes were derived from the analyses: 1) reduce South Australia's dependency upon overseas markets, and 2) reduce overall waste. Many of the reforms that were suggested by submitters were means by which South Australia could achieve these outcomes, such as adopting a circular economy and/ or banning single-use plastics.

2.4.2.2 Local or step-by-step reforms

1. Transparency and accountability

Transparency and accountability were important outcomes to many submitters, with the better sharing of knowledge a means to achieve them. Better data collection on waste, evaluation and reporting, along with targets and market analyses were important to submitters. Of particular importance was:

- Chain-of-custody monitoring (City of Adelaide, 2019);
- Transparent pathways from source to disposal (Limestone Coast Local Government Association, 2019);
- Mass balance reporting of solid waste (City of Tea Tree Gully, 2019; Environment Protection Authority, 2019);
- Waste audits (City of Port Adelaide Enfield, 2019); and
- Real-time weight-based disposal information (City of Adelaide, 2019; Nattrass, 2020; Nattrass, 2019).

Outcomes and targets from the Meeting of Environment Ministers (2018) were also considered important components of data collection, evaluation and reporting (Australian Packaging Covenant Organisation, 2019). Ratings tools such as NABERS certification already exist to provide support for evaluation and decision making (City of Adelaide, 2019). Gaps in data collection and reporting were identified in packaging materials flows (Australian Grape & Wine, 2019; South Australian Wine Industry, 2019) and around some commercial industries, such as hospitality (South Australian Wine Industry, 2019).

Market analyses of the waste management and resource recovery industry were critical to enhance knowledge and further investment (City of Tea Tree Gully, 2019). Sustainability Victoria currently provides a monthly market analysis on the waste and recovered resources industry[4] and has done since March 2019. Acknowledgement of the current and future market volatility has been noted in a report by the Australian Industry Group:

> Global and local markets for recyclable materials such as paper/cardboard, plastics and glass were all volatile in 2019 and this will continue in 2020.
>
> (Australian Industry Group, 2020, p. 4)

[4] Recovered resources market bulletin: https://www.sustainability.vic.gov.au/Business/Investment-facilitation/Recovered-resources-market-bulletin

Finally, a model for pay-by-weight for industry and municipal waste, whereby waste is measured, and subsequently charged for, in real-time is likely to be a fairer and more equitable model (Nattrass, 2020).

2. Certainty, clarity and confidence

There was general agreement that an holistic approach to policy and legislative reform was needed (City of Adelaide, 2019; East Waste, 2019; Fleurieu Regional Waste Authority, 2019; South Australian Wine Industry, 2019), along with national coordination (Veolia, 2019; Australian Packaging Covenant Organisation, 2019; Food South Australia, 2019) and a systemic model for how Australia can deliver the 2025 targets (Australian Packaging Covenant Organisation, 2019).

Better certainty, clarity and confidence for investment within the sector would be achieved by:

- Long term, strategic direction, including sector-wide contingency planning (City of Onkaparinga, 2019) and minimum four-year forecasting for increases in the Solid Waste Levy (SWL) (Northern Adelaide Waste Management Authority, 2019); and
- Clear and defined roles at all levels of government, as well as processes and guidelines to support any reform (City of Adelaide, 2019).

Long term, strategic direction should consider aligning behaviour and outcomes with 'a common focus from all points of the spectrum' (Waste & Recycling Industry Association SA, 2019, p. 2).

> In a decentralised sector such as this [in Victoria], market failures can contribute to a situation where the actual outcomes seen in the sector may not align with public policy objectives because the motivations of businesses and households do not align with those of government. This is because each individual makes the correct decision for themselves, but those may be the wrong decisions for the group. For example, businesses do not currently face the full cost of the materials they use in production, or of waste created by packaging and product obsolescence, which can hinder the use of recycled materials in production and lead to over-production of waste. Households do not face all the costs of their waste consumption, sorting and disposal, which can lead to over-consumption and contamination of material streams. This, in turn, can lower the market value of materials streams further down the waste lifecycle and deter investment in re-processing and recycling infrastructure
>
> (Infrastructure Victoria, 2019, p. 17)

Better confidence in the sector would be achieved by proactively identifying and addressing emerging issues (District Council of Streaky Bay, 2019), including acknowledging that technology is moving faster than policy and legislation; e.g. Energy from Waste (EfW) in northern Adelaide (Environmental Defenders Office (SA) Inc, 2019). It was argued that confidence could also be increased by ensuring that policy and legislative decisions were based on the best available evidence (Australian Grape & Wine, 2019) and by reviewing best practices globally (South Australian Wine Industry, 2019).

Increased certainty could be achieved by local and state government procuring products with a greater recycled content. The current sectoral approach to procurement by state agencies results in an ad hoc and opportunistic prioritising of procurement decisions that are influenced by positive social or environmental outcomes (South Australian Productivity Commission, 2019).

Local government has, however, seen an opportunity to trial different procurement practices to increase procurement of recyclable materials:

> Councils participating in the Buying it Back LGA Circular Procurement Pilot Project are seeking to use their combined buying-power to significantly increase demand for recyclable materials in South Australia.
>
> The aim of this project is to improve the sustainability of waste management practices, ensure the ongoing viability of our recycling system and, over time, reduce councils' waste management costs. The project represents a significant step towards developing local markets and on-shore processing for recyclable materials within Australia and establishing a truly circular economy.
>
> (Local Government Association SA, 2019c)

The Prime Minister acknowledged the job-creating potential of domestic resource recovery by announcing (2 March 2020) that Commonwealth Procurement Guidelines will be strengthened to ensure that procurement undertaken by Commonwealth agencies consider recycled content as a factor in determining value for money.

3. Use of economic, policy and legislative tools to influence behaviours

The use of economic, policy and legislative tools to promote good recycling behaviours and reduce contamination was discussed, with some disagreement on mandating some levers. The use of economic tools may also, in some instances, be unfeasible, and possibly unlawful, unless adopted at a national level.

Economic, policy and legislative tools were aimed at packaging, products and source separation. Disincentives were suggested, such as tariffs to embed best practice packaging (Fleurieu Regional Waste Authority, 2019) and taxing companies using non-recyclable packaging (City of Tea Tree Gully, 2019). The suggestions to mandate recycled content into packaging (Waste Management & Resource Recovery Association Australia, 2019) was countered by claims that increased cost pressures should be minimised or avoided (South Australian Wine Industry, 2019) and that compliance with the CDS was already quite onerous on beverage businesses (Food South Australia, 2019). Incentives for best practice; e.g. concessions (City of Norwood Payneham & St Peters, 2019; City of Tea Tree Gully, 2019), were suggested (National Waste and Recycling Industry Council, 2019). Exemptions from the solid waste levy (SWL) for recyclers (Visy Industries Australia Pty Ltd, 2019; Waste Management & Resource Recovery Association Australia, 2019) or levy discounts (National Waste and Recycling Industry Council, 2019) were also incentives to encourage best practice.

Economic[5] and legislative[6] tools were suggested to encourage best practice in product stewardship and minimise production of non-recyclable or hard-to-recycle products. Submitters suggested expanding the current Product Stewardship Scheme (PSS) (City of Norwood

[5] Levers such as import restrictions, taxes, labelling and accreditation, levies for non-recyclable or hard to recycle products (City of Norwood Payneham & St Peters, 2019; Adelaide Hills Region Waste Management Authority, 2019) and commercial terms to discourage contamination (National Waste and Recycling Industry Council, 2019).

[6] Mandated product stewardship (City of Marion, 2019; City of Onkaparinga, 2019; Wattle Range Council, 2019; Fleurieu Regional Waste Authority, 2019; Southern Region Waste Resource Authority, 2019) and improved labelling (East Waste, 2019) with national accreditation, such as the Australasian Recycling Label (Fleurieu Regional Waste Authority, 2019; Adelaide Hills Council, 2019).

Payneham & St Peters, 2019), whilst other submitters suggested specific product stewardship programs, such as the South Australian Container Deposit Scheme (CDS) be reviewed (City of Marion, 2019) and broadened (Waste Management & Resource Recovery Association Australia, 2019; Waste & Recycling Industry Association SA, 2019). The SA CDS is currently under review, with a scoping paper during January–March 2019, Improving South Australia's Recycling Makes Sense, and consultation summary report in August 2019. Further public consultation was planned for early 2020, although this has likely been deferred due to the Covid-19 pandemic (Environment Protection Authority, 2019a). An impact analysis of economic and legislative tools has been suggested as a worthwhile exercise prior to implementation of such tools because impacts to small businesses of mandated PSSs are likely to be significant (Food South Australia, 2019).

4. Investment in additional infrastructure and planning

Interesting suggestions were received from submitters for investing in infrastructure planning into the future. GISA has recently undertaken a review (2018) into SA's infrastructure capacity and opportunities for expansion. Submitters felt that infrastructure planning and investment in additional infrastructure in SA was important to reduce reliance upon external markets (City of Adelaide, 2019; City of Mount Gambier, 2019). Not only were there suggestions for improvements in quality of sorting and recovery (National Waste and Recycling Industry Council, 2019; Roxby Council, 2019), but also targeted investment in remanufacture infrastructure (Visy Industries Australia Pty Ltd, 2019). Such support could be implemented through infrastructure grants (Australian Packaging Covenant Organisation, 2019) and careful planning to ensure remanufacturers can be co-located with Materials Recovery Facilities (MRFs) (City of Onkaparinga, 2019). A secure, ongoing funding base is required to '… facilitate investment in new and upgraded resource recovery infrastructure and increasing local reprocessing and remanufacture' (Green Industries SA, 2019, p. 9).

The Southern Region Waste Resource Authority (SRWRA), jointly owned by the Cities of Holdfast Bay, Marion and Onkaparinga, has developed a business case for a new MRF facility to help the region process its own waste and move towards a circular economy (City of Holdfast Bay, 2019; Pisani, 2019; Southern Region Waste Resource Authority, 2019). A new MRF for the southern metropolitan region was identified in the state's Waste and Resource Recovery Infrastructure Plan (2018) and would demonstrate how collaboration at a regional scale may work to reduce costs to councils and the community and provide local jobs (City of Holdfast Bay, 2019a).

5. Collaboration, partnerships and communication

Better partnerships and collaboration amongst councils were seen as critical to the future of waste management and resource recovery in regional areas. The creation of regional waste management and resource recovery hubs, where councils may better share resources and allocate specialty infrastructure, is likely to reduce costs (particularly for transport) for those areas (Copper Coast Council, 2019).

> We think there are opportunities, not just with plastics but with a whole lot of waste streams potentially that, as you say, find their way into the city predominantly and then get taken on for processing and transport there. Transport is one of the biggest problems we have in regional areas in terms of really being able to drive some of these economies of scale and economics.

> … we have we think the potential in terms of existing capacity, transport infrastructure and other infrastructure and markets potentially to do some of that processing and reprocessing, and remanufacturing out here in the region. In some ways, we would like to see some of that drift into the city, around raw material actually flowing back out into our region.
>
> A. Crisp, Executive Officer, Spencer Gulf Cities (Banks, et al., 2019, p. 38)

Harmonising regulation and policies across all levels of government and jurisdictions was also seen to be important for the future of waste management and resource recovery (Environment Protection Authority, 2019); in particular, the inter-jurisdictional movement of controlled waste (Environment Protection Authority, 2019).

Submitters highlighted the need for consistency in education and awareness across the state and across jurisdictions (Adelaide Hills Council, 2019; City of Holdfast Bay, 2019; City of Norwood Payneham & St Peters, 2019; City of Tea Tree Gully, 2019; Waste & Recycling Industry Association SA, 2019). A submitter (Northern Adelaide Waste Management Authority, 2019) also highlighted the existence of a locally-based circular economy training and demonstration lab, and Green Industries SA, in partnership with Circular Economy Alliance Australia, delivers a global leadership program.

Regardless of the policy and legislative reforms that are undertaken, collaboration with all stakeholders on reform (KESAB, 2019) was important to submitters.

6. Flexibility of policy and legislation to allow innovation of industry practices

Submitters suggested that any reform of policy and legislation aimed at improving industry practices should provide for flexibility within policies to allow for trialling of the frequency of collection services (City of Onkaparinga, 2019; Waste Management & Resource Recovery Association Australia, 2019; City of Port Adelaide Enfield, 2019; Northern Adelaide Waste Management Authority, 2019; Adelaide Hills Council, 2019), including the potential for 3-bin collection from schools (City of Tea Tree Gully, 2019). Flexibility of policy and legislation should be supported by investment in research and development (City of Holdfast Bay, 2019) and grants for new products (Copper Coast Council, 2019).

7. Reducing contractual and investment risk

Policy and legislative reforms should aim to reduce socio-economic risk, such as:

- Loss of social contract that councils hold with communities; i.e. legislative and policy barriers (Southern Region Waste Resource Authority, 2019), negative media (Waste & Recycling Industry Association SA, 2019) and gaps in data all present risks to the social contract that councils hold with communities (South Australian Wine Industry, 2019);
- Capital investment and regulatory hurdles that lead to reduced competition (City of Tea Tree Gully, 2019);
- Current contractual risk and the lack of revenue sharing arrangements between councils and industry, as well as non-separation of the collector and recycler contract (National Waste and Recycling Industry Council, 2019); and
- Risks of SA going ‘early and alone’ (Food South Australia, 2019) and becoming an expensive state in which to live.

2.5 Term of Reference 3: Whether funding from the state government (including Green Industries SA funding) has been enough to support South Australian businesses and local councils affected by China's National Sword Policy

The South Australian Government, through GISA, released $12.4 million in funding in response to CNS.

> The government provided Green Industries SA (GISA) with $7 million in addition to existing expenditure authority in 2018-19 to administer the support package [infrastructure loans and grants and regional transport subsidies] … $5.4 million of GISA's existing expenditure authority in 2018-19 was allocated towards the support package as directed by the Minister for Environment and Water [recycling infrastructure, education and market development grants].
>
> (Green Industries SA, 2019e)

The support package was primarily directed towards industry, with some funding available to regional councils to assist with additional transport costs and education[7] (Green Industries SA, 2019). Submitters generally perceived the government support package as a valuable investment following CNS, although six submitters[8] considered the funding insufficient; particularly, if it was to take recycling into a successful future.

Submitters did, however, point out that, as a result of CNS, councils were subjected to higher gate fees, due to Materials Recovery Facilities (MRFs) passing on the increased costs of overseas restrictions (City of Marion, 2019). Further, some councils were forced to re-negotiate contracts because of stock limits placed on some recyclers (City of Adelaide, 2019). Specific additional costs cited were:

- Additional recycling costs of up to $265,000 (Adelaide Hills Council, 2019);
- Approximately $1.1 million per year from lower commodity prices and higher sorting costs (City of Onkaparinga, 2019); and
- Processing of recyclables at $60/tonne processing/ disposal fees because of oversupply and increased competition with domestic markets (City of Holdfast Bay, 2019).

On the positive side, CNS has forced a statewide discussion to consider local processing and remanufacture of waste (Spencer Gulf Cities, 2019).

2.5.1 Increases in waste levies in the 2019-20 State Budget

During the progression of this inquiry, the government announced increases in solid waste levies[9] for the 2019-20 budget. The increases in solid waste levies was announced at a time

[7] The which bin campaign featured a series of adverts aimed at educating the community in reducing source contamination in kerbside recycling.

[8] City of Adelaide, Adelaide Hills Council, City of Port Adelaide Enfield, Wattle Range Council, LGA SA and AHRWMA.

[9] Section 113 of the Environment Protection Act 1993 requires the payment of prescribed levy by the holder of a licence to conduct a waste depot in respect of waste received at the depot. Regulation 70 of the Environment Protection Regulations 2009 prescribes the waste levy payable (Environment Protection Authority, 2019b)

when councils were finalising their 2019-20 budgets (Waste Management & Resource Recovery Association Australia, 2019). Increases in the solid waste and shredder floc levies are set out below:

1 July–31 Dec 2019	*Solid waste depot levy*	*Shredder floc levy*
Metropolitan Adelaide	$110/tonne	no increase ($62/tonne)
Non-metropolitan	$55/tonne	no increase ($31/tonne)
1 Jan–30 June 2020	*Solid waste depot levy*	*Shredder floc levy*
Metropolitan Adelaide	$140/tonne	$70/tonne
Non-metropolitan	$70/tonne	$35/tonne

(Environment Protection Authority, 2019b)

The increases in levies raised a number of concerns from industry and councils, for example:

- The size of the increase (City of Adelaide, 2019; City of Marion, 2019; City of Onkaparinga, 2019; City of Norwood Payneham & St Peters, 2019; Adelaide Hills Council, 2019; Local Government Association SA, 2019a);
- Unexpected and abruptness of its announcement (City of Onkaparinga, 2019; East Waste, 2019; Northern Adelaide Waste Management Authority, 2019);
- Timing of the announcement which caused impacts to councils' budgets (City of Norwood Payneham & St Peters, 2019; Waste Management & Resource Recovery Association Australia, 2019; Wattle Range Council, 2019; KESAB, 2019; Adelaide Hills Region Waste Management Authority, 2019); and
- Lack of engagement and consultation with councils by government in its decision (City of Norwood Payneham & St Peters, 2019; Wattle Range Council, 2019).

Some councils also pointed out the risk for perverse outcomes following the announcement, including:

- Increased uncertainty for the sector and perceptions of revenue raising (City of Onkaparinga, 2019); and
- Inadvertently incentivising transport of waste interstate and/ or illegal dumping (Waste Management & Resource Recovery Association Australia, 2019).

The EPA's position is that 'the waste levy provides a price signal that reflects the adverse environmental impacts of waste disposal' and acts as an incentive to divert waste from landfill (Environment Protection Authority, 2019, p. 4). The Local Government Association SA pointed out that the levy is unlikely to influence individuals' behaviours because the price signal is dampened amongst rate payers (Local Government Association SA, 2019a).

In response to increased financial commitments, there were calls for longer lead times for introduction of increases to waste levies (Northern Adelaide Waste Management Authority, 2019); a freeze on any further increases to levies (Wattle Range Council, 2019; Local

Government Association SA, 2019a); and for discounted levies for Materials Recovery Facilities (MRFs) (East Waste, 2019).

More positive responses included taking the opportunity to address problematic waste streams and developing better responses (KESAB, 2019), as well as acknowledging the Environment Minister's pledge to fund the strategy towards banning single-use plastics (Environmental Defenders Office (SA) Inc, 2019).

2.5.2 Expenditure of waste levies

> The funding support package has supported more than 30 industry and local government projects[10] that have generated more than $40 million in direct investment in this state. The projects have created 200 new jobs and diverted an estimated 138,500 tonnes of material from landfill per year. The projects span several years and expenditure is distributed across multiple financial years.
>
> (Green Industries SA, 2019, p. 4).

Whether submitters agreed government support for industry and councils post-CNS was adequate, the expenditure of levies was clearly an issue. There was a great deal of support for the solid waste levy (SWL) to be expended on waste management activities and that diversion of the SWL to other programs was inequitable. For example, the most supported suggestion was for a percentage (two submitters suggested 50%[11]) of the SWL be diverted to councils for strategic waste management activities (City of Onkaparinga, 2019; Limestone Coast Local Government Association, 2019; Wattle Range Council, 2019; Copper Coast Council, 2019; Adelaide Hills Council, 2019) and should be legislatively quarantined (City of Norwood Payneham & St Peters, 2019). It was also suggested that the SWL be reduced by any amount not diverted to GISA priorities (City of Adelaide, 2019).

A potentially more strategic approach to the allocation of funds was to review the fund, and the funds within, and develop principles governing collection and distribution (East Waste, 2019). This would provide clarity over who funding is directed at (City of Adelaide, 2019), as well as transparency for Ministerial decisions on allocating funds. Objective evaluation of the support package (City of Tea Tree Gully, 2019) would contribute to transparency and accountability and is likely to be well supported.

There was support for investment in MRF capacity to reduce market uncertainty (City of Holdfast Bay, 2019) and in domestic manufacturing (Adelaide Hills Region Waste Management Authority, 2019). Also, there was support for investment not just for the public, but also the private waste management sector (Limestone Coast Local Government Association, 2019; Adelaide Hills Region Waste Management Authority, 2019; Copper Coast Council, 2019). Regional funding was considered important (Spencer Gulf Cities, 2019), as well as education and signage to better manage source separation (East Waste, 2019; KESAB, 2019; Adelaide Hills Region Waste Management Authority, 2019).

[10] Information about the projects can be found here: https://www.greenindustries.sa.gov.au/projects-funded

[11] NAWMA and LGA SA

2.6 Term of Reference 4: Identifying short- and long-term opportunities and solutions in response to China's restriction on the importation of recyclable material

Most of the proposed opportunities and solutions fell into either global actions and transformational change or local actions with behaviour change with a mix of short- and long-term solutions. A number of these solutions were for issues that are long-standing and have been highlighted, rather than caused, by the China National Sword (CNS) Policy.

Suggestions were markedly positive, indicating that the community and industry viewed CNS in terms of opportunities for the future direction of waste management and resource recovery.

2.6.1 Global or transformational change

Consistent with being highest on the waste hierarchy, waste avoidance and reduction (Environmental Defenders Office (SA) Inc, 2019) was a focus for change. Also, some submitters saw that governing waste as an essential service (Veolia, 2019) to allow for greater state government oversight was an important change.

Overwhelmingly, there was a desire to decouple the state from external markets (City of Adelaide, 2019; City of Onkaparinga, 2019; Environment Protection Authority, 2019; Green Industries SA, 2019) (see also Section 2.4.2 above) and to provide self-sufficiency for future generations (City of Marion, 2019). A circular economy, compared to the business-as-usual scenario, could deliver significant job creation and greenhouse gas reduction benefits (Green Industries SA, 2019).

A circular economy market development grants program would help support the transition to a circular economy as would commercialisation of innovation business development programs, such as solutions to long standing problematic wastes which have global significance (Green Industries SA, 2019).

Tools to bring about changes at the manufacturing stage focussed on using economic or policy and legislative levers for incentivising good manufacturing and packaging practices; such as legislative tools to control problematic waste (City of Port Adelaide Enfield, 2019), e.g. Product Stewardship Schemes (Roxby Council, 2019), and minimum packaging requirements (City of Adelaide, 2019). Even further, were quite specific suggestions on banning single-use plastics (National Waste and Recycling Industry Council, 2019) and moving towards compostable packaging (City of Tea Tree Gully, 2019), and regulating recycled content in PET, HDPE and PP plastic packaging (National Waste and Recycling Industry Council, 2019).

Economic or policy and legislative tools were also suggested for increasing the amount of recycled content at the manufacturing stage in products and packaging. For example:

- Mandating recycling content (Northern Adelaide Waste Management Authority, 2019), with targets (Waste Management & Resource Recovery Association Australia, 2019);
- Encouraging manufacturers to utilise recycled materials and increasing demand for materials with the highest possible recycled content (South Australian Wine Industry, 2019);
- Economic levers to increase support for re-useable products (City of Norwood Payneham & St Peters, 2019);

- Transparency in recycling contracts in relation to the destination of recyclables (Waste Management & Resource Recovery Association Australia, 2019);
- Developing product standards that support or enable the use of recovered materials (Environment Protection Authority, 2019);
- Prioritising development of local industries that recycle plastics (City of Port Adelaide Enfield, 2019);
- Promoting recyclables over virgin materials (Local Government Association SA, 2019a);
- Partnering of government and industry for a national accreditation system (Local Government Association SA, 2019a); and
- Implementing more consistent policy language across jurisdictions (Local Government Association SA, 2019a).

Along with economic and policy and legislative tools, strategic planning and action underpinned by better knowledge were suggested. For example:

- Planning at a state and regional level (Limestone Coast Local Government Association, 2019; District Council of Streaky Bay, 2019) and collaborating for solutions at the regional and local level (Fleurieu Regional Waste Authority, 2019; District Council of Streaky Bay, 2019);
- Reviewing local government contracts and moving towards risk-sharing with industry (Waste Management & Resource Recovery Association Australia, 2019; Waste & Recycling Industry Association SA, 2019; National Waste and Recycling Industry Council, 2019);
- Relaxing policies on the frequency of bin collections to allow individual councils to trial new collections practices (City of Holdfast Bay, 2019; City of Onkaparinga, 2019; City of Tea Tree Gully, 2019);
- Assisting councils to conduct detailed waste infrastructure planning (Limestone Coast Local Government Association, 2019);
- Evaluating actions against targets (City of Adelaide, 2019);
- Planning for industry growth (Spencer Gulf Cities, 2019);
- Gathering better data (District Council of Streaky Bay, 2019) and sharing knowledge (Environmental Defenders Office (SA) Inc, 2019);
- EPA needs funding to appropriately monitor and respond to stockpiling (National Waste and Recycling Industry Council, 2019);
- Investigating higher education opportunities on principles of circular economies (Spencer Gulf Cities, 2019); and
- Conducting ongoing market analysis (Fleurieu Regional Waste Authority, 2019; Waste & Recycling Industry Association SA, 2019).

Finally, investigating the potential for small-scale Energy from Waste (EfW) (Roxby Council, 2019) and developing EfW (National Waste and Recycling Industry Council, 2019) were also posed as opportunities and solutions.

2.6.2 Local actions and behaviour change

Many positive solutions and opportunities for local actions were put forward. Arguably, the most consistently shared solution was for the creation of local markets for remanufactured products.

For example:

- State and local procurement practices (City of Adelaide, 2019; City of Marion, 2019; Environment Protection Authority, 2019; Adelaide Hills Council, 2019) be reviewed and incentivised towards recycled content (East Waste, 2019);
- Reprioritising government procurement practices away from lowest cost (Veolia, 2019);
- Investing in local infrastructure (City of Onkaparinga, 2019) and increasing capacity for onshore processing (City of Holdfast Bay, 2019; City of Norwood Payneham & St Peters, 2019);
- Research and development into local markets (City of Holdfast Bay, 2019; City of Onkaparinga, 2019); and
- Procurement working groups and trials for products (Environment Protection Authority, 2019).

Improved sorting (source separation and MRFs) was also a popular solution to reduce the costs of resource recovery. For example:

- Reviewing source separation (City of Tea Tree Gully, 2019) and collection methods (South Australian Wine Industry, 2019) that minimise contamination;
- Separate kerbside bins for glass to reduce contamination of paper and cardboard products (South Australian Wine Industry, 2019);
- Statewide education for community, manufacturers, producers and retailers (City of Marion, 2019; Adelaide Hills Council, 2019);
- Statewide consistency in colours for wheelie bin lids (City of Mount Gambier, 2019); and
- Provision of neighbourhood sorting stations (South Australian Wine Industry, 2019).

It was also pointed out that there is a lack of suitable labour and the need to increase migration and make available appropriate visas to create capacity in this industry (National Waste and Recycling Industry Council, 2019).

2.7 Term of Reference 5: Examining strategies more broadly to reduce waste generation and better managing commercial and industrial, municipal, and construction and demolition waste (and costs thereof)

Waste generation is increasing per capita; by ~13% from 2014/15 to 2017/18 (Environment Protection Authority, 2019). The Waste Strategy for SA 2020-2025 will include priorities and targets for reducing per capita waste by 5% on a 2020 baseline (Green Industries SA, 2019).

A variety of solutions were posited by submitters to reduce waste, many of which were about large-scale avoidance and reduction, but some suggested more incremental behaviour changes. Once again, it highlights that an holistic approach to reform is needed which addresses all levels of government, global transformations and local actions and, in particular, making consistent outcomes and behaviours at all points along the process; for example:

- Reduction of waste through efficient packaging design (City of Adelaide, 2019);
- Banning all problematic wastes (City of Port Adelaide Enfield, 2019);

- Banning single-use plastics (Green Industries SA, 2019; City of Tea Tree Gully, 2019; Waste & Recycling Industry Association SA, 2019; National Waste and Recycling Industry Council, 2019), in the context of circular economy (Waste & Recycling Industry Association SA, 2019), and supporting alternatives to single-use plastics (District Council of Streaky Bay, 2019);
- Community education to reduce littering (KESAB, 2019); and
- Prioritising targets to reduce waste (Fleurieu Regional Waste Authority, 2019; Green Industries SA, 2019).

2.7.1 Product stewardship

2.7.1.1 Products

Numerous Product Stewardship Schemes (PSSs) exist in Australia. The *Product Stewardship Act 2011* (Cwlth) provides flexibility for different types of regulation; such as mandatory, co-regulatory and voluntary. Voluntary product stewardship schemes are industry-led and currently includes a voluntary accreditation scheme. Co-regulatory schemes are regulated by the Australian government and currently incoporate the national television and computer recycling scheme.

The Federal Environment Minister agreed the following products are priorities to be considered for a product stewardship approach (2017-18):

- Plastic microbeads (and products containing them);
- Batteries;
- Photovoltaic systems;
- Electrical and electronic products; and
- Plastic oil containers.

There was extensive support from submitters for product stewardship programs to be expanded (Limestone Coast Local Government Association, 2019; East Waste, 2019; City of Tea Tree Gully, 2019; Northern Adelaide Waste Management Authority, 2019; Waste & Recycling Industry Association SA, 2019), and for greater respsonsibility to be borne by manufacturers for products at the end of their life (Fleurieu Regional Waste Authority, 2019; Southern Region Waste Resource Authority, 2019) (including the cost of disposal (East Waste, 2019)). There was a call for national leadership (Environmental Defenders Office (SA) Inc, 2019; Environment Protection Authority, 2019; National Waste and Recycling Industry Council, 2019) and improvement through a regulatory approach (KESAB, 2019; City of Port Adelaide Enfield, 2019) although a mix of voluntary strategies and legislative tools (KESAB, 2019) was also suggested. It was suggested a co-regulatory framework would ensure all industry stakeholders participate (Green Industries SA, 2019) and that stewardship activities need to be industry-led to gain buy-in and acceptance (Australian Grape & Wine, 2019). An appropriate outcome from improving product stewardship schemes at a national level is that mandating and incentivising stewardship should encourage life-cycle and efficient (Fleurieu Regional Waste Authority, 2019) designs for products.

Industry bodies expressed support for national stewardship schemes with clear targets and reporting requirements (Green Industries SA, 2019; National Waste and Recycling Industry Council, 2019), supported by a national labelling system (City of Norwood Payneham & St Peters, 2019; Australian Packaging Covenant Organisation, 2019).

2.7.1.2 Packaging

> Twenty-six of the 28 EU Member States currently have [Extended Producer Responsibility] EPR schemes in place for packaging waste.
>
> … All schemes include some basic fee modulation (charging differing fees to producers for each packaging material), with fees for plastic and for composite packaging materials typically significantly higher than fees for other packaging materials …
>
> (Watkins, et al., 2017, p. 1)

A reduction in the amount of packaging (Roxby Council, 2019) and in the variation in packaging (i.e. reducing the amount of composite packaging or multiple layer packaging) (City of Holdfast Bay, 2019; Fleurieu Regional Waste Authority, 2019) was cited by submitters as being important. Further, it was suggested that the costs of disposing composite packaging materials should be shared between councils, consumers, the waste management and resource recovery industry, and designers and manufacturers of packaging (Waste Management & Resource Recovery Association Australia, 2019).

At the Meeting of Environment Ministers (April 2018):

> Ministers endorsed a target of 100 percent of Australian packaging being recyclable, compostable or reusable by 2025 or earlier. Governments will work with the Australian Packaging Covenant Organisation (APCO), representing over 900 leading companies, to deliver this target. Ministers endorsed the development of targets for the use of recycled content in packaging, and this will be closely monitored.
>
> (Meeting of Environment Ministers, 2018, p. 1)

At least one submitter called for revising the national packaging targets to 2022, not 2025 (National Waste and Recycling Industry Council, 2019).

To provide support for the new benchmark in Australian packaging, a review of better transparency and accountability through materials tracking (Fleurieu Regional Waste Authority, 2019), is required to demonstrate that packaging is being recycled (KESAB, 2019). It is felt that the Australian Packaging Covenant Organisation's (APCO's) Annual Reporting Tool and Packaging Sustainability Frameworks (Australian Packaging Covenant Organisation, 2019) may be usefully applied here.

There was concern expressed over any increase in the price of packaging, with one submitter suggesting the purchase price of packaging needs to be cost neutral (KESAB, 2019).

The Australian wine and grape industry pointed out that glass wine bottles already contain over 30% recycled content (Australian Grape & Wine, 2019; South Australian Wine Industry, 2019), and that the Australian wine industry is already engaged with APCO via the wine industry sustainable packaging working group (Australian Grape & Wine, 2019).

Finally, engagement and education, particularly with importers, producers and end-users, was seen as important for any proposed changes to packaging regulations (Fleurieu Regional Waste Authority, 2019; Australian Packaging Covenant Organisation, 2019; Waste & Recycling Industry Association SA, 2019).

2.7.2 Container deposit schemes

Container deposit legislation was first enacted in SA in 1977 in accordance with the *Beverage Container Act* 1975. The *Environment Protection Act* 1993 now governs this scheme and collects the levy on beverage containers that qualify.

In 2018-19, over 612 million containers (41,372 tonnes) were returned to 132 collection depots across the state (Environment Protection Authority, 2019a). SA leads the nation (City of Adelaide, 2019) with a return rate of almost 77% (Environment Protection Authority, 2019a).

> It still remains popular in the state, with 98 per cent of South Australians supporting the program, according to the CDL Awareness & Support Research Report, prepared for the South Australian Environment Protection Authority (SA EPA). It was even listed as a state heritage icon in 2006 as improving the quality of life in SA.
>
> … NSW has recently begun its own recycling scheme similar to SA's CDL. The Return and Earn scheme began in December of 2017, and has collected more than 100 million containers in the three months.
>
> … Victoria is currently the only state [at the time of writing] that has not started or begun to plan implementation of CDL. QLD, WA, and ACT have schemes planned to begin in 2018 and 2019, with the NT introducing their own in 2012.
>
> (Waste Management Review, 2018)

There is further value in such schemes as providing early separation of glass from kerbside recycling which ensures less contamination and increases the value of cardboard and paper (Fleurieu Regional Waste Authority, 2019).

The EPA is, at the time of writing this report, is reviewing further opportunities for the Container Deposit Scheme in SA.

There was a great deal of support from submitters to this inquiry for increasing the scope of container deposit schemes (City of Norwood Payneham & St Peters, 2019; Waste Management & Resource Recovery Association Australia, 2019; Fleurieu Regional Waste Authority, 2019; City of Tea Tree Gully, 2019; Northern Adelaide Waste Management Authority, 2019; Waste & Recycling Industry Association SA, 2019; National Waste and Recycling Industry Council, 2019; Adelaide Hills Council, 2019), along with suggestions for nationalising (Northern Adelaide Waste Management Authority, 2019; Waste & Recycling Industry Association SA, 2019) such schemes and increasing the redemption amount (Northern Adelaide Waste Management Authority, 2019).

It was also pointed out that there is a need to facilitate an exemption from the Commonwealth *Mutual Recognition Act 1992* regarding free and fair trade between the states (Green Industries SA, 2019).

An important aspect of container deposit schemes is the social licence to operate. Although the scheme initially began as a means to reduce litter, these days consumers expect that containers will be recycled. Increasing scrutiny from collection to reprocessing (City of Marion, 2019) is likely to maintain or increase the validity of a social licence for container deposit schemes and help provide justification for changing the variables within the scheme (East Waste, 2019; Fleurieu Regional Waste Authority, 2019; KESAB, 2019; South Australian Wine Industry, 2019).

Another aspect that would increase the validity of the social licence would be to have a national registration system for container deposit schemes. It would also help reduce costs to manufacturers, who currently need different labelling and sales reporting tools for different states (Food South Australia, 2019).

2.7.3 Improved sorting and processing

Investment in infrastructure (City of Onkaparinga, 2019) for improved sorting and processing (City of Holdfast Bay, 2019; National Waste and Recycling Industry Council, 2019), including development of technologies (Fleurieu Regional Waste Authority, 2019), such as optical and robotic (City of Port Adelaide Enfield, 2019), to reduce contamination was supported. Also, running MRFs at a slower speed and undertaking multiple sorts (Waste Management & Resource Recovery Association Australia, 2019).

Improved source separation was also supported, particularly with statewide consistency and more knowledge and strategies to be supported by a policy and legislative framework and education. For example:

- Statewide consistency in bins (City of Mount Gambier, 2019) and services (Adelaide Hills Council, 2019), including food and garden organics (FOGO) (Limestone Coast Local Government Association, 2019; Local Government Association SA, 2019a);
- Reviewing the kerbside collection system (City of Tea Tree Gully, 2019), with a review and cost/ benefit analysis of removing glass (Fleurieu Regional Waste Authority, 2019) from yellow-lid bins;
- Better solutions to manage mixed plastics (Fleurieu Regional Waste Authority, 2019);
- Banning unnecessary and problematic waste streams (National Waste and Recycling Industry Council, 2019);
- Investigate and fund processes that lead to less contamination (City of Mount Gambier, 2019);
- Prioritise funding for companies that sort, process and remanufacture (Northern Adelaide Waste Management Authority, 2019);
- Partnering of local and state government on education (Copper Coast Council, 2019); and
- Mandating all new buildings to have waste and recycling receptacles (Adelaide Hills Council, 2019).

Finally, a strategic approach to co-locating waste and recycling facilities with remanufacturers (City of Holdfast Bay, 2019) at a regional and local level would reduce transport costs associated with processing (Copper Coast Council, 2019).

2.7.4 Remanufacture

Sustainable procurement to create local markets, as a standard, for all levels of government was highly supported (City of Adelaide, 2019; City of Holdfast Bay, 2019; City of Marion, 2019; City of Onkaparinga, 2019; Limestone Coast Local Government Association, 2019; City of Norwood Payneham & St Peters, 2019; Wattle Range Council, 2019; Adelaide Hills Council, 2019). It was pointed out that there is currently no quota for procurement of recycled content for

councils (Wattle Range Council, 2019)[12]. Also, that recycled materials should have higher value than virgin materials (City of Norwood Payneham & St Peters, 2019), but that it was difficult for some recyclates, e.g. sand, to be cost competitive with virgin materials (Visy Industries Australia Pty Ltd, 2019). Submitters suggested that appropriate sustainable procurement targets should be at least 30% (Waste Management & Resource Recovery Association Australia, 2019; National Waste and Recycling Industry Council, 2019).

A regulatory setting for resource efficiency was favoured (Fleurieu Regional Waste Authority, 2019), with government procurement mandated to include recycled content (City of Adelaide, 2019; East Waste, 2019; Northern Adelaide Waste Management Authority, 2019). However, a mix of voluntary and legislative tools is likely to gain wider acceptance from industry (KESAB, 2019).

Economic settings included better support for businesses that make products from recyclates (City of Holdfast Bay, 2019; City of Mount Gambier, 2019); including that such businesses be prioritised for government funding (City of Port Adelaide Enfield, 2019). Research and development (City of Holdfast Bay, 2019) and demonstration programs (Copper Coast Council, 2019) would also benefit from further strategic funding.

Dovetailing with state strategic investment in remanufacture are the targets for government procurement as set out in the National Waste Policy Action Plan 2019:

> We need to close the loop on recycling. Without demand for products made from recycled material, they end up in landfill. Sustainable procurement by governments, businesses and individuals is needed to make the recycling sector thrive.
>
> (Department of Agriculture, Water and the Environment, 2019b, p. 18)

An investment in market analysis of consumers' needs will also provide opportunities to inform design of collection, sorting and reprocessing (Fleurieu Regional Waste Authority, 2019).

2.7.5 Other

2.7.5.1 Energy from Waste

Energy from Waste (EfW) is an important component of an integrated waste management system (Fleurieu Regional Waste Authority, 2019), but it needs to have further clarity over its role (Fleurieu Regional Waste Authority, 2019; Copper Coast Council, 2019; Adelaide Hills Council, 2019). It was suggested that research and development into low volume EfW technologies (Philp, 2019), in the context of the waste hierarchy, take place, but acknowledged that EfW needs a social licence to operate (Fleurieu Regional Waste Authority, 2019). Obtaining the social licence to operate may be made more difficult because, currently, EfW attracts the Solid Waste Levy and is therefore on the same footing in the waste hierarchy as landfill (Waste Management & Resource Recovery Association Australia, 2019):

[12] Although there are no quotas, a conglomerate of nine SA councils (Adelaide Hills Council, City of Burnside, City of Charles Sturt, Mt Barker District Council, Rural City of Murray Bridge, City of Norwood Payneham & St Peter, City of Onkaparinga, City of Port Adelaide Enfield and City of Prospect) have signed a Memorandum of Understanding to prioritise procurement of products made from recycled materials (Local Government Association SA, 2019b).

> The primary function of thermal EfW activities utilising mixed, unprocessed or minimally processed waste feedstock is for the disposal of the waste. Therefore, the waste levy as legislated, applies to the thermal destruction of waste whether-or not any energy is recovered.
>
> (Environment Protection Authority, 2019c, p. 6)

EfW needs to be reviewed in the context of any expansion of container deposit legislation and food and garden organics (Fleurieu Regional Waste Authority, 2019). GISA argued that EfW should not compete for feedstock that can be recirculated through the market (Green Industries SA, 2019). NAWMA further argued that the SWL should not be fully applied to EfW technologies that do not compete for feedstock; i.e. only use feedstock that is destined for landfill (Northern Adelaide Waste Management Authority, 2019):

> The Waste Strategy supports the efficient recovery of energy from residual waste and niche waste streams through best available technologies that suit local conditions, and can deliver environmental benefits and economic opportunities. The Waste Strategy iterates that EfW should support and not disregard any viable options for higher order beneficial uses of waste and have regard to impacts to businesses and supply chains that compete for the same feedstock materials.
>
> (Environment Protection Authority, 2019c, p. 2)

During the Committee's visit to the South East (4-5 November 2019) the members were able to observe an example of the circular economy in action firsthand. Assisted by a Green Industries Fund grant, Bio Gro provides its waste wood residue to Hollafresh at no cost for use as a heating fuel. The process of pyrolysis produces energy to heat the Hollafresh glasshouses with the residual product, biochar, taken away by Bio Gro to be used as a soil additive.

Figure 6. Committee visiting Hollafresh in the south-east, (left to right) Hon. Mark Parnell MLC, Hon. Tung Ngo MLC, Michael Brown MP, Adrian Pederick MP, Nick McBride MP and Ian Lines, Owner, Hollafresh and Hollafresh basil.

Figure 7. Committee at Bio Gro, Mt Gambier, (left to right) Hon. Mark Parnell MLC, Hon. Tung Ngo MLC, Michael Brown MP, Stephen Van Schaik, Managing Director, Bio Gro, David Ford Chief Executive Officer, Bio Gro, Adrian Pederick MP, Nick McBride MP and Emma Daly, People, Culture and Quality, Bio Gro

Small scale EfW was a topic of some interest to regional communities, with a suggestion that waste destined for landfill could be diverted to regional councils for them to produce diesel.

> What I am actually suggesting is pyrolysis but at a batch level so that it can be turned on and turned off, it doesn't matter. Its only purpose is to reduce the landfill, basically, and a by-product is diesel. The model is a bit different in the fact that we are trying to say that it's something that can work in a very small council and stay localised, and then, in a city council, you can scale it up and have different versions of waste to energy as well.
>
> B. Scott, Director, Transmutation (Halton & Scott, 2019, p. 96)

Figure 8. Brad Scott, Director, Transmutation, speaking to the Committee at Wattle Range Council, Millicent, (Committee left to right) Hon. Mark Parnell MLC, Nick McBride MP, Adrian Pederick MP, Michael Brown MP and Hon. Tung Ngo MLC.

2.7.5.3 Holistic approach

Many of the solutions suggested here were reiterated earlier in the report, with an acknowledgement that there are no 'silver bullet' solutions (East Waste, 2019) and that approaches need to be fit-for-purpose (Wattle Range Council, 2019). It also seems to be the case that effective recycling depends upon good legislation, industry systems and technology, business investment and community participation (KESAB, 2019), and therefore only addressing one part of the whole will fail to bring along important stakeholders. Continued education and engagement with councils (City of Tea Tree Gully, 2019) (and increasing the *Which Bin?* campaign (City of Norwood Payneham & St Peters, 2019)) and continued engagement to move towards the circular economy (Green Industries SA, 2019) is required.

Important components of an holistic approach included:

- Setting long term direction for secure investment (Copper Coast Council, 2019);
- Robust reporting requirements (City of Marion, 2019);
- Reliable data; such as through bin audits (Limestone Coast Local Government Association, 2019); and
- Transparent pathways from source to disposal (Limestone Coast Local Government Association, 2019).

2.8 Term of Reference 6: Any other matter

2.8.1 Litter and illegal dumping

KESAB pointed out that, although the Container Deposit Scheme in SA has produced excellent results in terms of litter reduction, bottles and cans are being replaced as litter by 'lightweight packaging and commercial plastics' (KESAB, 2019, p. 4). Funding from the EPA to support implementation of the *Local Nuisance and Litter Control Act* 2017 was redirected to other agency priorities in 2018 (KESAB, 2019), however litter and illegal dumping continues to be a challenge, particularly to regional councils:

> In terms of the waste disposal, most of it tends to occur quite close to Port Augusta. People don't generally need to travel too far out of town before they find a suitable area in which to dispose of their waste. We have some evidence that it's not just residents who are doing things incorrectly—some of it is businesses as well. Some of the contributing factors are obviously the cost, but in some of the areas, if something looks like a rubbish dump, then it will be treated like a rubbish dump.
>
> … Illegal dumping costs us double, basically. We have to send people out to collect it … All of that has to come out of rate revenue.
>
> J. Banks, CEO, Port Augusta City Council (Banks, et al., 2019, p. 45&48)

> Tyres are a challenge for us. We get over 2,000 tyres per annum, and we think about 30 per cent on top of that end up being illegally dumped. It is interesting: Whyalla is a very discrete city, in that as a city we manage essentially the city. We don't have a large outlying area, but there is ready opportunity for people to go for a very short drive and dump it in our pristine environment.
>
> People are even being worse than that: they are not even going for the drive. We have a number of laneways through our city. We have a large number of laneways, probably more than some other cities, and at the minute the city is paying a couple of enterprises about $200,000

> a year on a weekly basis to patrol our laneways and remove waste. We talked about the hidden costs of business that people don't always understand. That is a $200,000 impost that if people certainly did the right thing this council would not have to fund, or the ratepayers wouldn't have to fund.
>
> C. Cowley, CEO, Corporation of the City of Whyalla (Banks, et al., 2019, p. 56)

2.8.2 Individual submitters

Fourteen individuals provided written submissions to this inquiry. Their concerns and issues mirrored those of industry and councils as discussed above. Of greatest concern to individual submitters was the importance of education and behaviour change (seven submitters (Ang, 2019; Boxall, 2019; Cameron, 2019; Campbell, 2019; HM, 2019; Mathwin, 2019; Preston, 2019)); to avoid and reduce (Ang, 2019; Drummond, 2019; HM, 2019); and recycle and reuse (Mathwin, 2019; Sabine, 2019). Other issues included the opportunities that CNS has highlighted; for example, the culture of SA's population which is already educated to recycle (Birrell, 2019; Little, 2019; Mathwin, 2019) and the leadership that SA has shown in addressing problematic plastic waste, such as single-use plastics (Cameron, 2019; Drummond, 2019). Economic and legislative levers were suggested to promote positive recycling behaviours and discourage negative behaviours (Ang, 2019; Drummond, 2019; Nattrass, 2019).

The life cycle of products was also of concern, with submitters wanting to ensure that products that were disposed to recycling were remanufactured into products (Ang, 2019; Wetherby, 2019). This had the logical extension of government procurement practices to help create markets for recycled products (Drummond, 2019; Philp, 2019; Sabine, 2019).

Finally, submitters raised concerns about confusing recycling labels on products and packaging:

> There is a bewildering array of packaging & it is very difficult for people like myself to determine the correct way of disposing of items. In some instances, the method of disposal appears counterintuitive to the labelling …
>
> … Some trays are labelled compostable or biodegradable but are not suitable for disposal in the Green compost bin.
>
> (Boxall, 2019)

Confusion in terminology, such as 'biodegradable' and 'degradable', used in products and packaging was also raised by industry:

> There is a lot of confusion in the marketplace on what is compostable and what isn't. We only recommend that that is certified to the Australian standards with the logo on it.
>
> … 'It's biodegradable.' That's the most terrible word that we can use in our industry. It's recyclable or it's compostable.
>
> … I think the Australian Packaging Covenant [Organisation] is doing some fantastic work to get some clarity on that. They are working with Hungry Jack's and McDonald's and all those to make sure that, when they bring the products online in the next one, two or three years, they are all compostable and they meet a standard, because at the moment that is really, really confusing the public.
>
> P. Wadewitz, Chair, National and SA Branch, AORA (Jeffries, et al., 2020, p. 112)

2.8.3 Site visits

The Committee made a number of site visits (listed in Appendix A) during the inquiry to listen to industry experts and witness the opportunities and challenges faced by the waste management and resource recovery industry first-hand.

Issues of concern to industry included:

- Availability of, and competition for, feedstock; and
- Lack of local markets for recovered materials.

In particular, the Committee heard that smaller recyclers (MRFs) struggled to find markets that would take their products, which led to the potential for stockpiling. The Committee also heard that organics waste was not always being directed to the best possible use; sometimes being used to cap landfill instead of being made available for re-processing into an agricultural product.

The Committee did, however, hear of many success stories from industry with interesting partnerships between business, such as SUEZ-ResourceCo and Adelaide Brighton Cement, as well as Bio Gro and Hollafresh.

Figure 9. (Left to right) Hon. Mark Parnell MLC, Adrian Pederick MP, Nick McBride MP, Michael Brown MP and Hon. Tung Ngo MLC at SUEZ-ResourceCo, Wingfield.

Figure 10. SUEZ-ResourceCo, Wingfield, sample of waste-derived, low calorific fuel destined for Adelaide Brighton Cement

Figure 11. Sorting and processing at Visy, Wingfield

Figure 12. Committee at EastWaste, Ottoway, (left to right) Hon. Mark Parnell MLC, Nick McBride MP, Michael Brown MP, Hon. Tung Ngo MLC and Adrian Pederick MP

Figure 13. Recycling bitumen at Fulton Hogan, Dry Creek, (left to right) Nick McBride MP, Adrian Pederick MP, Michael Thompson, Fulton Hogan and Tim Gradwell, Fulton Hogan

Figure 14. E-waste at Electronic Recycling Australia, Underdale, (left to right) Nick McBride MP, Hon. Mark Parnell MLC, Hon. Tung Ngo MLC, Michael Brown MP, Adrian Pederick MP and Andrew Wallace, Commercial Manager, Electronic Recycling Australia

Figure 15. Committee at Peats Soils, Whyalla, (left to right) Peter Wadewitz, CEO, Peats Soils, Nick McBride MP, Adrian Pederick MP, Hon. Tung Ngo MLC, Hons. John Dawkins MLC and (left to right) Hon. John Dawkins MLC, Nick McBride MP, Peter Wadewitz, CEO, Peats Soils, Hon. Tung Ngo MLC, Adrian Pederick MP

Figure 16. Contamination in the organics waste at Bio Gro – nails, knives and various other bits of metal are shown here

Figure 17. Mt Gambier Waste Transfer Station and Aaron Izzard, Environmental Sustainability Officer, City of Mt Gambier

Figure 18. Re-use market, Mt Gambier, (left to right) Adrian Pederick MP and Michael Brown MP and Hon. Tung Ngo MLC

Figure 19. Mt Gambier Town Hall (left to right) Adrian Pederick MP, Michael Brown MP, Nick McBride MP, Hon. Mark Parnell MP and Hon. Tung Ngo MP

3 CONCLUSIONS

Clear messages were received by the Committee from the community about the opportunities and challenges and issues associated with waste management and resource recovery in SA. Submissions in relation to waste management and resource recovery were broad ranging; identifying global, national and local challenges and proposing solutions to those challenges. The Committee also heard that there was a great deal of pride in what SA has already achieved in the waste management and resource recovery industry, particularly the SA Container Deposit Scheme (CDS) and banning of single-use plastic bags.

3.1 Term of Reference 1: How South Australia has responded to China's recent restriction on its importation of recyclable material

The Committee concluded that the China National Sword Policy did not cause a crisis in SA (most submitters did not mention the word crisis) and that it more likely exacerbated issues that existed, and still exist, prior to the decision of the Chinese government to ban certain types of waste.

> The recent implementation of the China National Sword Policy … has shown that Australia still has a long way to go to achieve some of the waste management practices that are truly sustainable. The China sword policy has also highlighted some of the vulnerabilities we have within the recycling system which needs to be addressed.
>
> (Local Government Association SA, 2019, p. 24)

The Committee did recognise, however, that the Chinese government ban on waste importation because of high contamination rates impacted upon certain business models of collection and storage of recyclables. Following the collapse of SKM Recycling in 2019, thousands of tonnes of SA recyclables are unable to be salvaged and will be sent to landfill (Australian Broadcasting Corporation, 2020).

It was clear to the Committee that, in SA, any changes to policy/ legislation or industry practices need to be considered in the context of a whole of industry framework. For example, changes to packaging laws or implementing targets for recycled content in products may have unintended consequences if markets are not developed to better uptake recycled or compostable products or consumers are not educated to dispose of waste correctly.

The Committee heard that a circular economy was a desirable way in which to decouple SA's reliance upon export markets, particularly regarding metal waste which is still reliant upon an overseas market. Shifting to a circular economy, although desirable, may involve significant changes to industry legislation and practices and consumer behaviour. The Committee concluded the circular economy model would be a worthwhile objective to achieve for SA in the long term.

The Committee also considered the Commonwealth government's agreement to ban the export of waste is an important progression in Australia's leadership and is consistent with SA's current policies regarding the types of waste that SA exports to overseas markets. The

Committee concluded that the ban provides further impetus for SA to decouple from external markets by shifting towards a circular economy model.

The state government recently confirmed its commitment as the nation's leader to the waste management and resource recovery industry:

> … focus on developing remanufacturing of recycled materials, growing our organics waste industry and educating our community about how it can contribute to our state's leadership in waste management and resource recovery.
>
> (His Excellency the Governor, H. Van Le, 2020)

> I think that South Australia is a leader. I know that we were frowned upon for a very long time for being absolute idiots for going down that path, and I am so grateful that the current government has continued to do that ...
>
> E. Wake (Banks, et al., 2019, p. 65)

In line with maintaining a leadership position for waste management and resource recovery, the following recommendations have been made by the Committee:

Recommendation 1:

That state government, in collaboration with local government and other stakeholders:

a) prioritises and develops a long-term strategy and action plan to shift SA towards a suitable waste management and resource recovery model based on a circular economy (including legislation/ policy and economic incentives to support such an economy);
b) articulates and evaluates the following outcomes within the strategy and action plan: (1) clarity, consistency and certainty; (2) transparency and accountability; (3) leadership; (4) collaboration and partnerships; and (5) awareness raising, education and behaviour change. The objective of the strategy should be to achieve zero litter and zero waste to landfill, consistent with the Waste Strategy 2020-25;
c) ensures that future waste management and resource recovery strategies and action plans are aligned with the Commonwealth government's direction, however, this should not stop South Australia being a national leader in waste management and resource recovery; and
d) reports annually to Parliament on its progress towards the circular economy and achieving zero litter and zero waste to landfill.

Recommendation 2:

That state government continues to participate in the Meeting of Environment Ministers:

a) to help drive outcomes at a national level that are consistent with SA's shift towards a circular economy, emphasising the use wherever possible of consistent legislative and policy language across jurisdictions; and
b) drives, at a national level, the consistent use of Australian standards across all jurisdictions on recyclable and compostable products and packaging and discouraging the use of terminologies that do not meet either of these two standards (especially from imported goods).

3.2 Term of Reference 2: Examining current policy and legislative frameworks (and potential for desirable reforms) that govern resource recovery, in the context of China's National Sword Policy

The Committee commended the state government's leadership to ban some single use plastics in SA in accordance with the *Single-use and Other Plastic Products (Waste Avoidance) Bill 2019*. The Committee recognised this legislation is consistent with removing a problematic waste stream, decoupling the state from external markets, as well as being in accordance with the state's waste hierarchy.

The Committee was keen to maintain an equitable financial and legislative/ policy environment in SA. It felt one of the best ways to achieve this would be to ensure that industry best practices were trialled, developed and shared.

Recommendation 3:

That state government, in collaboration with local government and other stakeholders:

a) conducts a review into state policy and legislation, with the aim of ensuring that there is flexibility and incentives to innovate, conduct trials and share data and outcomes from such trials; e.g. different approaches to collecting glass and trialling collection frequencies; improving organics (FOGO) collection services to institutions such as schools and hospitals; and provision of more collecting stations for soft plastics;
b) develops and maintains a financial and legislative/ policy environment in SA that facilitates open access public and private research and development into best practices for waste management and resource recovery; and
c) considers further economic levers to incentivise, and legislative levers to mandate, greater use of recycled content in products and packaging.

3.3 Term of Reference 3: Whether funding from the state government (including Green Industries SA funding) has been enough to support South Australian businesses and local councils affected by China's National Sword Policy

The Committee heard of examples of good initiatives that had been funded through Green Industries SA, such as improved glass fines recovery at Northern Area Waste Management Authority (NAWMA). Also, that 'in 2018-19, [approximately] 91% of revenue received in the Green Industry Fund was reinvested in GISA programs and climate change initiatives' (Green Industries SA, 2019d).

However, the Committee also heard the experiences of smaller, regional recyclers who had been struggling with the challenges of the sudden reduction in export markets and decreased prices for plastics.

The Committee concluded that better harmonisation of waste levies across Australia would help deter the transport of waste to landfills across jurisdictions (Senate Standing Committees on Environment and Communications, 2018).

The Committee concluded that greater collaboration and partnerships were required at all levels of government, as well as inter-agency, across jurisdictions and with industry and the community. The Committee recognised that the challenges faced by the waste management and resource recovery industry within regions are expensive, complex and are unlikely to be solved by any one agency or council.

Recommendation 4:

That the state government, in collaboration with local government and other stakeholders:

a) Undertakes an objective evaluation of the allocation of grants, loans and other types of support to councils and industry, identifying gaps and publishing the results;
b) Reviews and identifies challenges to smaller MRFs (particularly regionally-located MRFs) and prioritises funding towards assisting MRFs in the short-term, such as levy discounts, assistance to access grants or cash injections, until longer-term strategies, such as better risk-sharing contracts with councils, are able to be developed and implemented to help all of industry;
c) in the interests of transparency, develops and implements a long term (5-6 year) strategy for expenditure of the SWL that is consistent with shifting SA towards a circular economy; and
d) considers how best to reduce the risk of waste from SA going to landfill in other states because of inconsistencies in the price of solid waste levies across jurisdictions.

Recommendation 5:

That state government, in collaboration with local government and stakeholders, coordinates and reports on a strategic investigation into the challenges and opportunities for regional areas to best undertake waste management and resource recovery services.

3.4 Term of Reference 4: Identifying short- and long-term opportunities and solutions in response to China's restriction on the importation of recyclable material

The Committee concluded there was not enough information about the life cycle of products and packaging, and that the community still required assurance that products that were placed in the yellow-lid bins were being recycled.

The Committee concluded that there were measures that would allow better transparency and accountability that could be undertaken at a state and local level that would also engender community trust in the waste management and resource recovery industry:

- Identifying and addressing knowledge gaps; e.g. tracking of products through their life cycle and market analysis;
- Long term commitment to and investment in collecting data to help fill these knowledge gaps; and
- Sharing knowledge with stakeholders and community.

The Committee acknowledged that data collection and analysis across the state and other jurisdictions would be supported using consistent terminology in legislation and policy. Accurate and comparative information about waste management and resource recovery activities across jurisdictions is hindered because of lack of alignment in definitions and methods of data collection and analysis (Senate Standing Committees on Environment and Communications, 2018).

The Committee also acknowledged that attempts by scrap metal recyclers to remain competitive are being challenged by domestic legislation, policies and freight costs.

Recommendation 6:

That state government, in collaboration with local government and other stakeholders, reviews and develops a strategy and action plan to identify data and knowledge gaps in the life cycle of products and packaging, and addresses ways in which knowledge may be shared with industry and the community (particularly local and national market analyses).

Recommendation 7:

That state government, in collaboration with stakeholders:

a) investigates options for legislative and policy flexibility, and economic incentives, to assist scrap metal recyclers to remain globally competitive and continue best practice resource recovery (including options to reduce or eliminate the cash economy environment); and
b) ensures that the EPA remains well-resourced to police participants in the scrap metal industry who are not compliant.

3.5 Term of Reference 5: Examining strategies more broadly to reduce waste generation and better managing commercial and industrial, municipal, and construction and demolition waste (and costs thereof)

The Committee heard that packaging remains challenging to industry as well as consumers. Consistent with a circular economy model, all packaging should ideally be a) minimal; and b) able to be remanufactured into new packaging or other products. Implementing changes to packaging would require collaboration with the Commonwealth and across all jurisdictions, although devising some changes could be undertaken at a state and local level. Changes to plastic products – increasing the recycled content of plastic products or increasing the recyclability – should be able to be implemented at a state and local level.

3.5.1 Product stewardship

The Committee noted that product stewardship is likely to be best driven by the Commonwealth, but that the state Environment Minister can influence the priorities and governance of product stewardship schemes through representation on the Meeting of the Environment Ministers.

The Committee, however, considered there may be opportunities available to the state to reduce waste at the source; e.g. investing in research and development for recyclable, simple and/ or efficient packaging.

Recommendation 8:

That state government, in collaboration with local government and other stakeholders, investigates and considers implementing changes to packaging and products legislation/ policy that could be undertaken at a state and local level.

3.5.2 Container Deposit Schemes

The Committee heard that the CDS in SA is currently under review by the EPA, with a scoping paper (Improving SA's Recycling Makes Cents) released for consultation in 2019:

> The scoping paper outlined 16 questions for the community to consider and submissions were received from a range of organisations from different sectors, representing a wide variety of viewpoints. A Stakeholder Reference Group was established and in May 2019, the EPA Board CDS Review Summit was held, focusing around the scheme's governance arrangements. The review is currently underway and a discussion paper is being developed for release in 2020.
>
> Container deposit scheme – a South Australian environmental success story (Environment Protection Authority, 2019a, p. 3)

The Committee commended the government for undertaking a review of the scheme and is awaiting the final report.

3.5.3 Improved sorting and processing

The Committee heard that education and behaviour change is a critical component of any changes going forward. Contamination of recycling would appear to be problematic from

everyone's point of view and the reduction of contamination is the most important of the incremental changes that could occur.

The Committee concluded that efforts to reduce contamination would most likely benefit from a multi-pronged solution, including continued investment in infrastructure to improve sorting and processing of received waste, education to divert food and garden organics from landfill and trialling of and reporting on different methods of diverting glass from co-mingled recycling.

The Committee also considered that it was important to consider the practices operating in the Houses of the SA Parliament.

Recommendation 9:

That state government, in collaboration with local government and stakeholders:

a) implements a strategy to continue to educate the community on the importance of diverting food and garden organics from landfill;
b) considers and implements a strategy to increase the frequency of organic waste collection and raise awareness amongst the community to reduce the frequency of collection of waste destined for landfill; and
c) consults with all relevant stakeholders to address the issue of current medium-high density dwellings that do not have separate organics (FOGO) waste facilities and ensures all new medium-high density residential developments will enable residents to separate FOGO and recyclables from landfill waste.

Recommendation 10:

Parliament, as a workplace for hundreds, should investigate and adopt best practice in recycling and waste minimisation. The Joint Parliamentary Services Committee should conduct a green audit of Parliament's waste management practices, in the context of the waste hierarchy and the circular economy, including FOGO. The Joint Parliamentary Services Committee should report annually to Parliament on its programs and achievements in waste management.

Recommendation 11:

That state government, in collaboration with local government and stakeholders, devises a cost-effective strategy and implementation plan to divert as much glass as possible from co-mingled recycling.

3.5.4 Re-manufacturing materials locally into desirable products (including energy production) and procurement policies and practices that support the use of re-manufactured products

The Committee concluded that there are likely to be benefits to the South Australian economy if all state agencies were better aligned with best practice guidelines for social and environmental procurement. Even further, that the addition of targets and outcomes for social and environmental procurement be developed and implemented across all agencies to provide consistency in procurement decision making.

Recommendation 12:

That state and local government help create certainty in markets for recyclable and remanufactured products by incorporating circular economy principles into procurement policies and practices by adopting best practice principles and guidelines along with targets (where possible) that meet social, environmental and economic outcomes.

3.5.5 Other

3.5.5.1 Energy from Waste

The Committee concluded that small scale Energy from Waste (EfW) technology should be investigated for regional implementation to divert waste from landfill. However, the Committee further concluded that EfW should not compete with recyclers for feedstock.

Recommendation 13:

That state government, in collaboration with regional local government and stakeholders:

a) investigates the potential for small-scale Energy from Waste (EfW) technology that may be sustainably and cost-effectively managed at a regional level; and
b) develops and applies criteria for the 'most beneficial use' of feedstock (especially organics) in implementing strategies for EfW technology using appropriate incentives to encourage best use of feedstock.

3.5.5.2 Holistic Approach

The Committee found that an holistic approach to waste reform is needed in SA and that a new model based on the circular economy is supported by the majority of submitters to this inquiry. The use of economic and policy/ legislative tools should be aligned (preferably across jurisdictions) to incentivise participants in the circular economy and discourage industries engaging in a more linear-like economy.

The Committee also heard that an holistic approach to waste reform should consist of an across government approach, so that siloed decisions are not made by single agencies, but are made for the benefit of more than one sector. For example, an improved food and garden organics recovery sector will benefit the environment and agricultural sectors because organics add carbon to the soil:

> … a consistent national approach to things like addressing salinity in soils, water retention, soil improvement and drought mitigation should be nationally addressed programs and should be used as a regular cyclical approach to improve the quality of soil so that when the conditions are right the quality and the productivity of agriculture in Australia is significantly higher than it currently is.
>
> P. Olah, National Executive Officer, AORA (Jeffries, et al., 2020, p. 115)

> In the old days, when we had 4.65 per cent carbon, we could really store water when the rains came. Now we are down to half a per cent carbon or 1 per cent carbon, and we've got no ability to store that water. Again, it's about building that carbon up.
>
> P. Wadewitz, Chair, National and SA Branch, AORA (Jeffries, et al., 2020, p. 115)

Recommendation 14:

That state government, in collaboration with local government and stakeholders:

a) undertakes a review to ensure that policy/ legislative barriers to locally produced organics recovery are minimised; and
b) collaborates across agencies and jurisdictions to investigate economic and policy or legislative tools to encourage the use of recovered organics in improving environmental and/or agricultural productivity.

3.6 Term of Reference 6: Any other matter

3.6.2 Litter and illegal dumping

The Committee heard that litter and illegal dumping continues to be a challenge, particularly for regional councils. The Committee felt it is important that regional councils be assisted by state government to address the challenges of illegal dumping.

Recommendation 15:

That state government, in collaboration with local government and stakeholders, investigates the current suite of economic and policy/ legislative tools that may help reduce illegal dumping activity and considers whether current tools are adequate for regional areas.

Recommendation 16:

That state government, in collaboration with local government and other stakeholders, considers and reports on the current awareness of local communities in reducing waste and adopting a circular economy and reports on new (locally appropriate) strategies to increase education and awareness.

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ABBREVIATIONS AND DEFINITIONS

AORA	Australian Organics Recycling Association Ltd
APC[O]	Australian Packaging Covenant [Organisation]
CDL	Container deposit legislation
CDS	Container deposit scheme
CNS	China National Sword Policy
Committee	Environment, Resources and Development Committee
COAG	Council of Australian Governments
DEW	Department for Environment and Water
DPTI	Department of Planning, Transport and Infrastructure
EfW	Energy from waste
EPA	Environment Protection Authority SA
FOGO	Food organics and garden organics
FTEs	Full-time employees or equivalent
GISA	Green Industries SA
LGA SA	Local Government Association SA
MRF(s)	Materials Recovery Facility(ies)
PSS(s)	Product Stewardship Scheme(s)
SA	South Australia(n)
SMM	Sims Metal Management
SWL	Solid Waste Levy

APPENDIX A: SITE VISITS

24 June 2019 – northern and north-western metropolitan areas

Northern Adelaide Waste Management Authority (NAWMA), Edinburgh Park

ResourceCo – SUEZ, Wingfield

Visy, Wingfield

Fulton Hogan, Dry Creek

East Waste, Ottoway

Statewide Recycling, Ottoway

Electronic Recycling Australia, Underdale

20 September 2019 – Whyalla

GFG Alliance Whyalla Steel Works

Peats Soils

Whyalla Council Chambers

- Port Augusta City Council
- Port Pirie Regional Council
- City of Whyalla
- Spencer Gulf Cities
- Members of the public

4-5 November 2019 – south-east

Bio Gro Australia, Mount Gambier

Mount Gambier City Hall

- City of Mount Gambier
- Members of the public

Mount Gambier Transfer Station and Reuse Market, Mount Gambier

Green Triangle Recyclers, Mount Gambier

Hollafresh, Tantanoola

Millicent Resource Recovery Centre

Millicent Council Chambers

- Transmutation
- Limestone Coast LGA and Wattle Range Council

Onefortyone Mill, Mount Gambier

11 March 2020 – Wingfield

Sims Metal Management

APPENDIX B: LIST OF WITNESSES

1 July 2019 – Kingston Room, Old Parliament House, Adelaide

1. Mr Kevin McGuiness, Presiding Member. Green Industries SA Board
2. Mr Vaughan Levitzke, Chief Executive, Green Industries SA
3. Mr Josh Wheeler, Manager, Government Business, Green Industries SA
4. Mr Tony Circelli, Chief Executive, Environment Protection Authority
5. Dr Kathryn Bellette, Director, Strategy and Assessment, Environment Protection Authority
6. Ms Tiana Nairn, Waste Reform Policy Program, Environment Protection Authority

9 September 2019 – Kingston Room, Old Parliament House, Adelaide

7. Mr Sam Telfer, President, Local Government Association
8. Mr Stephen Smith, Director Policy, Local Government Association
9. Ms Emily Heywood-Smith, Senior Policy Officer, Local Government Association

20 September 2019 – City of Whyalla Council Chambers, Whyalla

10. Mr Nic Clift, Vice President, Australian Operations, Nyrstar
11. Ms Anita Crisp, Executive Officer, Spencer Gulf Cities
12. Mr John Banks, Chief Executive Officer, Port Augusta City Council
13. Mr Leon Stephens, Mayor, Port Pirie Regional Council and Chair, Upper Spencer Gulf Cities
14. Mr Grant McKenzie, Director, Development and Regulation, Port Pirie Regional Council
15. Mr Chris Cowley, Chief Executive Officer, Corporation of the City of Whyalla
16. Ms Emma Wake

4 November 2019 – City Hall, Mount Gambier

17. Ms Lynette Martin, OAM, Mayor, City of Mount Gambier
18. Mr Nick Searle, General Manager City Infrastructure, City of Mount Gambier
19. Mr Aaron Izzard, Environment Sustainability Officer, City of Mount Gambier
20. Dr Barney McCusker
21. Mr Paul Jenner
22. Ms Heather Heggie
23. Mr Peter Barrows, Top Spot Auto Dismantlers

5 November 2019 – Wattle Range Council Chambers, Millicent

24. Mr Brad Scott, Director, Transmutation Pty Ltd
25. Mr Peter Halton, Chair, Limestone Coast Local Government Association Regional Waste Committee and Director, Engineering Services, Wattle Range Council

2 March 2020 – Kingston Room, Old Parliament House, Adelaide

26. Mr Peter Wadewitz, National and SA Branch Chair, Australian Organics Recycling Association Limited
27. Mr Peter Olah, National Executive Officer, Australian Organics Recycling Association Limited

28. Mr Lachlan Jeffries, Executive Director, Jeffries Group

23 March 2020 – Old Chamber, Old Parliament House, Adelaide

29. Mr Adam Faulkner, National Vice President, Waste Management and Resource Recovery Association Australia (via teleconferencing)
30. Mr Geoff Webster, Vice President, Waste Management and Resource Recovery Association, SA Branch (via teleconferencing)
31. Mr John Philips OAM, Executive Director, KESAB Environmental Solutions (via teleconferencing)
32. Ms Ros DeGaris, Chair, KESAB Environmental Solutions (via teleconferencing)
33. Ms Grace Barila, Environmental Services Manager, KESAB Environmental Solutions (via teleconferencing)
34. Mr Laurie Kozlovic, Chief Strategic Development and Innovation Officer, Veolia Australia and New Zealand (via teleconferencing)

6 April 2020 – Kingston Room, Old Parliament House, Adelaide

35. Mr Peter Nattrass (via videoconferencing)

27 April 2020 – Kingston Room, Old Parliament House, Adelaide

36. Mr Brian Smedley, Chief Executive, South Australian Wine Industry Association (via videoconferencing)
37. Mr Mark Gishen, Project Manager, Environmental and Technical, South Australian Wine Industry Association (via videoconferencing)

11 May 2020 – Kingston Room, Old Parliament House, Adelaide

38. Mr Eddie Stubing, Owner, Adelaide Plains Recycling
39. Mr Ben Stubing, Managing Director, Adelaide Plains Recycling

APPENDIX C: LIST OF SUBMITTERS

In order of receipt:

No.	Submitter	No.	Submitter
1	F. Birrell	24	HM
2	C. Wetherby	25	WMRR
3	M. Drummond	26	KESAB
4	District Council of Streaky Bay	27	E. Mathwin
5	C. Ang	28	Roxby Downs Council
6	G. Philp	29	J. Preston
7	J. Sabine	30	M. Little
8	FRWA	31	City of Tea Tree Gully
9	Spencer Gulf Cities	32	Copper Coast Council
10	P. Nattrass	33	Jeffries Group
11	City of Norwood, Payneham & St Peters	34	NAWMA
12	EastWaste	35	City of Marion
13	S. Boxall	36	Australian Grape & Wine
14	APCO	37	Wattle Range Council
15	Alexandrina Council	38	NWRIC
16	Food SA	39	Limestone Coast LGA
17	City of Adelaide	40	City of Holdfast Bay
18	P. Cameron	41	City of Port Adelaide Enfield
19	City of Onkaparinga	42	Visy
20	EDO	43	LGA
21	AHRWMA	44	Adelaide Hills Council
22	SRWRA	45	SAWIA
23	City of Mount Gambier	46	WRISA

No.	Submitter	No.	Submitter
47	Veolia	51	AORA
48	GISA	52	Sustaining Endeavour
49	EPA	53	N. Mitchell
50	A. Campbell	54	Hollafresh