



Government of South Australia

Green Industries SA

Green Industries SA

Business Plan

2016-17

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Foreword

This Business Plan for 2016-17 sets out the programs and initiatives to be undertaken by Green Industries SA under Section 14 of the *Green Industries SA Act 2004*.

It reflects the agency's transition as the South Australian Government has finalised the legislative arrangements for establishing the new agency, Green Industries SA.

Green Industries SA will build on the achievements of Zero Waste SA. It will develop the green economy¹ in response to global and local demand for clean and green produce, reduced emissions to air, water and soil from industry, more efficient use of resources, and the conservation and recovery of scarce resources.

This Business Plan support the primary objectives of the *Green Industries SA Act 2004*:

- To promote waste management practices that, as far as possible, eliminate waste or its consignment to landfill; and
- To promote innovation and business activity in the waste management, resource recovery and green industry sectors, recognising that these areas present a valuable opportunity to contribute to the State's economic growth.

In 2016-17 Green Industries SA will focus on the following key areas:

- Investing in local government waste and resource recovery initiatives through a new grant funding program to support infrastructure development and food waste recycling in 2016-17 with other initiatives to roll out in subsequent years.
- Stimulating economic growth and meeting *South Australia's Waste Strategy 2015-20* objectives through a State-wide industry infrastructure program.
- Improving business' resource efficiency thereby reducing consumption, reducing waste, reducing costs and improving business productivity.
- Encouraging the commercialisation of innovation to help keep South Australia at the forefront of green innovation in the waste, recycling and resource recovery sectors.

¹ A Green Economy is characterised by substantially increased investments in economic sectors that build on and enhance the earth's natural capital or reduce ecological scarcities and environmental risks. These sectors include renewable energy, low-carbon transport, energy-efficient buildings, clean technologies, improved waste management, improved freshwater provision, sustainable agriculture, forestry, and fisheries. (United Nations Environment Program)

- Building capacity and capability in government and industry to support export and overseas opportunities in the recycling and resource recovery sectors aligned with the South Australian Government's prioritised markets.
- Maintaining a strong role in waste sector policy development, advocacy and implementation as set out in *South Australia's Waste Strategy 2015-2020*. Collecting data and measuring progress against targets is critical to this work.
- Completing development of South Australia's first waste infrastructure investment plan for the next 30 years, in response to the *Review of South Australia's Waste Strategy 2011-15*.
- Targeting waste avoidance by increasing awareness and participation in the circular economy and new collaborative systems of consumption and production.
- Developing a Disaster Waste Management Support Plan under the State Emergency Management Plan and guidelines for disaster debris removal and management – Australia's first such plan.

The waste management and resource recovery industry is a major player in the State's economy with an annual turnover of around \$1 billion, employing around 4,800 people in a wide range of jobs.

Through investing more than \$97 million from waste levy funds into the resource recovery sector during the past decade, we have built capacity, improved markets and assisted the development of new products and skills. Funded projects that improve industry competitiveness, and for infrastructure investment, achieve benefit cost ratios of 6.7 and between 1.4 and 11.5 respectively.

In an increasingly globalised environment, increased connectivity – virtual and real – and partnerships remain vital to the success of our work.

Our Board members and agency staff should be acknowledged for their commitment and expertise as we aspire to be world leading in our support for developing a vibrant green economy.



Kevin McGuinness
Presiding Member, Board of Green Industries SA

Transition to Green Industries SA

From 1 July 2015, the Office of Zero Waste SA became known as the Office of Green Industries SA as proclaimed under section 26(b) of the *Public Sector Act 2009*.

During 2016-17, legislation to establish Green Industries SA was finalised. During this transitional period the *Zero Waste SA Act 2004* remained operational. The agency was supported during this time by the Office of Green Industries SA.

The legislation to amend the *Zero Waste SA Act 2004* passed Parliament in November 2016 and was proclaimed into operation effective 1 February 2017. The Act has been renamed the *Green Industries SA Act 2004*.

South Australian Government's policy goals for Green Industries SA

To work with businesses, governments and the environmental sector to:

- Realise the full potential of the 'green economy' and help to keep South Australia at the forefront of green innovation.
- Build on the success of Zero Waste SA, as it has delivered on reduced waste to landfill and increased the State's capacity for recycling.
- Recognise that waste management is a key environmental issue, and presents an opportunity to contribute to the State's economic growth.

To achieve these goals, the organisation will:

- Help businesses to find new overseas markets for their waste management knowledge and skills.
- Help businesses to reduce their costs through more efficient use of raw materials, water and energy.
- Administer grants to local government and industry to support new technologies.
- Be required to report against targets to ensure South Australia continues to reduce waste to landfill and achieve water and energy efficiencies.
- Be established as a statutory corporation governed by its own legislation, with board representatives from State and local government, industry, and the environmental sector.

Future directions

Green Industries SA's future directions are framed against the requirements of the *Green Industries SA Act 2004*, the State Government's economic priorities (see Appendix 2) and key objectives in *South Australia's Waste Strategy 2015-20*. The agency's future directions will further evolve as its transition to Green Industries SA is completed with the finalisation of its establishing legislation.

Unlocking the potential of the circular economy will increasingly influence the direction of the agency's work. That is, a productive local economy which treats all waste materials as potential resources, to be remanufactured, or reused, by other producers, preferably within the State.

Investing in opportunities for economic growth will remain critical as South Australia's economy transforms in response to a decline in the automotive manufacturing and resource sectors. The nexus between infrastructure investment and employment growth will continue to influence investment and planning decisions (as guided by the State's waste infrastructure plan in development). There are opportunities for South Australia to develop infrastructure to process and create new products from some wastes, which are currently sent interstate or overseas as bulk commodities.

Different funding instruments – such as loan schemes and accessing Australian Government grant schemes will become the norm, whether to invest in the commercialisation of innovation or to seed fund new technologies. Growth through Innovation' is one of the State Government's 10 Economic Priorities. There is a need to improve the commercialisation of research in South Australia and better support innovative start-up companies.

Assisting established and new businesses in the waste management and resource recovery sector to build resilience and thrive in South Australia – with an eye on export opportunities.

Local government will continue its central role as a driver of waste management and resource recovery at a strategic and operational level. Support and collaboration with the State Government will ensure facilities are delivered with effective economies of scale and value for money. This is reflected in the State Government's July 2016 Budget announcement where it announced a commitment of \$14.04 million towards local government waste and resource recovery programs over four years.

Helping businesses, industry and government to understand, develop and implement cost saving waste management, resource efficiency and lean production measures will improve their productivity and environmental performance through reducing waste materials, trade waste, energy and water use,

More than ever before expanding and improving the array of data collected, analysed and reported will continue to be a key focus of the agency to assist in reporting on targets and new functions of Green Industries SA.

Business Plan overview: objectives, outcomes and programs

Key Objective 2: To deliver reduced waste to landfill and increase the State's capacity for recycling.

Key Objective 3: To build the State's capability and resilience in the area of disaster waste management.

Key Objective 1: To keep South Australia at the forefront of green innovation in the waste, recycling and resource recovery sectors.

Key Objective 1: To keep South Australia at the forefront of green innovation in the waste, recycling and resource recovery sectors.

Key Objective 2: To deliver reduced waste to landfill and increase the State's capacity for recycling.

Key Objective 3: To build the State's capability and resilience in the area of disaster waste management.

Outcome 1: To reduce waste to landfill through recycling, resource efficiency and waste avoidance

Programs target the community and business to encourage the adoption of behavioural changes through different incentives which will measurably reduce the amount of waste sent to landfill or avoid waste by encouraging alternative forms of consumption.

Outcome 2: To advance innovation in the waste and resource recovery sector

Innovation underpins *South Australia's Waste Strategy 2015-2020* which acknowledges future policy challenges and opportunities requires investment in high quality, targeted research and development if South Australia is to stay at the forefront of green innovation.

Outcome 3: To increase export opportunities for the waste, recycling and resource recovery sector

Waste management in South Australia is well developed and provides a platform for local industry to take advantage of its intellectual property by providing this expertise through export opportunities.

Outcome 4: To develop robust data collection systems to provide an evidence-base for policy and program work

Data and information is collected to measure the State's progress against indicators in *South Australia's Strategic Plan 2011*, *South Australia's Waste Strategy 2015-2020* and relative to other jurisdictions.

Outcome 5: Engaging with key stakeholders to support the implementation of waste strategies and policies

Engaging with a broad range of organisations with an interest in the waste, recycling and resource recovery sector is critical to the agency's work.

The link between programs and outcomes is summarised in the table overleaf.

Program 2016-17	Outcome ²				
	1	2	3	4	5
Industry Program - resource assessments and evaluation	•				•
South Australian Government Trade Waste Initiative – resource productivity assessments and implementation grants	•				•
Household hazardous waste and farm chemical collection program	•				•
Disaster waste management support plan	•				•
Backlight	•				•
Litter data and research and branded litter monitoring	•			•	•
Community litter, education, resources and campaigns	•				•
Wipe Out Waste	•				•
Collaborative consumption and Share N Save	•		•		•
Scrap metal rebate program	•				•
Local Government Program (infrastructure, food waste, household recycling education)	•	•			•
Industry Infrastructure Grants Program	•	•			•
Commercialisation of innovation	•	•	•		•
Identifying export opportunities and promoting international engagement			•		•
Development of post-graduate courses			•		
United Nations Centre for Regional Development			•		•
Waste audits and recycling				•	•
Zero Waste Environment User System				•	•
Waste strategy and policy	•			•	•
Planning for waste infrastructure	•			•	•
Partnerships – LGA and WMAA	•				•

Outcome 1 Reducing waste to landfill through recycling, resource efficiency and waste avoidance

Outcome 2 Advancing innovation in the waste and resource recovery sector

Outcome 3 Increasing export opportunities for the waste, recycling and resource recovery sector

Outcome 4 Developing robust data collection systems to provide an evidence-base for policy and program work

Outcome 5 Engaging with key stakeholders to support the implementation of waste strategies and policies

2016-17 Business Plan

1. OBJECTIVE: TO KEEP SOUTH AUSTRALIA AT THE FOREFRONT OF GREEN INNOVATION IN THE WASTE, RECYCLING AND RESOURCE RECOVERY SECTORS

Industry Program – resource assessment and evaluation

This program addresses waste avoidance and reduction. It offers an integrated, systematic and proven approach to improve resource efficiency. Through the delivery of expert advice and guidance, this program builds capacity within an organisation to enable businesses to make informed decisions about implementing sustainable changes. Support is also provided for industry groups to deliver programs for the benefit of their members and broader industry. Working closely with other State Government agencies, the program provides key competencies in the areas of waste, water, energy, lean manufacturing and compliance. Key elements of the program include:

- **Resource efficiency and productivity reviews:** Identifies opportunities for improving waste, energy and water management. It includes lean production and productivity reviews to identify opportunities for eliminating waste; improving efficiencies and business performance.
- **Expertise to establish waste management standards/systems:** Suited to large businesses or co-located businesses looking to improve waste management services as a collaborative unit.
- **Grants:** For organisations that represent the interests of South Australian businesses, such as industry associations and business groups for education and mentoring projects to improve resource efficiency and avoid waste.

Budget

2016-17	2017-18	2018-19
\$283,000	\$435,000	\$624,000

South Australian Government Trade Waste Initiative

The South Australian Government's Trade Waste Initiative, administered by the Office of Green Industries SA, aims to help businesses improve the way trade waste is managed (focusing on quality and quantity), reduce operating costs and increase productivity by improving the way materials, energy and water are used. The program targets South Australian businesses with high trade waste volume and load, specifically the food and beverage industry – and offers the opportunity to improve systems and processes for positive environmental outcomes.

Resource productivity assessments

Eligible business can apply for a grant to cover up to 50% (to a maximum of \$10,000 GST exclusive) towards the cost of a resource productivity assessment that will identify opportunities to reduce trade waste impacts through efficiency gains and better use of waste, energy, materials and water.

A preferred supplier list for delivery of the assessments consists of consultants capable of providing resource productivity assessments according to the Trade Waste Initiative guidelines. To be eligible for grant funding, businesses must engage one of the listed suppliers to complete a resource productivity assessment that will identify opportunities for improving trade waste management and can form the basis of a business case for implementation.

Budget

2016-17	2017-18	2018-19
\$1,088,000	\$52,000	-

Food and Beverage Implementation Grants

Grants will be offered to eligible SA Water trade waste customers in the food and beverage industry to support implementation activities that are expected to lead to improvements in trade waste management (reductions in volume and/or improvement to water quality). Eligible businesses can apply for a grant to cover up to 50% of implementation costs, with grant funding capped at \$300,000 (GST exclusive) per business. This program supports the South Australian Government's economic priority, 'Premium food and wine produced in our clean environment and exported to the world'.

Budget

2016-17	2017-18	2018-19
\$2,988,200	\$1,252,100	-

Technical support and communications

To ensure South Australian businesses are adequately supported in their decision to invest in trade waste infrastructure and related activities a qualified trade waste specialist will be engaged to provide expert advisory services. The trade waste specialist will advise businesses on trade waste improvement opportunities and provide technical expertise for enquiries and funding request assessments.

Budget

2016-17	2017-18	2018-19
\$234,000	\$135,000	-

INNOVATION, RESEARCH AND MARKET DEVELOPMENT

Innovation plays a critical role in transforming the South Australian economy is one of the State's economic priorities. There is enormous economic potential arising from new technologies and the trend towards re-manufacturing. Innovation in resource efficiency has potential to generate significant cost savings and productivity improvements throughout the economy. Realising the economic potential from innovation in technology is the overriding ambition of the current Waste Strategy.

Commercialisation of innovation

Investment in the rapid commercialisation of innovative ideas in the waste and resource recovery sector will help to keep South Australia at the forefront of green innovation in the waste, recycling and resource recovery sectors.

A partnership is being established with Innovyz through a loan facility to enable the development of a business mentoring program which will support the rapid commercialisation of innovative waste and recycling technologies.

Innovyz is a South Australian-based company that is commercialising research and related innovations through a fast tracked mentoring and business development model. A key feature is the ability to attract business mentors with significant international expertise in this field. Innovyz has identified the waste and recycling sector as one which has high potential for the development of new technologies and systems that would have global implications. The program will select leading innovations from within the sector, including innovations in the area of avoidance, reduction, and reuse and recycling of consumables and resources. It is intended to re-invest the loan in future commercialisation programs.

Budget

2016-17	2017-18	2018-19
\$857,000	\$59,000	\$858,000

Innovation Grant Program

In 2015-16, Green Industries SA introduced the Innovation Grants Program to support innovative projects which provide economic, environmental and community benefits. Due to delay in commissioning and testing processes a milestone payment for a project has been carried over to 2016-17. This program has been replaced by the Industry Infrastructure Grants program.

Budget

2016-17	2017-18	2018-19
\$157,000	-	-

INTERNATIONAL ENGAGEMENT AND MARKET DEVELOPMENT

Waste management in South Australia is well developed and provides a platform for local industry to take advantage of its intellectual property by providing this expertise through export opportunities. The Green Industry Fund, incentives and regulation have assisted in South Australia gaining this recognition. The agency's involvement in international developments, in some cases with other State Government and industry partners, has included providing advice in forums and assistance to develop waste management strategies.

Export opportunities and international policies

Internationally, the Office of Green Industries SA has established a reputation for leadership in waste management and resource recovery. Working with other jurisdictions internationally and nationally assists the agency to develop, coordinate and contribute to the implementation of South Australia's waste management policy objectives.

As South Australia's credentials grow globally, there will be further opportunities for this State's businesses to export their expertise and develop pragmatic solutions that are fit for purpose in other jurisdictions. For example, the Office of Green Industries SA has detailed knowledge of consultants and contractors providing professional services in waste reduction strategies, materials efficiency, industry symbiosis and sustainability.

In 2016-17 the agency will focus on the following international engagement strategies:

- Promoting South Australia's capabilities in waste management and resource recovery to India in consultation with the Department of State Development and the State Government's *South Australia-India Engagement Strategy*.
- Identifying local businesses in the waste sector which have an interest in developing export and investment opportunities with China, particularly in Shandong consistent with the State Government's *South Australia-China Engagement Strategy*.

- Marketing opportunities for South Australian companies in the waste sector in Indonesia, Malaysia and Singapore. There is a strong opportunity to develop long lasting export potential for South Australian expertise in engineering and design, policy development and regulation, training and education, in addition to off-the-shelf products.

Budget

2016-17	2017-18	2018-19
\$98,000	\$109,000	\$110,000

Development of post-graduate courses

Opportunities are emerging for South Australia to be a training destination for overseas practitioners, whether these are in behaviour change or systems design and deployment, or alternative technology policy.

In 2016-17, the agency will develop short post-graduate courses for international and Australian students to study waste management and policy in Adelaide. Waste management is a prominent and difficult problem in many countries including Asia and India. Often the equipment is available and the regulations are in place. However the knowledge and capacity to implement systems that feed the technology is lacking, but can be addressed through education.

Budget

2016-17	2017-18	2018-19
\$34,000	\$99,000	\$79,000

United Nations Centre for Economic Development (UNCED)

The Seventh Regional 3R Forum in Asia and the Pacific was held at the Adelaide Convention Centre on 2-4 November 2016. The Office of Green Industries SA was responsible for the event’s organisational management, working closely with the UNCED Secretariat. The UNCED’s desire to hold the event in Adelaide recognised South Australia’s leadership in waste management and resource recovery.

The event was an opportunity for the State to showcase its expertise in the waste management, recycling and resource recovery sectors. It was also an opportunity for South Australia to deepen and expand its work driving economic outcomes within a broader framework of engagement with India, China and South East Asia and the Pacific. The Office of Green Industries SA sought sponsorship funding from other government and private sector organisations to help support the delivery of the event.

The Regional 3R Forum in Asia and the Pacific was launched in 2009, with an objective to integrate 3Rs (reduce recycle reuse) into overall policy, planning and development. The Forum:

- seeks to address policies, programs, measures, tools and technologies in the context of achieving

resource efficiency, sustainable production and consumption, integrated solid waste management, sound material-cycle, low-carbon and zero waste society

- provides a knowledge sharing platform for sharing best practices in 3R areas, including new and emerging issues of concern in waste management.

Budget

2016-17	2017-18	2018-19
\$383,000	-	-

2. KEY OBJECTIVE: TO DELIVER REDUCED WASTE TO LANDFILL AND INCREASE THE STATE'S CAPACITY FOR RECYCLING

KNOWLEDGE MANAGEMENT

The Office of Green Industries SA is the custodian of data which measures the State's progress against indicators in South Australia's Strategic Plan 2011, South Australia's Waste Strategy 2015-2020 and relative to other jurisdictions. Data is also used to guide investment opportunities and evaluate programs and market interventions, for example the results of innovation grants, overseas investment in South Australia or export outcomes from the sector.

Waste audits and recycling activities study

South Australia's Strategic Plan 2011 (SASP) has a target of reducing waste to landfill by 35% by 2020 against a 2002-03 baseline. Since 2003-04, the agency has reviewed recycling activity in South Australia to guide its activities and to monitor progress of the State against targets in the SASP and South Australia's Waste Strategy. Data is collected from recyclers and re-processors to provide stream-by-stream and waste type recycling tonnages. Previous surveys have shown a steady increase in recycling. The 2016-17 survey will capture data obtained for the 2015-16 financial year. The data from this collection also forms a major part of South Australia's submission to the Australian Government for inclusion in the national report on waste.

Budget

2016-17	2017-18	2018-19
\$124,000	\$125,000	\$126,000

Zero Waste Environment User System (ZEUS)

ZEUS is a web-based system developed by the Office of Green Industries SA to facilitate the monitoring, analysis and reporting on waste reduction targets in South Australia's Waste Strategy. ZEUS collects information on: recycling activity; waste (tonnes) to landfill by waste stream (municipal solid waste, commercial and industrial waste, and construction and demolition waste); litter; economic and environmental costs and benefit; infrastructure needs; and areas needing regulatory underpinning. ZEUS also captures corporate data including contract information, agency publications and industry and stakeholder contacts. In 2016-17 ZEUS will continue to capture data on illegal dumping, household hazardous waste and farm chemicals, municipal solid waste, composted organics, container deposits, litter, landfill, and grants and incentives. Councils can use ZEUS at no cost, with free training provided by the agency. It will collaborate with the Environment Protection Authority to identify opportunities for gathering additional data to support waste reforms.

Budget

2016-17	2017-18	2018-19
\$180,000	\$213,000	\$186,000

GREEN ECONOMY POLICY, STRATEGY AND ADVOCACY

The Office of Green Industries SA will maintain a strong role in waste sector policy development, advocacy and implementation as set out in South Australia's Waste Strategy 2015-2020. The agency will also develop policies and actions aligned with new economic systems such as the circular economy and collaborative consumption and the sharing economy which target waste avoidance.

Waste strategy and policy

South Australia's Waste Strategy provides a framework to assist South Australia meet its priorities for economic prosperity and community well-being. Its three objectives are:

- a resource efficient economy where the best or full value is secured from products and materials produced, consumed and recovered across the State
- a stable and efficient market for investors through a clear policy framework providing a solid platform for investment decisions
- a culture enabling the South Australian community, business and institutions to continue and strengthen their role in implementing zero waste strategies and programs locally, nationally and internationally.

In 2016-17 the following projects and activities will be undertaken:

- Contribute to the development and implementation of relevant policies and initiatives including in relation to contaminated soil, energy from waste and improved waste management systems for multi-unit dwellings and mixed use developments.
- Support the State Government’s work to transition to a low carbon economy and making Adelaide, South Australia’s capital city, and the world’s first carbon neutral city through the establishment of a carbon neutral ‘Adelaide Green Zone’ by advising on initiatives relating to waste management, recycling and resource recovery.
- Advocate for new product stewardship approaches for waste products and materials that will in turn provide market opportunities for South Australian businesses.
- Advocate for better national product stewardship systems for tackling problematic wastes as well as acting independently in the State’s interests. This will also support materials banned from landfill under the *Environment Protection (Waste to Resources) Policy 2010*.

Planning for waste infrastructure

In 2016-17, the agency will complete the development of the State-wide Waste and Resource Recovery Infrastructure Plan in consultation with key stakeholders.

The plan identifies infrastructure investment over the next 30 years. It was developed in response to a critical finding of the *Review of South Australia’s Waste Strategy 2011-15* which identified waste and resource recovery infrastructure planning and investment as important future needs to support industry development (particularly to retain South Australia’s position on the global platform where it currently stands high) and economic growth in the State.

In 2015-16, the agency commissioned a study to inform the development of the waste and resource recovery infrastructure plan. Using the best available data, the study has modelled the future waste flow, corresponding infrastructure needs and economic impact assessments for different landfill waste diversion scenarios over 10 and 30 year timespans and has estimated that between 933 to 2,053 direct and indirect FTE jobs could be created in 10 years, rising to 3,323 to 4,719 direct and indirect FTE jobs over 30 years.

Budget

2016-17	2017-18	2018-19
\$319,000	\$320,000	\$300,000

Circular economy³ – new green economies

The circular economy is gaining attention in Europe and in particular the UK, with growing uptake in USA and Asia. An essential component for South Australia to move towards a circular economy is the need for reliable information related to its impacts and benefits. The Office of Green Industries SA will collect information to inform forward planning, investment considerations and policy development.

The agency will encourage waste avoidance and business sustainability and assist organisations wanting to learn more about resource efficiency. Much of this work will be undertaken in regional areas including the South-East of South Australia where a program adviser is located. During 2016-17, work will be undertaken in area of circular economy and industrial symbiosis: Finalise and publish a study that provides quantified, reliable information at a State level about the likely benefits of a circular economy; Investigations into higher value uses of waste including alternative uses of waste such as a new product, input for another organisation's production processes, on-site energy production, or use as an on-site alternative fuel source; Facilitating an integrated and structured approach to industrial symbiosis whereby one organisation's waste is a useful and valuable input to another organisation.

Budget

2016-17	2017-18	2018-19
\$254,000	\$317,000	\$320,000

Collaborative consumption and sharing economy⁴ - Share N Save

Since the 2013 launch of 'Share N Save', the Office of Green Industries SA has remained one of the 'first movers' in governments globally to have an established presence in the sharing economy and collaborative consumption fields.

Share N Save is an interactive website which identifies food swaps, community gardens, Men's Sheds, toy and tool lending libraries, co-working spaces and other resources. It assists South Australians to reduce household financial pressures through sharing activities and increasing the use of resources to avoid consumption and associated waste. The website is at: www.shareNsave.com.au; [www.twitter.com/shareNsave](https://twitter.com/shareNsave); www.facebook.com/shareNsave. In response to strong international interest from leaders of the sharing movement, the website has been released as open source at <https://github.com/ShareNSave>.

Share N Save reflects the 'Avoid' part of the waste hierarchy, where 'Avoid' is defined as 'not needing to consume resources', rather than 'avoiding waste to landfill'. During 2016-17, consultation will be undertaken to:

³ A circular economy is an alternative to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life', WRAP, United Kingdom, <http://www.wrap.org.uk/content/wrap-and-circular-economy>

⁴ The 'sharing economy' (also known as 'collaborative consumption' or 'peer to peer' economy) is a global movement where people use web and mobile technology to barter, lend, swap and otherwise share to create social benefit within a community. This sharing approach helps people save time, money and resources by meeting their needs in collaboration with others.

- inform and identify sharing opportunities in the community which can build on Share N Save's achievements
- identify opportunities where the platform could be used to enable local industry and business to benefit from collaborative economy activities such as industrial symbiosis
- support the development and promotion of collaborative production approaches such as maker and co-working spaces
- sponsor thought leaders in the co-operative, collaborative areas
- identify an opportunity for a partnership with an organisation which will expand the use of the Share N Save platform.

Budget

2016-17	2017-18	2018-19
\$115,000	\$116,000	\$118,000

Partnerships

In 2016-17, the partnership with the **Local Government Association of South Australia** will support the implementation of South Australia's Waste Strategy and policy goals for the green economy in relation to the following areas:

- coordinating and advocating for national solutions to problematic waste such as packaging and hazardous waste
- supporting the implementation of the *Environment Protection (Waste to Resources) Policy 2010*
- facilitating local government discussion of key issues of relevance to the agency and the establishment of Green Industries SA.

Budget

2016-17	2017-18	2018-19
\$62,000	\$63,000	\$63,000

The **Waste Management Association of Australia** (WMAA) SA Branch represents and advocates its members' issues. South Australia's Waste Strategy recognises that a partnership with the WMAA provides valuable input into decision-making processes.

This continued partnership will help WMAA link the industry with the Office of Green Industries SA and support WMAA to:

- hold events to improve industry knowledge and expertise, and provide networking opportunities
- administer working groups and distribute information to members regarding the transition to and establishment of Green Industries SA.

Budget

2016-17	2017-18	2018-19
\$29,500	\$30,013	\$30,538

INFRASTRUCTURE INVESTMENT AND EMPLOYMENT GROWTH

South Australia's Waste Strategy 2015-2020 has a long term strategic objective to to increase and maintain capacity of recycling systems and reprocessing infrastructure. However, the waste and resource recovery sector will require significant investment in new and additional infrastructure to deal with waste generated in the State in the next 30 years. Economic analysis shows that in order to achieve waste diversion targets in South Australia's Waste Strategy 2015-2020, total capital costs of over \$81 million are required for waste and resource recovery infrastructure. Cost benefit analysis indicates the investment is worthwhile over a 10-year and 30-year period with benefit-cost ratio of 1.7 and 1.9 respectively. Over five years, the investment is estimated to make a total contribution to the Gross State Product of approximately \$271 million (directly and indirectly) and average annual employment of 499 FTE jobs (directly and indirectly).

Local Government Program (food waste, household recycling education)

Local government plans and manages municipal systems for solid waste, recyclables and green organics. It is central to planning infrastructure needs, including industrial waste needs where municipal and industrial facilities combine.

The Office of Green Industries SA will collaborate with the Local Government Association of South Australia to develop a strategic and co-ordinated approach towards regional and metropolitan planning and investment decisions to ensure optimal outcomes for the community. This approach has reaped tangible results in previous years through a systematic and prioritised approach towards improving regional waste management planning and operations. Consultation with councils and local government authorities co-ordinated by the Local Government Association of South Australia has identified soft and hard infrastructure projects which could be funded under this program. For example:

Eyre Peninsula Local Government Area: regional waste management strategies; resource recovery facility

Central Local Government Area: upgraded transfer stations (weighbridges); in the longer term, regional transfer station and sorting facility

Adelaide Hills Councils: recycling/waste reduction services; steel balers; undercover facilities at Heathfield landfill; salvage facilities in partnership with Finding Workable Solutions

Adelaide Hills Region Waste Management Authority: replacing existing resource recovery crushing equipment

Fleurieu Regional Waste Authority: regional hazardous waste management facilities

Other regional projects identified included: waste reduction strategies; green waste mapping; improved compost quality; possible bio-energy production and spent compost energy production.

Household food waste collection program

Landfilled food waste generates methane which is a powerful greenhouse gas with a global warming potential 21 times greater than the same amount of CO₂, contributing significantly to global climate change. South Australia's Waste Strategy has a stretch target of 70% for all material presented at kerbside to be recycled by 2020. Kerbside collection of food scraps and reduced contamination will assist with the achievement of this target. Building on the agency's previous Kerbside Incentives Plus program, funding will be allocated to encourage the establishment of consistent green/food organics collection system across all councils (and in particular metropolitan councils).

Household recycling education

Education and awareness using the *Recycle Right*[®] and 'Good to Go' suite of resources will be included in this funding to to maximise household take-up of food waste recycling.

Funding will also be provided for education initiatives to encourage improved knowledge and correct recycling practices for the 'yellow' and 'green' bin as highlighted in market research.⁵

Budget

2016-17	2017-18	2018-19
\$386,000	\$2,588,000	\$4,131,000

Industry and Local Government Infrastructure Grants Program

A recent study of future waste infrastructure requirements commissioned by the Office of Green Industries SA concluded that the waste sector will require significant investment in new and additional infrastructure to deal with waste generated in the State in the next 10 and 30 years periods. The Industry Infrastructure Grants program aims to increase the ability of local reprocessors to produce high value end-use products from recyclables by investing in infrastructure that enables greater efficient reuse of waste materials and reduces waste sent to landfill. There are considerable public benefits arising from resource recovery infrastructure investment, such as avoided landfill costs, reduction in the use of virgin materials, energy, water and greenhouse gases and economic development.

Budget

2016-17	2017-18	2018-19
\$1,210,000	\$1,316,000	\$3,439,000

⁵ *Recycle Right*[®] advertising campaign market research highlights - http://www.zerowaste.sa.gov.au/upload/resource-centre/publications/reuse-recovery-and-recycling/ZWSA%20RR%20Executive%20Summary%20de_24.2.16.pdf

Metropolitan Infrastructure Grant Program

The Metropolitan Infrastructure Grant Program aimed to increase the ability of local reproducers to produce high value end-use products from recyclables by investing in infrastructure that enabled greater reuse of waste materials and reduces waste sent to landfill. This program has been replaced by the Industry Infrastructure Grants Program. A carryover of funds in 2016-17 allows for the completion of deliverables under a funding agreement.

Budget

2016-17	2017-18	2018-19
\$26,000	-	-

Regional Implementation Grant Program

The Regional Implementation Grant Program provided funding and assistance for: infrastructure investment for local government and industry; the development and update of regional waste management plans and strategies; and identifying and implementing innovative local solutions. It has been replaced by the Industry Infrastructure Program. A carryover of funds in 2016-17 allows for the completion of deliverables under a funding agreement.

Budget

2016-17	2017-18	2018-19
\$96,000	-	-

Innovative solutions for problematic wastes

Starting in 2017-18, \$590,000 is notionally allocated for the development of innovative solutions to problematic wastes. This funding will address gaps in council waste management services, for example:

- potential inclusion of new materials in the recycling stream such as: batteries, for example, by placing in an orange bag for easy identification and removal in recycling centres; clothing, for example, by having a special day for collection once every three months using the recycling bin
- inconsistent hard waste collection systems across councils
- more accessible public drop off facilities, for both hazardous wastes and other unwanted goods such as gas cylinders, furniture, and mattresses.

A Research and Development Advisory Panel established by the Board of Green Industries SA will identify research projects recommended for funding.

Budget

2016-17	2017-18	2018-19
-	\$190,000	\$319,000

Household hazardous waste and farm chemical collection program

South Australians are provided with a responsible safe collection and disposal service for unwanted chemicals through the Hazardous Waste Depot at Dry Creek. Collections are free and open to all householders. The depot is open between 9am and 12 noon on the first Tuesday of every month.

The facility is invaluable to the South Australian community. In 2016-17, In line with the South Australia's Waste Strategy, the Office of Green Industries SA will:

- continue to fund a household and farm hazardous waste program and report the results
- educate the community about proper household hazardous waste management practices
- encourage the recovery and treatment of oils, solvents and other valuable materials for reuse.

The agency will also continue to advocate for investment in expanded facilities for the disposal of household hazardous waste. Additional State Government funding starting in 2017-18 will enable the re-introduction of some mobile collection services in conjunction with regional councils. An Expression of Interest process will be used to assess interest in establishing permanent facilities with improved access and operating hours.

Budget

2016-17	2017-18	2018-19
\$205,000	\$245,000	\$639,000

BackLight Program Infrastructure development and employment growth

The *Backlight* program, run in conjunction with the Office of Green Industries SA and Mitre10, Banner and True Value hardware stores allows South Australians to recycle all domestic light globes at no cost. The globes are recycled by Chemsal Resource Recovery. The aluminium and mercury is used to make new light globes, the phosphor powder is used in fertilizer, and the glass is re-used for a variety of other glass products. Since the program was launched in 2010, more than 200,000 light globes have been collected, equivalent to 20,000 kilograms of light globes being diverted from landfill and responsibly recycled.

Budget

2016-17	2017-18	2018-19
\$77,000	\$78,000	\$78,000

COMMUNITY EDUCATION

Keep South Australia Beautiful environmental solutions (KESAB) has a valued role as a partner delivering programs to schools and households on litter measurement, reduction, education and awareness. A new three-year service level agreement will define the community education and engagement outcomes to support the objectives of the Waste Strategy. Individual KESAB programs to be funded by the agency under the agreement are summarised below.

Litter data and research and branded litter monitoring

KESAB has been monitoring litter incidence at 151 sites across the State on a quarterly basis since 1998, providing the best continuous data set for measuring litter incidence in Australia.

This program helps the Office of Green Industries SA to maintain effective litter data on trends, item types and locations, and develop community education and awareness campaigns. Data is stored and analysed in ZEUS.

In 2016-17 KESAB will:

- conduct quarterly counts at 151 sites throughout South Australia in February, May, August, November
- maintain a comprehensive database and trend line of litter streams in South Australia
- integrate with Keep Australia Beautiful National Litter Index and Branded Litter Study
- develop litter reduction strategies and resources based on litter count data
- achieve measureable reduction in targeted litter
- regularly report to, engage and inform stakeholders
- continue ongoing public awareness and media management
- independently audit count procedure and results annually.

Budget

2016-17	2017-18	2018-19
\$53,000	\$53,000	\$53,000

Community litter, education, resources and campaigns

Extensive social research into community behaviour, litter and recycling highlights the need for new community and public place litter resources and strategies. The research findings identify targets and opportunities to focus on key issues and community sector groups. This enables resources and strategy options to be developed in collaboration with partners and stakeholders. This program aims to develop and regularly update a suite of contemporary litter awareness and information materials (brochures, posters, signs, some in languages other than English), and make them available to councils, schools, community groups and stakeholders to increase awareness of litter disposal.

In 2016-17 KESAB will:

- develop and implement litter awareness strategies in collaboration with sectors identified through the Litter Data and Branded Litter Monitoring programs and through stakeholder feedback
- monitor new packaging types and report on their impacts
- develop and disseminate information and resources to stakeholders for implementation.

Budget

2016-17	2017-18	2018-19
\$68,000	\$68,000	\$68,000

Wipe Out Waste schools program

The Wipe Out Waste (WOW) program provides training and resources for teachers and helps drive positive change in schools and preschools. WOW was developed on behalf of the Office of Green Industries SA by KESAB, the Department of Environment, Water and Natural Resources, and the Department for Education and Child Development. WOW is an integrated comprehensive waste education program supported by curriculum resources and teacher training. It is the first waste education program in Australia to span preschool through to primary and secondary schools.

WOW resources enable teachers and school staff to gain an understanding of waste, litter, recycling, resource recovery and related environmental issues as part of the curriculum. WOW is a fundamental adjunct to the Australian Sustainable Schools Initiative. Under this program, KESAB has committed to:

- using measurable evidence to report against deliverables in the strategic plan
- developing age-appropriate resources as needed
- identifying community, council and industry linkages and partnerships for each participating school
- encouraging and supporting the reduction of waste in sites
- regular reporting to stakeholders.

Budget

2016-17	2017-18	2018-19
\$243,000	\$243,000	\$243,000

Recycle Right® 1300 telephone information line

The *Recycle Right*® 1300 recycling telephone hotline has been transferred to KESAB *environmental solutions* following consultation on the future delivery of the *Recycle Right*® program arising from the response to the Establishment of Green Industries SA consultation. Operation of the information service through KESAB will enable provision of a responsive and accurate service to the community seeking information on options for recycling a wide range of information. KESAB will also be responsible for ensuring the *Recycle Right*® database delivered through a new dedicated website is updated at least monthly to reflect changes in council systems, options and legislative and industry changes.

Budget

2016-17	2017-18	2018-19
\$9,000	\$12,000	\$12,000

3. KEY OBJECTIVE: TO BUILD THE STATE'S CAPABILITY AND RESILIENCE IN THE AREA OF DISASTER WASTE MANAGEMENT

Disaster Waste Management Support Plan development

The *Review of South Australia's Waste Strategy 2011-2015* identified disaster management waste planning as an important area of policy development. In response to this finding, in 2015-16, with Australian Government funding support, the agency completed a Stage 1 Disaster Waste management Scoping Study.

This Study reviewed current disaster waste management practices and the associated regulatory framework in South Australia, and developed waste profiles for selected flood, severe storm, earthquake and bushfire scenarios. It also identified skills required for personnel, equipment needs, selection criteria for temporary debris storage sites and developed a disaster waste management contingency planning methodology. The Study also found that to date, there is no framework for managing disaster waste in South Australia and disaster waste management practices have been largely reactive with little pre-planning. Therefore, in 2016-17, in collaboration with key state emergency management stakeholders, the agency will develop a Disaster Waste Management Support Plan under the State Emergency Management Plan along with guidelines for disaster debris removal and management.

Budget

2016-17	2017-18	2018-19
\$176,000	\$226,000	\$140,000

CORPORATE SUPPORT

Communications, media, marketing and website

The Office of Green Industries SA's communications, media and marketing activities target industry, government and community. Communications aim to raise awareness of the agency's program and activities. The main channels for communications include media announcements, events, fact sheets, case studies and social media. In 2016-17, it is expected the new www.greenindustries.sa.gov.au website will be finalised.

Budget

2016-17	2017-18	2018-19
\$171,000	\$131,000	\$107,000

Board support

Green Industries SA provides policy and administrative support to the Board of Green Industries SA and committees approved by the Board (for example, the Governance Committee). The Board meets approximately 10 times a year and members (excluding public servants) receive remuneration. This budget item is for Board meeting operational costs, training and staff salaries and on-costs allocated to support the Board function.

Budget

2016-17	2017-18	2018-19
\$224,000	\$251,000	\$253,000

Corporate services

This budget items provides administration support to the organisation, including work health and safety, rental office lease payments, payroll, insurance, fleet management, telecommunications and purchasing, Board support and management of the Green Industry Fund.

Budget

2016-17	2017-18	2018-19
\$907,500	\$1,073,887	\$1,156,462

BUDGET

Funding provisions

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 to be used by Green Industries SA for its programs. The approved expenditure authority for 2016-17 is \$13,775,200.

Revenue, expenditure and cash balance

	2016-17 (\$)	2017-18 (\$)	2018-19 (\$)
Revenue	29,196,000	33,705,000	39,126,000
50% of waste levy payments from Environment Protection Authority	27,554,000	31,740,000	36,126,000
Trade Waste Initiative intra government transfer from Department of State Development	154,000	78,000	0
Interest on deposits	1,400,000	1,800,000	3,000,000
Income from external sources	88,000	87,000	0
Expenditure authority	13,775,200	15,892,000	17,495,000
Cash balance – Green Industry Fund			
Cash held 1 July 2016, opening balance	86,803,000	102,223,800	120,036,800
Cash held 30 June 2017, estimated closing balance	102,223,800	120,036,800	141,667,800

Authority to make variations to the business plan within five per cent of the budget

The Minister for Sustainability, Environment and Conservation has authorised the Board of Green Industries SA to make variations to the business plan within five per cent of the approved budget under Section 14(5) of the Act. This will ensure that minor changes can be made quickly in response to issues as these arise. The Board will advise the Minister of the details of any variations to the business plan that are made within that five per cent variation limit.

Expenditure

	2016-17	Budget (\$) 2017-18 ⁶	2018-19 ⁷
1. Key objective: To keep South Australia at the forefront of green innovation in the waste, recycling and resource recovery sectors			
Help businesses to be more resource efficient			
Industry Program - Resource Assessments and Evaluation	283,000	435,000	624,000
South Australian Government Trade Waste Initiative – resource productivity assessment	1,088,000	52,000	-
South Australian Government Trade Waste Initiative – Implementation Grants	2,988,200	1,252,100	-
South Australian Government Trade Waste Initiative – Technical support	234,000	135,000	-
Sub-total	4,593,200	1,874,100	624,000
Innovation, research and market development			
Commercialisation of innovation	857,000	59,000	858,000
Innovation Grant Program	157,000		
Sub-total	1,014,000	59,000	858,000
International engagement and market development			
Export opportunities and international engagement	98,000	109,000	110,000
Development of post-graduate courses	34,000	99,000	79,000
United Nations Centre for Regional Development	383,000	-	-
Sub-total	515,000	208,000	189,000
TOTAL OBJECTIVE 1	6,122,200	2,141,100	1,671,000

⁶ Budget includes salaries and on costs but excludes anticipated increases arising from indexation.

⁷ *ibid*

2. Key objective: To deliver reduced waste to landfill and increase the State's capacity for recycling

Knowledge management			
Waste audits and recycling	124,000	125,000	126,000
Zero Waste Environment User System (ZEUS)	180,000	213,000	186,000
Sub-total	304,000	338,000	312,000
Green economy policy, strategy and advocacy			
Waste strategies policy and review	319,000	320,000	300,000
Circular economy – new green economies	254,000	317,000	320,000
Share N Save	115,000	116,000	118,000
Partnerships - LGA	62,000	63,000	63,000
Partnerships - WMAA	29,500	30,013	30,538
Sub-total	779,500	846,013	831,538
Infrastructure investment and employment growth			
Local Government Program (food waste, household recycling education)	386,000	2,588,000	4,131,000
Industry and Local Government Infrastructure Grants Program	1,210,000	1,316,000	3,439,000
Innovative solutions for problematic waste	-	190,000	319,000
Metropolitan Infrastructure Grant Program	26,000		
Regional Implementation Grant Program	96,000		
Sub-total	1,718,000	4,094,000	7,889,000
Household hazardous waste			
Household hazardous waste and farm chemical collections	205,000	245,000	639,000
BackLight	77,000	78,000	78,000
Sub-total	282,000	323,000	717,000
Community education			
Litter data and research and branded litter monitoring	53,000	53,000	53,000
	68,000	68,000	68,000

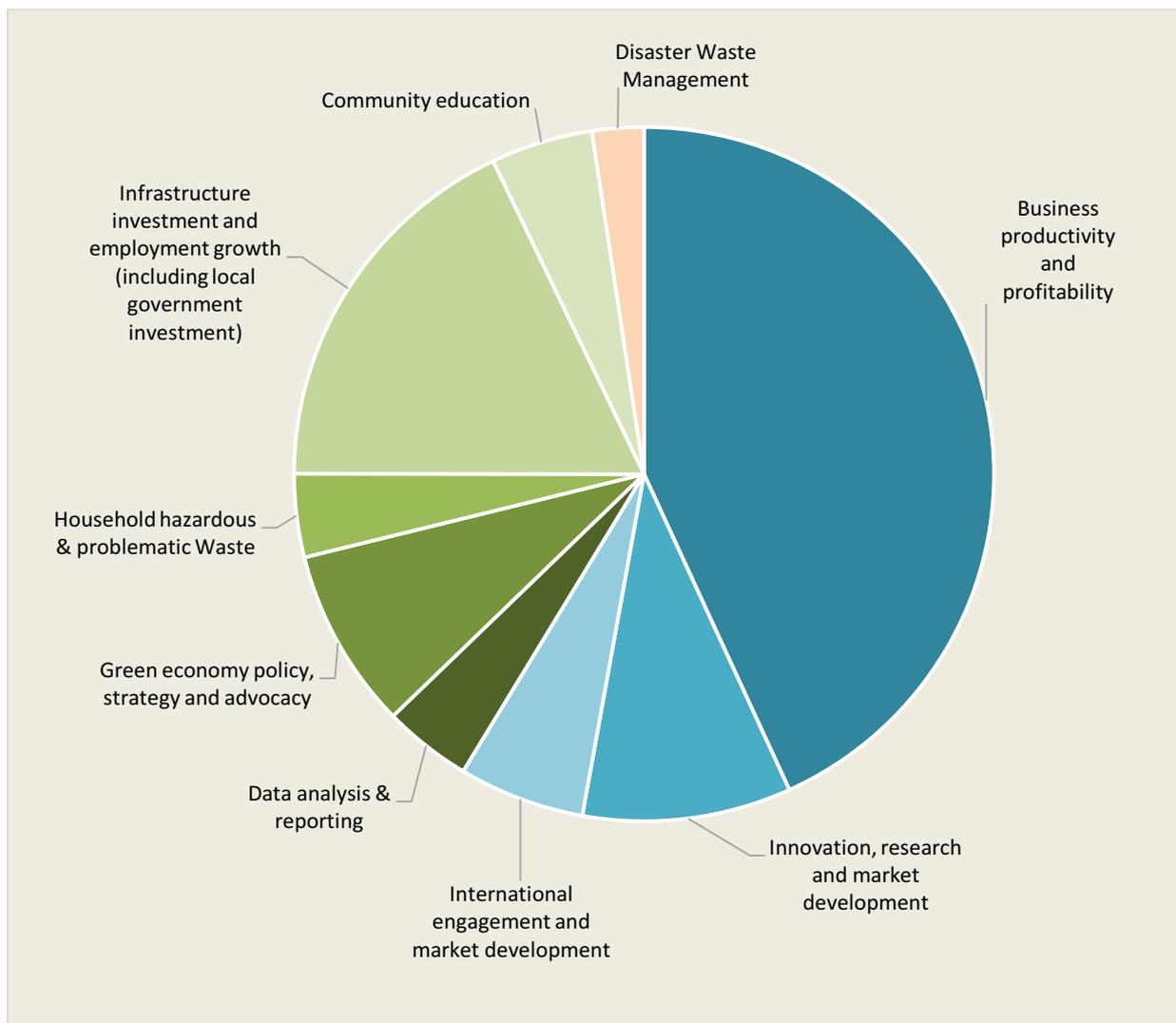
Community litter, education, resources and campaigns			
Wipe Out Waste Schools program	243,000	243,000	243,000
<i>Recycle Right</i> 1300 telephone information line	9,000	12,000	12,000
Sub-total	373,000	376,000	376,000
TOTAL OBJECTIVE 2	3,456,500	5,977,013	10,125,538

3. Key objective: To build capacity and resilience for the State in the area of disaster waste management

Disaster waste management			
Disaster waste management support plan	176,000	226,000	140,000
TOTAL OBJECTIVE 3	176,000	226,000	140,000
Corporate support			
Communications, media, marketing and website	171,000	131,000	107,000
Board support	224,000	251,000	253,000
Intra government transfer ⁸	2,718,000	6,092,000	4,042,000
Corporate services	907,500	1,073,887	1,156,462
TOTAL CORPORATE SUPPORT	4,020,500	7,547,887	5,558,462
CURRENT TOTAL	13,775,200	15,892,000	17,495,000
EXPENDITURE AUTHORITY	13,775,200	15,892,000	17,495,000

⁸ Intra government transfer for climate change projects as applied by the Minister for Sustainability, Environment and Conservation (refer *Green Industries SA Act 2004* s17(5)(b)(i): Department of Environment, Water and Natural Resources (DEWNR) - Carbon Neutral Adelaide (\$0.518m); DEWNR - European Union Climate Knowledge and Innovation Community initiative (\$0.2m); Department of Infrastructure, Planning and Transport - improve infrastructure to promote low carbon forms of transport (\$2m).

Budget distribution chart



Note: Intra government transfer (climate change projects) is excluded

South Australia's achievements in waste management and recycling

Landfill data for 2014-15 indicates that South Australia has reduced waste to landfill by 27.7% since 2002-03, equivalent to 347,875 tonnes of waste. South Australia has therefore achieved its 2014 Target (South Australian Government, 2011).

Recycling activity data collected for 2013-14 shows that South Australia remains a strong performer in recycling and recovery of resources. The 2013-14 SA Recycling Activity Report (Rawtec) shows that 3.59 million tonnes of materials were diverted from landfill and into recycling in 2013-14 with a diversion rate of 79.7%, the highest reported rate compared with other states and territories in Australia.

South Australia's recycling efforts have prevented the equivalent of about 1.12 million tonnes of carbon dioxide entering the atmosphere, which is the equivalent of taking approximately 257,000 passenger cars off the road. The report identifies other estimated environmental benefits resulting from recycling activity are:

- energy savings of 14,650 tera joules (TJ), equivalent to 2.6 million barrels of oil or the energy use by 285,100 average households in one year
- water savings of 12,310 mega litres (ML), equivalent to 4,920 Olympic sized swimming pools or the water use by about 64,790 average Adelaide households in one year.

The report estimates that the total 'direct' market value of resource recovered materials for South Australia in 2013-14 was \$270 million, or \$75 per tonne of resources recovered on average. Metals, paper and cardboard and organic waste materials were the major contributors to this market value.

South Australia's total landfill disposal during 2013-14 was 0.914 million tonnes, a decrease of 9% from the 1.01 million tonnes recorded in 2012-13. The decrease in landfill disposal was mostly due to a fall in the volumes of contaminated soil to landfill from major infrastructure projects.

Since 2003-04:

- total reported resource recovery has nearly doubled, from 2 million to above 3.5 tonnes each year
- the diversion rate has steadily increased from just above 60% to towards 80%.

South Australian Government’s economic priorities

The South Australian Government has also released Economic Priorities for the State: ‘South Australia is the place where people and business thrive’ with 10 priorities for action. It is anticipated that Green Industries SA will form part of the strategy to meet these priorities, as outlined in the figure below.

The 10 economic priorities are:

- unlocking the full potential of South Australia’s resources, energy and renewable assets
- premium food and wine produced in our clean environment and
- exported to the world a globally recognised leader in health research, ageing and related
- services and products
- the knowledge state – attracting a diverse student body and commercialising our research
- South Australia- a growing destination choice for international and domestic travellers growth through innovation
- South Australia – the best place to do business
- Adelaide, the heart of the vibrant state
- promoting South Australia’s international connections and engagement
- South Australia’s small business have access to capital and global markets.

Green industries SA will form part of the strategy to meet these priorities

as summarised in Figure 1 below.

	Unlocking the full potential of South Australia’s resources, energy and renewable assets.	Premium food and wine produced in our clean environment and exported to the world.	A globally recognised leader in research, ageing and related services and products.	The Knowledge State - attracting a diverse student body and commercialising our research.	South Australia – a growing destination choice for international and domestic travellers.
GREEN INDUSTRIES SA	Use of recycled materials in remanufacturing. Cleaner production and resource efficiency.	Cleaner production and Resource efficiency. Hazard reduction.	Operational research through collaborative partnerships with universities.	Research led work attracts international students and global awareness.	SA is perceived and is clean, free of litter and waste is handled in the most appropriate manner.
	Growth through innovation.	South Australia the best place to do business.	Adelaide the heart of the vibrant state.	Promoting South Australia’s international connections and engagement.	South Australia’s small businesses have access to capital and global markets.
GREEN INDUSTRIES SA	Innovation grants to specific sectors focussed on resolving problematic issues of potentially global commercial application.	Waste and recycling companies and consultancy firms are aligned with the needs of smart businesses, advising on better waste handling, processes and waste reduction initiatives. Commercial economic savings for industry to reduce cost of doing business.	Best practice waste systems, remanufacturing and other technologies are operating and on show. Strong public support for same.	Exporting IP and local technology to China, India and ASEAN countries.	Introducing local businesses to international investors facilitating capital investment.

- Source: Green Industries SA Consultation Paper