

ESTABLISHMENT OF GREEN INDUSTRIES SA

CONSULTATION PAPER

**SOUTH AUSTRALIA.
THE PLACE WHERE PEOPLE
AND BUSINESSES THRIVE.**

CONTENTS

1. EXECUTIVE SUMMARY	3
2. SOUTH AUSTRALIAN GOVERNMENT POLICY	4
3. SCOPE OF CONSULTATION	6
4. WHY GREEN INDUSTRIES SA?	7
5. BUILDING ON THE SUCCESS OF ZERO WASTE SA	15
6. SCOPE AND ROLE OF GREEN INDUSTRIES SA	18
7. OTHER PROGRAMS AND INTERVENTIONS	23
8. GOVERNANCE	27
9. ASSISTING SA BUSINESSES TO ACCESS CAPITAL	28
REFERENCES	30

1 EXECUTIVE SUMMARY

South Australia is facing economic challenges which require new responses built on economic diversity, and which capitalise on opportunities in the newly expanding markets in our region¹.

The South Australian Government is reconfiguring agencies and programs to streamline and drive this transformation across the economy's high value sectors, including the waste management and resource recovery sector.

A new statutory authority, Green Industries SA, will be formed on 1 July 2015. Green Industries SA will build on the success of Zero Waste SA and increase South Australia's capabilities and leadership in green industries.

It is expected that Green Industries SA will be funded from the Solid Waste Levy through the Waste to Resources Fund. Currently 50% of the levy is transferred to the Waste to Resources Fund, with Zero Waste SA using and investing a proportion of that fund as provided by the *Zero Waste SA Act 2004* and expenditure authority made through the Government's budget process.

The waste management and resource recovery industry is a significant sector of South Australia's economy. The sector has an annual turnover of about \$1 billion, contributes \$500 million to Gross State Product directly and indirectly and employs about 4,800 people. Nationally, the waste sector is worth an estimated \$14.2 billion per year².

Waste management, and better use of resources, is the responsibility of every government department and every local council authority and the community.

Materials taken from the waste streams are provided downstream to local, interstate and overseas remanufacturing industries that make new products, contributing further to economic activity.

By investing more than \$80 million from waste levy funds in the industry over the past decade, Zero Waste SA has built capacity, improved markets and assisted the development of new products and skills. Benefit cost ratios for funded projects that improve industry competitiveness achieve ratios of 6.7, and for infrastructure investment, between 1.4 and 11.5.

The South Australian Government sees the opportunity to build upon these achievements, creating green jobs and developing new green business opportunities. These are areas of new industries and jobs which the member states of the European Union (EU) are actively developing³. This is a response to the loss of manufacturing jobs and the move to services and the financial challenges in the EU. In a global economy, South Australia will need to continue to strive for world's best practice and maintain a leadership position.



This consultation paper outlines the intended role of Green Industries SA, and seeks input from stakeholders before preparing legislation to bring the new organisation into operation from 1 July 2015.

1. Premier of South Australia, CEDA luncheon, Adelaide, 11 August 2014.

2. Inside Waste Industry Report 2014-15.

3. EEA 2014 - Resource –efficient Green Economy and EU policies. EEA Report No 2/2014 European Environment Agency July 2014.

2

SOUTH AUSTRALIAN GOVERNMENT POLICY

The 2014-15 Budget included an allocation of \$4.1 million per annum for 2015-16, 2016-17 and 2017-18 to establish and support Green Industries SA.

The South Australian Government's policy goals for Green Industries SA are:

- 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.
- To 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.
- To recognise that waste management is a key environmental issue, and presents an opportunity to contribute to the State's economic growth.
- That 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 explore 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. It will be operational from 1 July 2015, coinciding with the winding up of Zero Waste SA.

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. These 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.

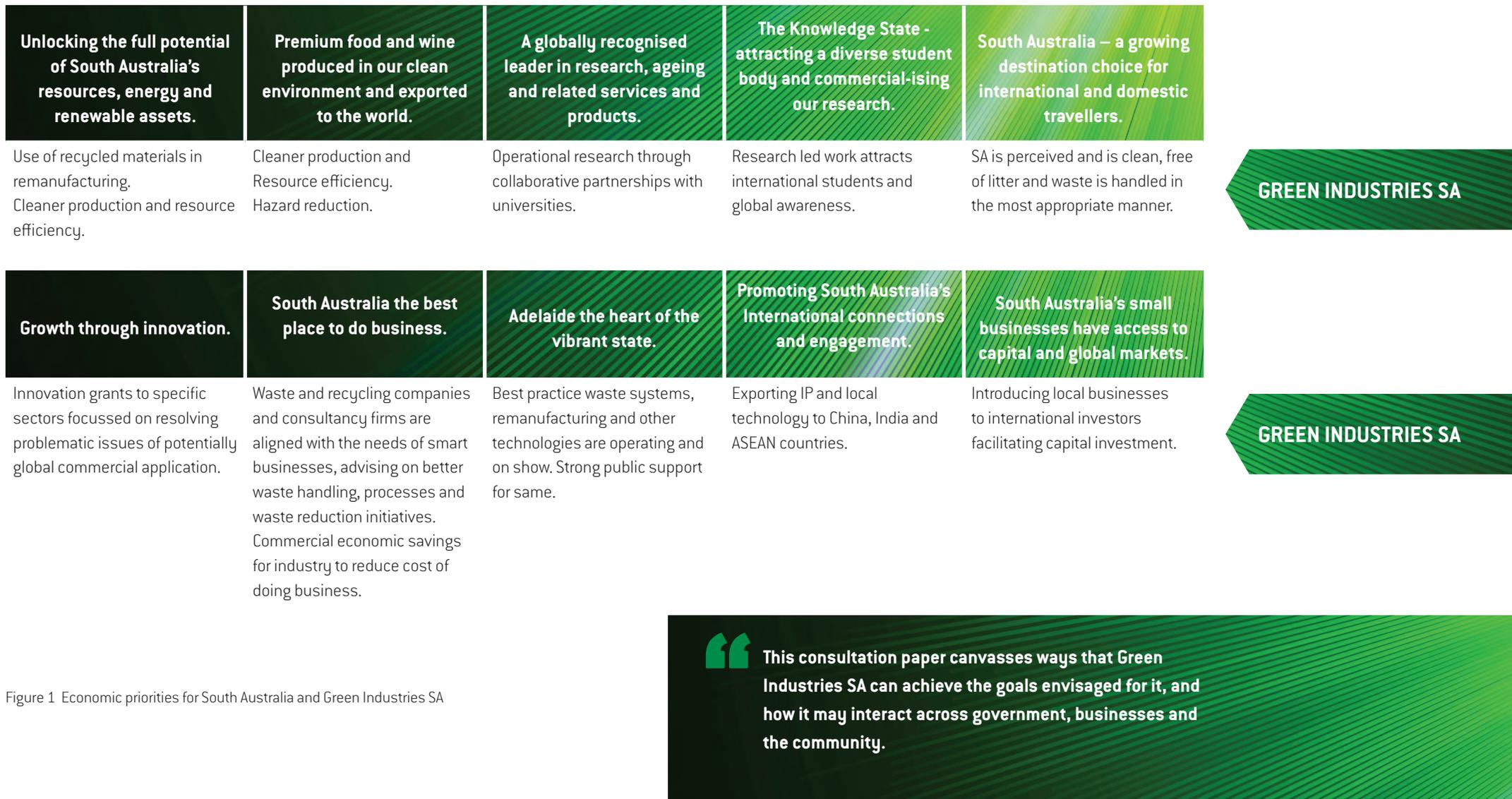


Figure 1 Economic priorities for South Australia and Green Industries SA

3

SCOPE OF CONSULTATION

This paper presents several ideas for consideration and identifies issues relating to Green Industries SA and its proposed role and operations. It poses six broad questions (see opposite) on which the Government seeks your views and opinions, in addition to hearing other contributions that may assist with the formation of Green Industries SA.

When the functions of Green Industries SA have been determined, drafting instructions for legislation will be prepared. Further consultation will occur during the drafting process.

Please consider this consultation paper and provide your comments by 5pm on Friday, 27 February 2015. Should you wish to remain anonymous, please mark your comments 'in confidence'. Comments should be forwarded by email to Green Industries SA Consultation, zerowaste@zerowaste.sa.gov.au or by mail to: Green Industries SA Consultation, c/- Zero Waste SA, GPO Box 1047, Adelaide SA 5001 For further information please telephone 8204 2051.

Briefings and individual meetings will be arranged with interested key stakeholders during the consultation period. Should you require a presentation in addition to this consultation paper, please email your request to zerowaste@zerowaste.sa.gov.au. As stated above, following this first consultation phase, instructions will be prepared for Parliamentary Counsel to develop the draft legislation enabling the establishment and operation of Green Industries SA. A second consultation period will be undertaken for the draft legislation.

GREEN ECONOMY

Question 1: What mechanisms might allow Green industries SA to build strong partnerships and collaborative arrangements that reinforce and build the Green Economy?

SCOPE FOR GREEN INDUSTRIES SA

Question 2: What should be the scope for Green Industries SA? Is the proposed scope too narrow or too broad?

Question 3: To what extent should Green Industries SA take responsibility for the delivery of education and waste services e.g. the Wipe out Waste schools program and services such as household and farm chemicals collection? If Green Industries SA does not carry out these roles, which other organisations might do so? Which of these activities add value to the Green Economy?

GOVERNANCE

Question 4: What should be the skill set of a board to oversee Green Industries SA? How should the board engage with key stakeholders?

FINANCING

Question 5: Is there a need to assist industry in accessing capital to encourage appropriate investment in the Green Economy in South Australia?

Question 6: How could South Australia benefit and build a more positive export return on its investment using its knowledge and experience? How should it work with businesses to achieve this? How could the private sector best benefit from such arrangements? How can infrastructure investment help build local industry capacity and innovation that also enables greater export orientation?

4 WHY GREEN INDUSTRIES SA?

A greater emphasis on clean and green produce, reduced emissions to air, water and soil from industry, more efficient use of resources, and conservation and recovery of scarce resources are collectively creating new global market opportunities that are yet to be fully developed and realised.

South Australian businesses and institutions are well-placed to exploit these opportunities ranging from systems design, education services and implementation to new technology solutions. Demand from our neighbours for these offerings is increasing, as they struggle with pollution, health impacts and environmental damage from industry and increasing urban development.

South Australia has gained recognition for its work in the area of waste management and recycling⁴. The South Australian Government sees considerable opportunity for this State's recycling, remanufacturing and waste management businesses to participate in these growing global markets, and the even faster-growing regional market.

Although South Australia competes in these markets with other countries and other Australian states, through policy and economic instruments it has developed clear competitive advantages. These relate specifically to waste management and recycling, renewable energy, bio-materials, water conservation, and eco-tourism. There is opportunity to ensure South Australia competes on the global stage.

Local waste management and re-manufacturing businesses have successfully developed in South Australia with the assistance of government policy, including through the support of Zero Waste SA, and some businesses are

exporting nationally and internationally. Many of these businesses have yet to realise their full export potential. Many remain small family run businesses and cover the full ambit of the industry from landfill and landfill gas extraction and energy production to composting and consulting services. The Government is committed to supporting local businesses to grow their export markets. So far this export effort has focussed on India and China, the United Kingdom, United States and Europe. The next strategy will include Indonesia, Malaysia, Singapore and Vietnam⁵.



The value and importance of resource efficiency and effective waste management to the state's future economic performance, including in agriculture, mining, manufacturing, other industries, businesses and government sectors, is currently under-estimated.

The waste and resource sector is well positioned to deliver new, high-technology and advanced industry. There is a strategic imperative to establish and create an environment that attracts such economic growth within the state.

The economic benefits of the initiatives and of the sector are significant and require significant institutional capacity, structure and continuation to retain South Australia's position on the global platform (where it currently stands high)⁶.

4. UN Habitat 2010- Solid Waste Management in the World's Cities

5. <http://www.dpc.sa.gov.au/office-international-coordination#news>

6. RWA and Associates 2014 – Review of South Australia's Waste Strategy 2011-2015.

South Australia's businesses can only do well internationally if they are well supported and thriving in our domestic economy. Domestic success is often considered the fore-runner to success in global markets. In addition, building South Australia's international brand and our clean and green reputation will also serve other export businesses well in their ventures as a market advantage, for example, in advanced manufacturing, agriculture, food and wine.

Government's role in enhancing the environment in which businesses operate is primarily to reduce investment risk. It does this through good regulation (or deregulation), government purchasing and procurement decisions and by providing better information and data to the market, enabling it to make appropriate and informed investment choices.

Government also has a continuing role to ensure the State has the capacity to meet future waste and recycling needs, and that this is supported in a strategic manner, matching other development, taking account of population increases and demographics. Infrastructure development provides opportunity for local businesses to demonstrate efficiencies and credentials to potential international customers.

South Australia has the key elements to develop a 'Green Economy', and is now poised to capitalise on this. It has strengths in renewable energy, waste management and recycling, its educational offerings, water systems, and bio-materials.



Figure 2 The Green Economy, developed from EEA 2014

Green Economy development and demand in China, India and Asia.

The global Green Economy is expected to grow significantly over the next 20 years.

China has already invested heavily in the clean energy and environment industry sectors particularly with the post financial crisis stimulus plan. The environment industry now represents over 3% of GDP (Feng 2010). However, each year public protests over negative local environment impacts have grown. China has set a long-term green vision, increasing employment opportunities and new industries. It has introduced favourable financial and tax incentives.

'The transition to a global Green Economy may generate a large market exceeding US\$1 trillion. During the 12th five-year plan period, the Chinese government will invest US\$468 billion in green sectors compared to US\$211bn over the previous five-year period, with a focus on three sectors: waste recycling and re-use; clean technologies; and renewable energy'⁷.

According to UNEP⁸ China's environmental industry has an estimated annual production growth rate of 15%, and grew more than five-fold between 2004 and 2011. Its government recognises it as one of seven strategic emerging industries. At the same time, there are growing concerns about air and water quality, soil pollution and forest degradation. Waste management features as a prominent and difficult problem in Asia. Often the equipment is available, the regulations are in place, however the knowledge and capacity to implement systems that feed the technology is missing.

Local businesses in the green industry sector are already active in China, Singapore, India, Indonesia, Japan, as well as United States of America and the United Arab Emirates.

India is also a large and emerging market for green industries. Waste management is a major opportunity as Australia can offer robust approaches based on our own experiences. For example, Zero Waste SA has, with the assistance of a local consultant funded by the United Nations Centre for Regional Development (UNCRD), developed a waste strategy for Ahmedabad, in Gujarat India. The Ahmedabad Roadmap for Zero Waste⁹ identifies over 34 strategic actions which are now being implemented.

7. China set to vigorously develop Green Economy (Li Yuanyuan Feb 2012 in Renewable Energy.com <http://www.renewableenergyworld.com/rea/news/article/2012/02/china-set-to-vigorously-develop-green-economy>
8. <http://www.unep.org/greeneconomy/South-SouthCooperation/NewsandEvents/NewStudiesCallsOnChinatoMeasureandAssessItsGreenEconomyOpportunities/tabid/133400/Default.aspx>

9. https://www.egovamc.com/Downloads/SWM/Ahmedabad_Road_Map_for_Zero_Waste.pdf

Europe's Green Economy thrust

The European Union (EU) is also driving a greater emphasis on government led policy development in green industries¹⁰. These reforms are recommended in fiscal and budgetary policies of the EU, the European 2020 Strategy and in specific country recommendations as described in the EU's annual growth survey. The EU is a global market leader in many goods and services that can be considered green and it seems that it intends to maintain that lead.

For example, the EU's Flagship Initiative for a Resource-Efficient Europe (EC, 2011a) aims to decouple economic growth from use of material resources. Its Industrial Policy for the Globalisation Era (EC, 2010b) also focuses on being resource efficient.

Europe's environmental regulations and standards are also being increasingly adopted globally. Exporters in other countries are more likely to adopt these rules to comply with EU rules and these rules in turn boost EU exports to countries outside the EU, as these often base their policies on strictest environmental standards.

The Green Industry Platform is also being strongly promoted through the United Nations. The UNIDO policies for supporting green business, the UNEP Business Case for the Green Economy all provide examples and practical policies for implementation.

10. EEA 2014. Resource – Efficient Green Economy and EU policies p6.

11. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A Roadmap for moving to a competitive low carbon economy in 2050.



The estimated investment need for the diffusion of advanced low carbon technologies in the EU is EUR 270 billion a year for the next 40 years¹¹.

The value added directly by the [South Australian] waste and recycling industry in 2011-12 was \$260 million or \$504 million once multiplier effects are taken into account.

Employment in this sector is estimated to be 2,900 jobs, or 3,100 when measured as full-time equivalents. With multiplier effects included, there are an estimated 4,700 jobs in total or 4,800 full time equivalents¹².

Policy development, advocacy and implementation

Green Industries SA should maintain a strong role in policy development, advocacy and implementation. This might include the development of whole of government strategies to clearly articulate the expectations and outcomes from investing in the Green Economy, and the steps needed to achieve this.

There is a significant need for more work to develop Extended Producer Responsibility. Products need to be designed to enable end-of-life disassembly or reuse, and recycling systems are needed to collect, reprocess and remanufacture goods. Markets also need to be found for these products' further use. Without sound recycling systems and markets in place,

12. Zero Waste SA 2014- Review of South Australia's Waste Strategy 2011-2015. http://www.zerowaste.sa.gov.au/upload/resource-centre/publications/waste-strategy/SA%20waste%20strategy%20review_FINAL.pdf

governments are reluctant to influence manufacturers to modify product design. Extended Producer Responsibility invoked under national product stewardship schemes creates a large opportunity for the recycling industry.

Recycling plays a central role in improving waste management by reducing waste going to landfill, reducing consumption of natural resources and improving energy use.

Green Industries SA should continue to advocate for new product stewardship approaches for products and materials that will in turn provide market opportunities for South Australian businesses.

Targeted public expenditure, policy reforms and regulation changes all assist in removing barriers to business and build capacity of green businesses to participate and thrive.

Collaborating and partnering with other departments and organisations to build the Green Economy

Collaboration needs to be a strong tenet for a small organisation such as Green Industries SA. Green Industries SA also needs to be agile and responsive to changing circumstances and government policy directions.

Several South Australian State Government agencies already have a role in key areas impacting on Green Industries SA's proposed operations as well as Zero Waste SA's current activities through its Industry Program. Green Industries SA does not seek to compete with or duplicate the work of other agencies. Rather, Green Industries SA will seek to leverage, value add and collaborate with agencies.

Key South Australian Government agency partners for Green Industries SA

These Government agencies and industry organisations currently support the Green Economy in South Australia:

Department of State Development (DSD) and the Economic Development Board

DSD is the South Australian Government's key agency for driving economic prosperity in the State. DSD helps industry, business and communities identify and capitalise upon opportunities for job creation and economic growth. It harnesses the South Australian Government's expertise in attracting investment, improving industry competitiveness and building a skilled workforce. Green Industries SA would seek to work with DSD on:

- international trade relating to waste, recycling and re-manufacturing and related services
- wastes arising from key industries in South Australia ie potential clientele for addressing cleaner production or industrial symbiosis
- clean technology and innovation grants and programs
- training and vocational education.

Environment Protection Authority (EPA)

The EPA is a statutory authority which regulates certain polluting industries and ensures best practice principles are employed in industry. Planning for new waste and recycling resource recovery infrastructure and upgrade of old infrastructure is a major investment issue. It is imperative that the regulator is kept up to speed and ensures that both new and old infrastructure is being

properly maintained and is operating at best practice performance from an environmental perspective. Green Industries SA would seek to work with the EPA on:

- waste and recycling regulation
- identification of problematic and hazardous materials for special attention
- improved systems for handling waste and related emissions
- the waste levy and financial instruments
- State of the Environment (SOE) report as it relates to human settlements (waste and recycling performance in particular).

The EPA also collects waste levies and directs licensees regarding compliance issues.

Primary Industries and Regions SA (PIRSA)

PIRSA plays a key role in contributing to the sustainable development of South Australia's natural, industrial and community assets. PIRSA works with industry to manage resources sustainably and enhance their value chains. Green Industries SA would seek to work with PIRSA on:

- addressing waste issues arising in agriculture and horticulture
- use of composts and fertilisers derived from waste products
- developing innovative solutions for waste management in regions
- improving resource efficiency in food and related sectors
- galvanise the reputation for South Australia's clean green food from a sustainable environment.

Department of Environment, Water and Natural Resources - Premier's Climate Change Council

The Council's primary role is to provide independent advice to the Minister for Sustainability, Environment and Conservation about reducing greenhouse gas emissions and adapting to climate change. Green Industries SA would work with the Department of Environment, Water and Natural Resources on:

- contribution of recycling and remanufacturing to reducing greenhouse gas emissions
- identifying greenhouse gas emissions from certain sectors that are identified from resource efficiency audits and subsequent improvements.

SA Water

SA Water has been investigating innovation and investment for example anaerobic digestion and energy recovery with regard to organic and other wastes. There are opportunities to examine new approaches to trade wastes and other liquid wastes currently disposed to sewer. Green Industries SA would work with SA Water on:

- opportunities for increased anaerobic digestion and energy off-take with existing infrastructure
- identifying innovative solutions to blend sewage sludges with other organic and fertiliser products to be safely used on farm particularly in regional areas.

Department of Planning, Transport and Infrastructure

The Department of Planning, Transport and Infrastructure works as part of the community to deliver effective planning policy, efficient transport and social and economic infrastructure. Green Industries SA would work with the Department on:

- disaster planning for waste management
- improved solutions to recovering resources from multi-use developments
- recycling and waste infrastructure required over the next 30 years.

Renewal SA

Renewal SA ensures that residential and industrial communities both existing and those to be developed, have access to the necessary infrastructure and human services required to be fully inclusive and connected. Green Industries SA would work with Renewal SA on:

- contaminated soil remediation and soil banking
- design for improved waste and recycling outcomes.

Other Government agencies include Health and Education. As large purchasers of services and in particular waste and recycling services these organisations are uniquely placed to not only benefit from reduced cost for these services but also be catalysts for change to services.

Local Government and the Australian Government also have interests in developing industry and, in particular new green industries. Their activities will need to be taken into account and enhanced through Green Industries SA activities. The Carbon Farming Initiative, for example, will have direct linkages and potential benefits to compost producers, as well as horticulture and agriculture.

Key industry groups include:

Waste Management Association of Australia (WMAA)

The Association's SA Branch represents and advocates members' issues. South Australia's Waste Strategy recognises that Zero Waste SA's partnership with WMAA provides valuable input into decision-making processes. A continued partnership will help WMAA link the industry with Green Industries SA and support WMAA to:

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

Australian Council of Recyclers (ACOR)

The core business of ACOR is:

- engaging with governments for policies and regulations that support the recycling and resource recovery industry
- representing businesses in the supply and value chain of recycling and resource recovery
- raising the calibre of resource recovery and recycling debate in Australia in order to achieve commercial solutions for members.

SA Waste Industry Network (SAWIN)

SAWIN is a group of like-minded companies operating in the waste, recovery, recycling, treatment and disposal industry in South Australia.

Australian Organics Recycling Association Ltd

This new association has been formed resulting from the growth of the organics composting and recycling industry in Australia and the desire of processors to have independence from the waste industry.

Recyclers of SA Inc.

The role of Recyclers of SA includes:

- promotion of the law affecting the operation of collection depots, including representation in discussion and on Committees
- acquiring, preparing data, publishing or circulating material directly relating to any matters of interest to members
- keeping abreast of improvements in technology which may be adopted to improve handling efficiencies
- acting in all respects as a trade body, to guide the industry and preserve its public image.

Keep South Australia Beautiful environmental solutions (KESAB)

KESAB is South Australia's pre-eminent not for profit organisation. Founded in 1966 KESAB aims to create sustainable communities through education, action and participation. It has successfully engaged schools and volunteer groups across the state in litter reduction and recycling activities. It aims to inspire the South Australian community to restore, preserve and improve the environment through active participation in dynamic programs.

Other industry associations - resource efficiency engagement

Zero Waste SA has worked with other industry associations in aged care, the Printing Industries Association, SA Wine Industry Association, Restaurant and Catering Association, Australian Industry Group and Business SA, among others. All of these organisations have benefited their membership by hosting training, building knowledge and allowing businesses to share experiences. These initiatives have predominantly focussed on resource efficiency in their respective sectors, and cover waste, energy and water. Any new engagement by Green Industries SA will be based on the learnings from this experience and be built around economic and environmental performance indicators.

5 BUILDING ON THE SUCCESSES OF ZERO WASTE SA

In 2004 waste policy in South Australia took a profound step with the *Zero Waste SA Act 2004* and creation of the Waste to Resources Fund. The Act established Zero Waste SA with the objectives to eliminate waste or its consignment to landfill, and advance the development of resources recovery and recycling, implemented under the direction of an integrated strategy for the state.

In 2004 the waste levy ceased to be just an economic instrument designed purely to assist in internalising environmental costs into the price of landfill. Instead, it became a transparent policy instrument intended to drive a shift in practices away from landfill. This shift in policy provided a means of improving the competitive position of recycling and resources recovery technologies and practices, and stimulating high levels of landfill diversion¹³.

Zero waste is often used with the phrase 'circular economy'. The circular economy essentially is one where the by-products and wastes from one process become the inputs to another. 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 life¹⁴. The idea is not new, and is associated with a range of concepts such as cradle to cradle design and industrial ecology, which draw inspiration from biological cycles and emphasise the importance of optimising the use of resources over time¹⁵.



Figure 3 The circular economy (WRAP)

13. RWA and Associates 2014. Review of South Australia's Waste Strategy 2011-2015.

14. <http://www.wrap.org.uk/content/wrap-and-circular-economy>

15. House of Commons Environmental Audit Committee July 2014. Growing a Circular Economy: Ending the throw-away society - third report of session 2014-2015 July 2015.



Figure 4 The waste management hierarchy (Zero Waste SA 2003)

The circular economy is informed by the Waste Management Hierarchy, which is entrenched as a core principle within the *Zero Waste SA Act 2004*. The concept of a waste hierarchy is also transcribed into law across Europe, as required by the EU, gives priority to waste prevention, followed by preparing for reuse then recycling other types of recovery (including energy recovery) and last of all landfill.

Green industries fundamentally support the Green Economy and the circular economy, both part of the broader economy. They also embrace the waste hierarchy.

Zero Waste SA has successfully introduced change programs which have influenced householder behaviour, built consistent council waste collection systems, provided new infrastructure, supported innovation to solve emerging waste problems and influenced regulatory practices. It has been internationally recognised for its work.

Waste management as an environmental issue presents an opportunity to contribute to the State's economic growth

The waste management industry is an important contributor to the South Australian economy. Macro-economic analysis reveals the following¹⁶.

- gross industry turnover is estimated at \$1,020 million
- value added by the industry in 2011–12 was \$280 million, or \$504 million once multiplier effects are taken into account - equivalent to 0.58% of Gross State Product (GSP)

16. RWA and Associates 2014. Review of South Australia's Waste Strategy 2011-2015. http://www.zerowaste.sa.gov.au/upload/resource-centre/publications/waste-strategy/SA%20waste%20strategy%20review_FINAL.pdf.

- waste management services are provided directly by private sector firms and local government authorities operating within the waste management sector and also by industrial sectors that provide their own services
- contributions by these sectors to GSP are 0.38%, 0.07% and 0.13%, respectively - an implication is that local government is responsible for 12% of economic activity in this area.
- employment is estimated to be 2,900 jobs, or 3,100 when measured as full-time equivalents (FTE)
- with multiplier effects included there are an estimated 4,700 jobs in total (4,800 FTE)
- approximately 20% of this total is employment generated through local government activity.

There remains capacity for more growth in this sector, especially with investment in new infrastructure and technology aimed at solving problematic wastes and creating new products. Waste avoidance remains the 'holy grail' as it is here that the most benefits are realised. Not producing the waste in the first instance provides the best economic and environmental outcomes.



Question 1:

What mechanisms might allow Green industries SA to build strong partnerships and collaborative arrangements that reinforce and build the Green Economy?

6

SCOPE AND ROLE OF GREEN INDUSTRIES SA

'Green industries' are usually grouped into categories including renewable energy (such as wind farms, solar energy); recycling and waste reduction; cleaner production; green buildings; bio-materials; and sustainable water systems. There are several agencies already dealing with aspects of green industries in South Australia. As already stated, Green Industries SA should not seek to duplicate that activity, but add value wherever possible.

The Waste Strategy Review¹⁷ provided the following key policy and strategy themes to consider. It is intended that many of these themes will be implemented in Green Industries SA:

Resource efficiency

- water, energy, materials input efficiency
- design (including design for extended use and dismantling)
- procurement specifications
- measurement

Waste prevention

- public awareness / communication campaigns
- pilot projects
- collaboration
- measurement

Financial and economic instruments

- extended producer responsibility / product stewardship
- incentives / reward schemes
- loan schemes

Planning and investment

- waste management
- resource recovery (including waste to energy)
- remanufacturing

It is proposed that Green Industries SA limit its activities in the first instance to the following:

- building the remanufacturing sector capacity and capability to find new markets, and especially to capitalise on overseas markets
- resource efficiency assistance services (cleaner production), reducing costs for industry and government
- enabling Green Innovation and new technology - grants to local government and industry
- reporting against targets – a collection and custodianship of data.

Each of these activities is discussed below.

¹⁷. RWA and Associates 2014. Review of South Australia's Waste Strategy 2011-2015.

Building the remanufacturing sector capacity and capability to find new markets and especially to capitalise on overseas markets

The waste and recycling industries are already significant employers in the South Australian economy. Turning wastes into resources for new products is relatively mature for construction and demolition wastes, glass, some higher value plastics and organics, compared to other materials and sectors. Paper, for example, is sent interstate or more frequently overseas as a feedstock to paper mills. The economics of better waste management are encapsulated in improved bottom line and improved environmental performance of businesses.

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.

Zero Waste SA has had an interest in international developments, in some cases with other state government and industry partners, providing advice in forums and assistance to develop strategies. These experiences include a zero waste strategy developed for the United Nations and the capital of Gujarat, India (Ahmedabad), participation in a fact-finding mission to Shandong, China, and advice to UN organisations regarding recovery from the Japan Great Eastern Earthquake and tsunami.

South Australia is acknowledged as a leader in these areas and business opportunities abound as communities seek solutions to waste from traditional activities such as construction and demolition as well as growth in problematic new waste streams such as e-waste, plastics, packaging and tyres.



- **About 4 billion tonnes of waste are produced around the world each year of which scarcely one-quarter is thought to be recovered or recycled, including many secondary materials that can substitute for raw materials that are becoming increasingly scarce.**
- **The scale of sustainable waste operations has mushroomed with the emergence of worldwide markets for several secondary materials, such as scrap and paper, for which 2007 and 2008 revenues matched those for raw materials, such as steel and paper pulp.**
- **This industry for industrial, municipal, and hazardous waste is served by a range of public municipal agencies and private sector enterprises.**
- **Together with the other economic activities associated with waste, from collection to recycling, it represents a world market of some €300 billion, shared about evenly between municipal waste, and industrial and construction waste.¹⁸**

Building capacity of local remanufacturing companies, to enable them to realise the full potential of export opportunities across the region, will require significant effort over the next five years. While some companies are well versed and already export oriented, others are not.

18. Veolia 2009. From Waste to Resource - World Waste Survey 2009.

Resource efficiency assistance services (cleaner production), reducing costs for industry and governments

Enabling governments and industry to reduce their respective impacts and costs, measurably improving their environmental performance and long term sustainability should be a core activity. These interventions not only create better performing industries but also develop a skills base that is able to advise similar industries globally. Any locally developed technological solutions potentially become exportable.

Zero Waste SA's Industry Program has delivered waste, energy and water savings to businesses and government operations. Green Industries SA will need to focus on specific areas of high return for key industries, and on programs that can be used to enable many companies and influence across value chains.



A survey of 24 organisations participating in Zero Waste SA's Industry program has shown that over \$1.3 million per year of ongoing savings has been achieved with an average payback on investment of less than two years.

- **From Zero Waste SA's investment of about \$320,000, the private sector invested \$1.9 million to implement sustainable resource management measures.**
- **Over 8,000 tonnes of solid waste was diverted from landfill and carbon emissions were reduced by 8,435 tonnes per year.**
- **For every dollar invested by Zero Waste SA's Industry Program, there was a direct benefit of \$6.70 to the South Australian economy.**

Such interventions should focus on areas of maximum economic and environmental returns.

Improved government (including local government) procurement that rationalises waste and recycling contracts as well as procuring locally produced fit for purpose recycled or remanufactured goods is also a way that costs can be saved and local industry developed.

Enabling green innovation and new technology - assistance to government and industry

Research and development are likely to form a function within Green Industries SA to fulfil part of the innovation brief. An independent review of the Zero Waste SA Centre for Sustainable Design and Behaviour, a joint initiative of Zero Waste SA and UniSA, has provided insights as to how research can be managed to achieve the desired outcomes of the new entity.

As with the Green Economy, green innovation is potentially very broad and there is a need to focus on key areas for intervention. Such interventions might, for example, include small grants for innovative processes or technology as these relate to problematic wastes, or better processes that reduce waste in the first place.

Government grants are typically for infrastructure investment (new technology), research and development of new systems and technology, market development, or skills training. Green Industries SA will need to leverage additional funding, including funding from other government departments and the private sector to encourage entrepreneurs and innovation.

Another role of the organisation would be to introduce companies to other government partners, including local government and Australian Government (for example, innovation funding grants). Criteria for an innovation grant from Green Industries SA could cover the following considerations:

- capacity for commercialisation
- links to existing industry or potential for new industry development in South Australia
- addressing problematic waste streams for which solutions are either difficult from a scale or cost perspective, are non-existent, or which will have international commercial application.

Building capacity in the human resources and local soft infrastructure through tendering of work locally, building teaching and learning capacity at tertiary institutions, and enabling partnerships between international experts and local firms should also be an area of coordinated endeavour. These are the skills South Australia will need to build the businesses and capability that in turn supports the Green Economy.

Local government and industry have been major beneficiaries of Zero Waste SA's programs funded from the Waste to Resources Fund. However, there still remains significant infrastructure investment requirements in regional communities and replacement infrastructure for metropolitan Adelaide. These requirements need to be implemented in a coordinated and planned way through an integrated waste infrastructure plan.

Other opportunities exist to improve the capacity of green industry through the building of new infrastructure which reflects environmentally sensitive design in its build and operations, reducing waste, material and energy intensity. These projects exist in all sectors including State and Local Government as well as industry.

Zero Waste SA has enabled and facilitated sharing of knowledge and resources across councils, and promoted greater information exchange between councils. Opportunities remain for better coordinated contracting of services, saving costs and driving better outcomes, the potential to expand council services to small business precincts, and better education of residents and businesses.

State and Local Government, as major purchasers of materials, can be encouraged to also give preference to local suppliers and to materials that incorporate recycled materials in their manufacture. Examples may include not only roads but also park furniture, railings, boardwalks and retaining structures. New opportunities to use recycled material include the construction of roads using waste tyres (rubber crumb) and aggregate and sand replacements in concrete kerbing and stormwater pits. Plastics from recycled materials can be used as timber replacements in parks and gardens to boardwalks and benches.



- **Zero Waste SA support for establishing the three-bin kerbside waste collection system across metropolitan councils delivered a net benefit of \$22 million at a benefit cost ratio of 2.6.**
- **For every dollar invested, \$2.6 was returned in direct cost savings to local government.**

Reporting against targets – a collector and custodian of data

South Australia's Strategic Plan Target 67 currently states a 35% reduction in waste to landfill by 2020 from a baseline of 2002-03. South Australia has met the 2014 target of 25%, achieving nearly 27%.

The South Australian Government intends that the State Waste Strategy will continue to lead and direct the waste and recycling industry in the State.

Achievable targets form a strong incentive for change and measurement of achievement. Green Industries SA will be responsible for continuing to produce South Australia's Waste Strategy and monitor progress against it.

Data collection, analysis and reporting is therefore required to measure against the Waste Strategy targets and to measure progress against other jurisdictions (Australian and international) annually. This is managed through the Zero Waste Environment Users System (ZEUS) using data collection processes already in place with industry. New areas of investment will be required to bring the industry program data into ZEUS.

Data will also be needed to effectively evaluate programs and market interventions by Green Industries SA, for example the results of innovation grants, overseas investment to South Australia or export outcomes from the sector.

Industry and business also needs good data to be able to make informed decisions about where to prioritise investments and to be able to match end-of-life materials with markets. Waste data is also needed to model future supply and demand. Without this high quality local information there is a higher risk of market failure, as the companies solely rely on their own local experience or that of others interstate or overseas. The risk is that inappropriate technologies and investments are made, costing valuable resources and time.

Green Industries SA will be a custodian of data and information to measure the State's progress against the relevant indicators, and to guide investment opportunities and identify barriers. It is also a transparent way to be accountable to community expectations, and monitor our progress as a society towards embracing the Green Economy.

Question 2:

What should be the core scope for Green Industries SA? Is the proposed scope too narrow or too broad?

7

OTHER PROGRAMS AND INTERVENTIONS

The new agency will not be able to deliver all of the things that Zero Waste SA used to do. Priorities will need to be set given the new imperatives and constrained resources. There are several other allied programs currently funded by Zero Waste SA that may be considered important by stakeholders and that should be assessed. Some programs may remain intact or be reduced in scope, or transferred to another agency, or even ceased. Some activities may enhance our international offering (for example education skills and teaching resources), others may enhance our clean and green reputation (household and farm hazardous waste collections, litter prevention). These programs are outlined below.

Community and school education (KESAB environmental solutions)

The Wipe Out Waste (WOW) school program and the *Recycle Right*® household education program are key programs which encourage and reinforce behaviour changes that address waste and recycling. These programs could encourage energy and water conservation.

The WOW program educates school staff and students about waste in an engaging and hands-on 'whole of school community' way. It is a state-wide educational program delivered by KESAB environmental solutions and funded by Zero Waste SA through a service level agreement.

It encourages schools to reduce waste and increase learning about waste and resource recovery and is free and open to schools, pre-schools and kindergartens in all sectors. It has been vital in changing students' knowledge, attitudes and behaviour towards waste through education. Students are encouraged to reduce waste through a range of creative activities.



- **763 schools have participated in the Wipe Out Waste program (as at 27 June 2014).**
- **Waste audits undertaken in schools are showing that it is having long term benefit in reducing the amount of waste sent to landfill from schools.**
- **On average, for sites that have been re-audited, Wipe Out Waste schools have reduced waste going to landfill by 38% when measured by weight.**

Litter (KESAB environmental solutions)

Litter education, data collection and research is covered by a service level agreement between Zero Waste SA and KESAB environmental solutions at \$500,000 per annum. This is the main source of government funding allocated to litter in South Australia. KESAB also collects quarterly data on litter statistics. The data extends back to 1998 and the methodology used underpins the national collection of litter data across Australia. KESAB is currently funded to perform the following services:

- Wipe Out Waste Schools program
- Litter Data and Research and Branded Litter Monitoring (measurement of litter quarterly)
- Community Litter, Education, Resources and Campaigns
- KESAB Sustainable Communities awards (City and Country)

KESAB also mobilises many volunteers and community support to clean up and improve the environment. Every dollar invested leverages significant good will and community effort.



- **KESAB's Litter Less education package is delivered through 16 countries internationally.**
- **KESAB's Clean Site program is now delivered nationally.**
- **Litter monitoring is showing littering is reducing over time, and expansion of Container Deposit Scheme and increasing the deposit value has reduced beverage litter even further¹⁹.**

Hazardous waste collection, destruction and recycling

Hazardous waste collection, destruction and recycling is currently funded by Zero Waste SA and operates through the Dry Creek Depot and periodic free mobile collection services held in partnership with councils. These collections reduce hazards in the home and on farms, and assist in presenting South Australia as a clean and green environment.

Zero Waste SA is also supporting the collection of light globes, including mercury-containing globes, incandescent and halogen globes through the BackLight Household Light Globe Recycling Program. This program enables householders to drop off a range of globes for recycling at Mitre 10, True Value and Banner Hardware stores, free of charge. This gives householders access to more than 60 stores across the State - 23 metropolitan stores and 39 country stores. It ensures that globes will be recycled instead of going to landfill and prevents mercury contained in some globes from harming the environment.

19. KESAB environmental solutions 2014 Annual Report



- **Since 2004, both services (mobile and Dry Creek depot) have collected more than 2,000 tonnes of unwanted hazardous waste from more than 42,000 householders and farmers state-wide.**
- **To date, the program has assisted the collection of more than 140,000 lamps and globes from householders for recycling, equating to more than 14,000 kilograms.**

Infrastructure grants for regional and metropolitan business and local government

While much of the core transfer station infrastructure is now built, other infrastructure such as local energy from waste opportunities remains untapped. Regional remote communities face special needs that remain largely unaddressed. Zero Waste SA is developing an infrastructure plan for South Australia which will identify needs and opportunities for investment. It is intended that much of this work will be completed by the end of 2015, providing guidance for state waste infrastructure for the next 20 plus years.



- **Eight rounds of funding have been awarded under the Regional Implementation Program since 2004 with a total Zero Waste SA funding commitment of \$7.29 million for 108 regional infrastructure projects.**
- **Seven rounds of funding have been awarded under the Metropolitan Infrastructure program since 2004 with a total Zero Waste SA funding commitment of \$6.56 million for 29 metropolitan infrastructure projects.**
- **Three individual regional waste management and recycling infrastructure investment projects delivered a net benefit of \$3.39 million, with one project delivering a benefit cost ratio of 11.5, therefore returning \$11.5 for every dollar invested to the project proponent.**

Food waste and kerbside collection of recyclables – grants to local government and industry

Whilst some 60 Councils have accessed Zero Waste SA grant funding to introduce kerbside and food waste collections systems, there remains much to do as many more metropolitan households are yet to have access to food waste services.

Commercial food waste has been the subject of a payment for new services with the waste collection industry. As these services become more widespread, it is expected that they will become profitable in their own right through economies of scale and as more business see the benefits or a separate organics waste collection service. The focus will then need to move on to quality and reducing contamination, and broadening householder and business participation.



- **The incentives offered under the kerbside and food waste collection program provide 50% of the upfront cost of a food waste system up to \$10 per household for South Australian councils to implement food waste recycling.**
- **During 2013-14, Zero Waste SA awarded a fourth round of funding totalling up to \$91,051 to three councils – the Cities of Marion, Tea Tree Gully and Prospect.**
- **This brings total State Government investment since 2003 to \$5.3 million towards helping 60 South Australian councils deliver improved and high performing kerbside recycling services such as the three-bin system and food waste systems.**

Brands and Intellectual Property - Zero Waste SA, Recycle Right® and Share N Save

Zero Waste SA as an umbrella brand is known and used amongst businesses, householders and local government. It has strong recognition with national and international stakeholders such as with the UN.

Recycle Right® is a flagship household education recycling program and has been licensed for use by councils interstate. *Share N Save* is a new program which encourages sharing by connecting community groups involved in volunteer activities that reduce waste.

The *Recycle Right®* household education program addresses long standing issues the recycling industry has faced with householders putting incorrect items in kerbside-collected recycling bins. This campaign underpins efforts to increase householders' understanding of better recycling practices and supports South Australia's Waste Strategy 2011-2015 objective of 'maximising the useful life of materials through reuse and recycling'.

The campaign uses advertising, social media, fact sheets, a 1300 recycling hot line, education resources for schools, a template calendar and banners for councils, and workshops and site visits for council staff and elected members delivered by KESAB *environmental solutions*. Market research is used to help tailor messages, identify 'problem' areas of understanding and identify the most effective channels for communications and encourage behaviour change.

The *Share N Save* website lists 219 local groups and councils (as at July 2014) which offer free events and activities to help people save money and avoid resources being wasted. The website is promoted through social media and advertising. A partnership with News Ltd through Messenger Press and Adelaide Now has provided further promotional support.

The website is attracting international interest as very few Governments are yet investing in resources to encourage sharing in the community.

These three brands are nationally and internationally recognised and have formed the basis for cooperation to achieve defined policy outcomes.

They have built up considerable recognition and penetration in the market. Consistency is very important for maintaining the success of these programs which compete in a noisy and very busy space. It is important that Green Industries SA does not lose the recognition and connections associated with these brands.



- The *Share N Save* website has been presented with an 'Honoree Award' at the 2014 Webby Awards.
- The Webby Awards is the pre eminent global awards for the recognition of Internet Excellence. *Share N Save* was acknowledged as leading in the field of websites that focus on building communities and was selected from more than 12,000 applicants.



Question 3:

To what extent should Green Industries SA take responsibility for the delivery of education and waste services? e.g. the Wipe out Waste schools program and services such as household and farm chemicals collection. If Green Industries SA does not carry out these roles, what other organisations might do so? Which of these activities add value to the Green Economy?

8

GOVERNANCE

Green Industries SA is to be established as a statutory corporation with a skills based board that is broadly representative of key stakeholders. The board would have policy-making functions over Green Industries SA. It would have a key strategic role in overseeing the development of its business plans and South Australia's waste strategies, and for monitoring and assessing the adequacy of waste strategies and their implementation.

A small board of not more than six members, plus the chief executive officer, will be appropriate. The board should have strong economic development skills, as well as collectively skills and experience in areas including:

- environmental sustainability
- local government

- remanufacturing industry, waste management industry or waste related infrastructure development
- regional affairs
- economic, financial and risk management; and
- advocacy on environmental matters on behalf of the community.

New legislation is proposed to be developed once the early consultation phase is completed.

Given the proposed start date for Green Industries SA of 1 July 2015, governance matters will need to be clarified as soon as possible



Question 4:

What should be the skill set of a board to oversee Green Industries SA? How should the board engage with key stakeholders?

9

ASSISTING SA BUSINESSES TO ACCESS CAPITAL

Consideration may be given to how larger scale investments could be serviced, recognising the new technologies dealing with emerging waste streams and investments required to replace or significantly upgrade old systems.

Governments overseas have assisted industry in accessing capital by providing loans or underwriting loans to encourage private sector investment. For example, the Green Investment Bank (United Kingdom) has £3.8 billion of committed capital. It invests in profitable green ventures that 'crowds-in' other private sector capital with an expected rate of return of 8% per annum. Launched in 2012-13, it has invested in a variety of green projects including waste to energy, energy efficiency and wind energy. With investment to date of £1.8 billion, it has leveraged a further £5.9 billion in the past two years of operation and invested in 41 projects. Investment is the same as any other investor, it does not provide low cost finance or grants²⁰.

20. Green Investment Bank Annual Report 2014.

Any proposal would need to avoid competition with existing sources of capital and would be focussed on investment in projects that act as industry exemplars and build industry capacity. In this way, Green Industries SA would be able to support the creation of new recycling technologies. It could also utilise the Fund to assist State and Local Government capital projects and other green projects which are innovative, improve the capacity of local industry and create jobs.

Important considerations would include governance arrangements, the total pool of available funds and the actual financial instrument for supporting investment.



Question 5:

Is there a need to assist industry in accessing capital to encourage appropriate investment in the Green Economy in South Australia?

Revenue opportunities and gaining more value from the investment

There may be opportunities for the statutory functions of Green Industries SA to leverage other funding, sell intellectual property and charge fees for service delivery.

- **Ability for the organisation to commercialise its IP.** Currently not permitted under the Zero Waste SA Act, this would enable the agency to cost recover some of its investment activity or seek a return on the investment. The current Zero Waste SA Act only allows for cost recovery.

- **Enable co-commercial activities to assist with development of export markets.** In the development of export markets, many jurisdictions co-invest with others in the private sector to develop the market opportunity (whether through promotion or advertising, or introductions) so that businesses can begin the act of transacting. Green Industries SA could consider working with other agencies and the private sector to enable market development.



Question 6:

How could South Australia benefit and build a more positive export return on its investment using its knowledge and experience? How should it work with businesses to achieve this? How could the private sector best benefit from such arrangements? How can infrastructure investment help build local industry capacity and innovation that also enables greater export orientation?

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