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**[Waste Economy -
Free State Province]**

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[Investments in the waste sector can bring about significant changes in the economy of the Free State. Focus of this report therefore will be on the support structures for the management of waste, policy and legislative framework, challenges and opportunities within the sector.

This report is based on literature reviews and provides an overview of the waste sector in South Africa, with specific reference to the Free State Province.]

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1. Introduction

South Africa's waste management landscape is changing, each year as the country moves towards a more sustainable waste management model. It is estimated that South Africa's current waste economy is estimated to be worth R15 billion and provides 29,833 people with employment¹.

It is also reported that legislation has been passed to help unlock the potential R17 billion of material currently being landfilled that could be recycled².

With the official unemployment rate in Free State standing at 34,4% in the second quarter of 2017 and the expanded unemployment rate at 40,5%³, the management of waste, i.e. collecting, sorting, recycling and selling of waste may offer potential job opportunities for the unemployed. Industries as a result can also be created in the processing of waste.

2. Background information on waste management policy and legislation in South Africa

Waste management, historically, in South Africa was focused primarily on end-of-pipe technologies such as landfilling (for general and hazardous waste) and incineration (for medical waste).

This situation however has changed with the promulgation of the National Environmental Management Act (No. 107 of 1998) (NEMA), which aims to give effect to Section 24 of the Constitution – 'to secure an environment that is not harmful to the health and well-being of the people of South Africa'– and the National Environment Management: Waste Act (No. 59 of 2008) (NEM:WA), which aims to, amongst others, implement the principles of the waste hierarchy. Furthermore, waste management in South Africa has evolved to include additional requirements such as waste minimisation and recycling.

NEMA and NEM:WA are guided by integrated environmental management principles that aim to ensure negative environmental impacts are prevented, mitigated and regulated. These acts provide a range of tools and measures to monitor and manage activities that generate environmental impacts.

With the promulgation of the NEM:WA in 2008, all organs of state within South Africa were bound to achieve the objectives of the waste management hierarchy. Among other things, the NEM:WA sets out to achieve the following objectives:

- minimise the consumption of natural resources;
- avoid and minimise the generation of waste;
- reduce, re-use, recycle and recover waste;
- treat and safely dispose of waste, as a last resort.

It was important to develop a mechanism in order to achieve the objectives of the Act, hence the development of a National Waste Management Strategy in 2011. The

¹ Waste Economy: Market Intelligence Report 2017, GreenCape

² Article by Riante Naidoo on March 8, 2017 in City of Cape Town, Landfills, News, Recycling, Waste

³ Statistics SA, QLFS Q2,2017

objective was to promote the waste management hierarchy and ensure effective service delivery, whilst growing the waste economy by improving job creation and business development.

In support of the above, Government Notice No. 718 of 2009, amended by No. 921 of 2013, was promulgated to ensure that the NEM:WA objectives are achieved without causing a negative impact on the environment. This government notice provides a list of waste management activities that may have a detrimental effect on the environment and which require a waste management licence to be issued prior to undertaking the activity.⁴

3. South African regulatory framework for waste management

Waste management in South Africa is based on the principles of the White Paper on Integrated Pollution and Waste Management (IP&WM) and the National Waste Management Strategy (NWMS) published by the Department of Environmental Affairs and Tourism in 1999 and 2000 respectively and the subsequent enactment of the new National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008).

Core legislation includes:

- Constitution of South Africa (Act 108 of 1996)
- NEMA (Act 107 of 1998)
- National Policy on Pollution and Waste Management (2000)
- Municipal Systems Act (Act 32 of 2001)
- Polokwane Declaration (2001)
- Waste Management Bill (2006)
- National Waste Management Act (Act 59 of 2008)
- Waste Management By-Laws (25 October 2013)

Other related legislations:

- Environmental Conservation Act (Act 73 of 1989)
- National Water Act (Act 36 of 1998)
- National Health Act (Act 61 of 2003)

Most notable and recent legislative changes in 2016 that are expected to affect investment decisions made by potential investors and businesses in the waste sector were⁵:

- The National Pricing Strategy for Waste Management (NPSWM) was published.
- Notice was given to the paper and packaging, electrical and electronic and lighting industries in terms of the Waste Act to prepare and submit an industry waste management plan (IndWMP) for approval.
- The National Norms and Standards for the Disposal of Waste to Landfill and the landfill ban for all types of light bulbs came into effect.

⁴ Waste Economy: Market Intelligence Report 2017

⁵ Ibid

4. Funding and incentives

A range of funding solutions are either focused on or available to green technology manufacturers and service companies, as well as those who use such services. It applies to Development Finance Institutions (DFI), local public and private sector financiers and investors, and a considerable range of tax incentives.⁶

The tables (1&2) below demonstrates a wide variety of such funding solutions. It is not exhaustive, is indicative of more green-focused funds or incentives available, and provides potential leads or starting points to explore various options. Further to those below, the full range of government investment incentives can be found at www.investmentincentives.co.za.

Table 1: List of funding solutions and incentives – Waste-specific

Entity Name	Opportunity Overview	Product	Website
PET Plastic Recycling Company (PETCO)	Cat A: Dependent on PETCO requirements; no large projects needed until 2018. Small innovative projects considered. Private projects and private-public partnerships. R30m-R40m per annum. Cat B: Currently partnering with industries, but training and awareness requests are considered on an ongoing basis. See Criteria for more info; Apply as per Criteria document. Private projects and private-public partnerships; R4m per annum.	Subsidy	www.petco.co.za
Polyolefin Recycling Company (Polyco)	Invitation to recycling companies to submit proposals for funding that would be used to grow recycling production volumes and have a direct impact on the sustainable growth of the polyolefin plastics recycling industry.	Loan	www.polyco.co.za

Table 2: List of funding solutions and incentives

Entity name	Opportunity overview	Product	Website
Commercial Bank			
Investec	Power & Infrastructure Finance: Arranger and underwriter of debt for projects. Selectively develops and take equity in projects	Loan Equity	https://goo.gl/CC4JJJa
Ned bank /WWF	The Green Trust supports programmes with a strong community-based conservation focus in multiple areas, including climate change.	Grant	https://goo.gl/DMSiHA
SCF Capital Solutions	Unsecured working capital based on invoice or supply contracts. R250k - R5m is offered with interest rates of 2-3% per month.	Loan	www.scfcap.com
Development Finance Institutions			
Development Bank of South Africa	For green initiatives related to the green economy.	Loan Equity Grant	www.sagreenfund.org.za
GEF Special Climate Change Fund	Worth, ~USD350m, the fund is designed to finance activities,	Grant	https://goo.gl/IQNu2i

⁶ Waste Economy: Market Intelligence Report 2017, GreenCape

	programs and measures under the following four financing windows: Adaptation to climate change (top priority), technology transfer, mitigation in selected sectors including: energy, transport, industry, agriculture, forestry and waste management, and economic diversification.		
The African Development Bank	Development projects in the public and private sectors.	Loan	https://goo.gl/QnTCz4
Global Innovation Fund	Invests in social innovations that aim to improve the lives and opportunities of millions of people in the developing world.	Grant Equity Loan	www.globalinnovation.fund/
World Bank	World Bank Green Bonds are an opportunity to invest in climate solutions through a high-quality credit fixed income product.	Loan	https://goo.gl/RBZMGS
Government Department			
Department of Science and Technology	11D Tax Incentive: Undertaking R&D in South Africa qualifies for a 150% tax deduction of operational R&D expenditure.	Rebate	www.dst.gov.za/r-d
Department of Small Business Development	The Black Business Supplier Development Programme (BBSDP) is offered to small black-owned enterprises to improve their competitiveness and sustainability.	Grant	http://bbsdpgrants.co.za
Dti	Black Industrialist Scheme: Unlocks industrial potential through targeted and financial and non-financial interventions, described in the IPAP and other government policies.	Grant	www.thedti.gov.za
Dti	Strategic Partnership Programme (SPP) supports manufacturing and services supply capacity of suppliers with linkages to strategic partner's supply chains, industries or sectors	Grant	www.thedti.gov.za
Dti	The Capital Projects Feasibility Programme (CPFP) contributes to feasibility studies that lead to projects increasing local exports	Grant	www.thedti.gov.za
Small Enterprise Development Agency	Direct Lending where individuals apply directly to Sefa. Direct Lending: R50k - R5m with tenors of 1-5yrs.	Loan	www.seda.org.za/
South African Revenue Services	37B and 37C: Deductions regarding environmental expenditure and environmental maintenance.	Rebate	https://goo.gl/sC5Wos
Private Equity			
Business Partners	For: Businesses which actively develop, manufacture and provide goods and services by implementing measures and/or technology which reduce their adverse impact on the environment. Investment range: R500k-R30m.	Equity Loan	www.businesspartners.co.za/

The Free State Development Corporation (FDC) as a provincial development agency serves as the first point of contact for investors' needs in the Free State. At minimal or no cost to the investor, the agency assists investors in identifying opportunities and facilitates their development.

5. Barriers to waste management implementation

Waste management in South Africa faces numerous challenges and the NWMS provides a plan to address them. The main challenges are:

- A growing population and economy, which means increased volumes of waste generated. This puts pressure on waste management facilities, which are already in short supply.
- Increased complexity of waste streams because of urbanisation and industrialisation. The complexity of the waste stream directly affects the complexity of its management, which is compounded by the mixing of hazardous wastes with general waste.
- A historical backlog of waste services for, especially, urban informal areas, tribal areas and rural formal areas. Although 61%¹ of all South African households had access to kerbside domestic waste collection services in 2007, this access remains highly skewed in favour of more affluent and urban communities. Inadequate waste services lead to unpleasant living conditions and a contaminated, unhealthy environment.
- Limited understanding of the main waste flows and national waste balance because the submission of waste data is not obligatory and where available is often unreliable and contradictory.
- A policy and regulatory environment that does not actively promote the waste management hierarchy. This has limited the economic potential of the waste management sector, which has an estimated turnover of approximately R10 billion per annum². Both waste collection and the recycling industry make meaningful contributions to job creation and GDP, and they can expand further.
- Absence of a recycling infrastructure which will enable separation of waste at source and diversion of waste streams to material recovery and buy back facilities.
- Growing pressure on outdated waste management infrastructure, with declining levels of capital investment and maintenance.
- Waste management suffers from a pervasive under-pricing, which means that the costs of waste management are not fully appreciated by consumers and industry, and waste disposal is preferred over other options.
- Few waste treatment options are available and so they are more expensive than landfill costs.
- Too few adequate, compliant landfills and hazardous waste management facilities, which hinders the safe disposal of all waste streams. Although

estimates put the number of waste handling facilities at more than 20003, a significant number of these are unpermitted⁷.

The NWMS is structured around a framework of eight goals, which are to:

- promote waste minimisation, re-use, recycling and recovery of waste
- ensure the effective and efficient delivery of waste services
- grow the contribution of the waste sector to the green economy
- ensure that people are aware of the impact of waste on their health, well-being and the environment
- achieve integrated waste management planning
- ensure sound budgeting and financial management for waste services
- provide measures to remediate contaminated land and to
- establish effective compliance with and enforcement of the Waste Act.⁸

6. Potential opportunities

South Africa's recycling market is well established and primarily focuses on the recycling of packaging waste. Over half (1.9 million tonnes) of the packaging waste consumed in 2015 was collected for recycling (Packaging SA 2016). This is largely due to the initiatives implemented by the private-sector supported industry associations (in creating demand), and a very active informal waste sector (supply).

Metals are largely recycled (80%) and are driven by a global market worth R12 billion per year (Steyn 2016). Legislation requires 30% of all metal to be resold to the South African market.

According to eWASA, South Africa produces approximately 322 000 tonnes of electronic waste (e-waste) per annum. It is reported that this can generate significant growth, as an 8% increase in e-waste diversion can result in a market potential of R22 million and create 650 local jobs.⁹

Builders' rubble¹⁰ is largely landfilled in South Africa, in spite of its potential for re-use and the high financial and societal costs of landfilling. One of the biggest opportunities in the recovery, processing and application of builders' rubble lies in the uptake of material into new applications, e.g. roads. This holds prospects on the supply side for the crushing industry and on the demand side in road material for both the public and private sectors.

The economy in builders' rubble must be considered at a regional scale due to the low value of the material relative to logistics costs. Economic viability is dependent on local sourcing and processing of materials, such that the transport and processing costs do not exceed the economic value of the resources.

⁷ <https://www.environment.gov.za/documents/strategicdocuments/wastemanagement>

⁸ Ibid

⁹ Waste Economy: Market Intelligence Report 2017, GreenCape

¹⁰ The mineral component of C&DW consists of concrete, bricks – both clay and concrete blocks – and stone.

The table below illustrates the potential of South Africa's growing waste economy. This table also provides the current and potential market size and the opportunities that it offers¹¹.

Table 6: Waste economy market size and potential (2016)

Sector	Current Market Size (ZAR)	Opportunities	Potential Material Value (ZAR)	Jobs Potential
Paper	900 million (SA)	<ul style="list-style-type: none"> ■ EPR Schemes – Development of IndWMPs ■ Improvement of quality of recyclate ■ Waste to Energy 	400 million (SA)	1 100 (SA)
Plastics	960 million (SA)		3.6 billion (SA)	7 860 (SA)
Glass	200 million (SA)	<ul style="list-style-type: none"> ■ EPR Schemes – Development of IndWMPs ■ Technology interventions ■ Requires new markets for material 	290 million (SA)	118 (SA)
Metal	12 billion (SA – global prices) 5.6 billion (SA – local prices)	<ul style="list-style-type: none"> ■ Well recycled material but 70% of the material is exported ■ Legislative intervention would be required 	1.4 billion (SA)	1 800 (SA)
e-Waste	38 million (SA)	<ul style="list-style-type: none"> ■ Significant growth can occur here ■ Dismantling businesses are low cost with high employment ■ Favourable legislative changes. 	280 million (SA)	8 700 (SA)
Construction & Demolition Waste		<ul style="list-style-type: none"> ■ Valuable material for the construction sector ■ High employment ■ High waste diversion Potential 		

Source: Adapted from Waste Economy: Market Intelligence Report 2017, GreenCape

Based on the waste industry's landscape in 2016, there is much potential for the Free State province to identify and to embark on various opportunities across the value chain in the collection, sorting, processing and treatment of waste. Projects should primarily focus on recyclables (paper, glass and plastics), organics, e-Waste, and construction and demolition waste (C&DW).

¹¹ The resource value is estimated, based on the DST's (2014) commodity prices against the current industry and DEDAT (2016) reported tonnages

7. Concluding remarks

The waste landscape in the Free State does offer potential opportunities for employment creation.

Strategic and structural changes are however needed to take waste management in the province to the next level. Some specific areas that need intervention include:

- Municipalities should look into innovative and alternative ways to fund support functions in the waste sector in order to explore its true revenue potential. “This includes partnerships with the private sector, where provincial and national government play a role in the implementation of extended producer responsibility (EPR) and allow for the levies charged to assist with some of the infrastructural and operational demands,”
- Networks and links should be established with national efforts regarding waste management. The recycled waste converting industry in South Africa should be involved in supporting local initiatives and in working closely with local municipalities to fast-track waste recycling initiatives.
- Training and the development of the technical skills in the handling of the various types of waste, i.e. medical waste, e-waste and construction and demolition waste should be prioritised.
- Demand for waste should be increased to enhance the retrieval of recyclable material through, for instance the establishment of recycling companies in the Free State.

It is also expected from all the role-players (see annexure A) and stakeholders in both the public and private sectors to address the challenges with goodwill, creative thinking and innovative solutions.

Annexure A – Producer Responsibility Organisations

Name	Recycling Related Function	Tel. No.	Website and E-Mail
Plastics SA	Umbrella body for the plastics industry; promotes recovery of plastics for recycling	+27 11 314 4021	www.plasticsinfo.co.za enquiries@plafed.co.za
The Glass Recycling Company	Promotes the recovery and recycling of used glass containers	+27 11 803 0767	www.theglassrecyclingcompany.co.za info@theglassrecyclingcompany.co.za
PETCO	Promote recycling of postconsumer Polyethylene Terephthalate (PET) products	+27 86 013 7738	www.petco.co.za info@petco.co.za
Collect-a-Can	Recovery of steel beverage and other cans for recycling	+27 11 466 2939	www.collectacan.co.za info@collectacan.co.za
e-Waste Association of SA	Platform for recycling of electrical and electronic waste in South Africa	+27 31 575 8119	www.ewasa.org info@ewasa.org
National Oil Recycling Association of South Africa (NORA-SA)	Co-ordinates and facilitates the environmentally responsible recovery, collection, transportation, storage, processing and use of used lubrication oils	+27 21 448 7492	www.norasa.co.za usedoil@iafrica.com
Packaging SA	Umbrella body for the packaging industry	+27 12 001 1914	www.packagingsa.co.za Charles@packagingsa.co.za
Polystyrene Packaging Council	Collection and recycling of polystyrene packaging		www.polystyrenepackaging.co.za adri@polystyrenepackaging.co.za
POLYCO	Collection and recycling of polystyrene packaging	+27 21 531 0647	www.polyco.co.za mandy@polyco.co.za
Paper Recycling Agency of South Africa (PRASA)	Represents processors and manufacturers of recycled paper fibre		www.pamsa.co.za ursula.henneberry@pamsa.co.za
ROSE Foundation	Collection, storage and recycling of used lubricating oil	+27 21 448 7492	www.rosefoundation.org.za usedoil@iafrica.com