

# Developing the Waste Economy in the Western Cape: Industry Status Quo and Challenges

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## ABSTRACT

The landscape of solid waste management in South Africa has changed significantly since the introduction of the National Environmental Management: Waste Act No. 32 of 2008 (NEM:WA). Interventions that prioritise waste avoidance, reuse, reduction and recycling as opposed to landfilling are now required. Within the waste economy in South Africa, the recycling industry is well established, having existed for over two decades. There is potential however, to recover more materials before disposal to landfill since 90.1% of the waste is still currently landfilled in South Africa. This paper presents a broad overview of the waste economy landscape in the Western Cape and discusses the challenges faced by various players in the waste industry, based on semi-formal interviews held by the waste sector desk within GreenCape Sector Development Agency and two studies conducted by the Western Cape Government during the last financial year. These studies were (i) the Regulatory Impact Assessment (RIA) of the waste economy conducted by the Council of Scientific and Industrial Research (CSIR); and (ii) Green Investment Mapping conducted by L2i Consulting. These respectively (i) identified main barriers faced by the private sector related to the regulatory framework i.e. costs to business, and (ii) mapped the value of, and players in the waste economy in the province.

Keywords: municipal solid waste management, waste economy, alternative waste treatment, landfill diversion, waste legislation.

## 1. BACKGROUND

### 1.1 Overview of Waste Management in South Africa

South Africa generated about 108 million tons of waste in 2011, of which 59 million were general waste, 48 million were unclassified waste and the remaining one million was hazardous waste (Department of Environmental Affairs-DEA, 2012). Landfilling is the most common method of waste management in South Africa i.e. an estimated 90.1% of all general and hazardous waste generated in the country is still landfilled; and in the case of municipal solid wastes, this disposal often occurs on uncontrolled open dumpsites. The average recycling rates are still generally low with only 9.8% on average and an additional 0.1% treated thermally (DEA, 2012).

The National Environmental Management Act (NEMA, Act No 107 of 1998) forms the basis of co-operative, environmental governance in South Africa (DEA, 2011). Similarly, waste management in South Africa is governed by the National Environmental Management: Waste Act, 2008 (NEM:WA, Act 59 of 2008). The National Waste Management Strategy (NWMS, 2011) is the implementation strategy of NEM:WA, and both were developed by the DEA. NEM:WA is centered around the waste hierarchy, which prioritises interventions such as waste avoidance and the reuse, reduction, and recycling of waste (DEA, 2011). The practice of waste management in South Africa is governed by a number of regulations over and above NEM:WA, as illustrated in Figure 1. Amongst these regulations are the National Air Quality Act (Act 39 of 2004), the National Water Act (Act 36 of 1998), the Hazardous Substances Act (Act 5 of 1973), and most importantly, the South African Constitution (RSA, 1996) which provides the foundation for environmental protection regulations.

The following hierarchical structure depicts an overview of some of the applicable legislation in waste management in South Africa:

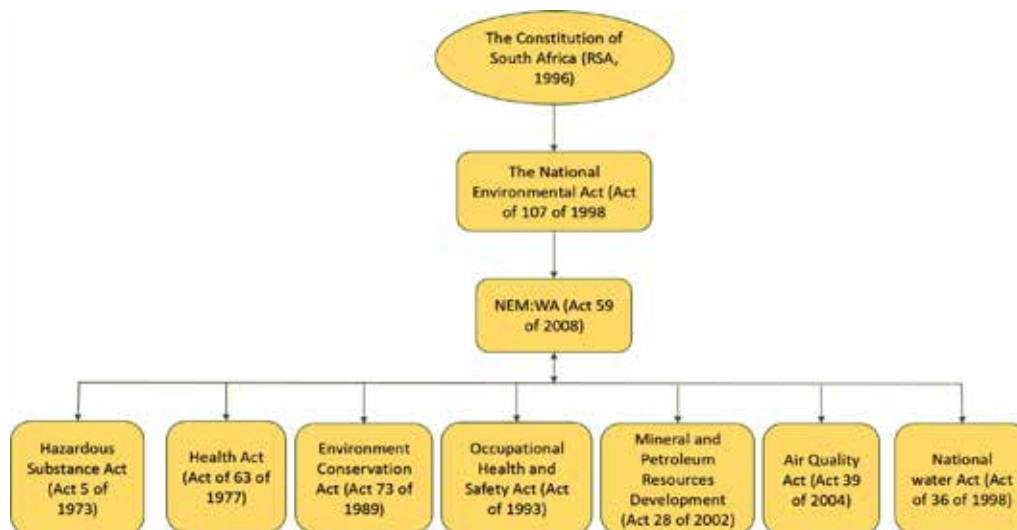


Figure 1: Applicable legislation to waste management in South Africa

## 1.2 Waste management in the Western Cape

The Western Cape generated a total of 3.8 million tons of waste in 2010. Further projections indicate that the waste generation will reach 4.7 million tons and 5.2 million tons per annum in 2015 and 2020 respectively (Department of Environmental Affairs and Development Planning-DEA&DP, 2012). Although the recycling rates are higher in the Western Cape compared to the rest of the country (i.e. ~14% versus ~10% on average), the bulk of the waste is still landfilled, showing both the scale of the challenge and the opportunity to grow further the waste economy in the province (DEADP, 2005; 2013).

## 2. PROBLEM STATEMENT AND APPROACH

The South African waste sector currently employs 29 833 people, and is worth R15,3 billion – approximately 0.51% of the country's GDP according to a study undertaken by the Department of Science and Technology (DST, 2012). This sector has been identified with the potential to grow by an additional 69 000 jobs and 3200 small and medium enterprises (SMEs) based on the NWMS (2011). The recycling industry, an important component of the SA waste economy, has existed for over two decades and is well established in the Western Cape. However, there is potential to recover more materials prior to landfill disposal, particularly organic waste (green, food, abattoir waste and various other industrial waste streams), as well as construction and demolition rubble which has limited recovery rates to date in South Africa. These waste streams can play vital role in stimulating the waste economy in the country.

GreenCape is a Sector Development Agency established by the Western Cape Government and tasked with facilitating the growth of the green economy in the province. The waste sector desk within GreenCape was established in 2011 to be a platform and point of contact between government, academia and industry to understand both the opportunities and challenges faced by the sector. The information gathered by the desk helps inform strategies (and interventions where applicable) required to support the sector. Figure 2 presents the existing structures in place to support the waste economy in the province, in addition to the pivotal role the waste licensing unit, within the Department of Environmental Affairs and Development Planning (DEA&DP), has played for many decades. The waste licensing unit supports municipalities in developing their integrated waste management plans (IWMPs), issues waste licenses for the private sector and acts as a law enforcement unit.

The information presented in this paper is also drawn from two studies (i.e. RIA and Green Investment Mapping, presented in Figure 2) undertaken by the Western Cape Government Department of Economic Development and Tourism (DED&T) through the Council for Scientific and Industrial Research (CSIR) and L2i Consulting Pty (Ltd) . The aim of these studies was to respectively (i) identify main barriers faced by the private sector around the regulatory framework for waste management , and (ii) map the value and players in the waste economy in the province.

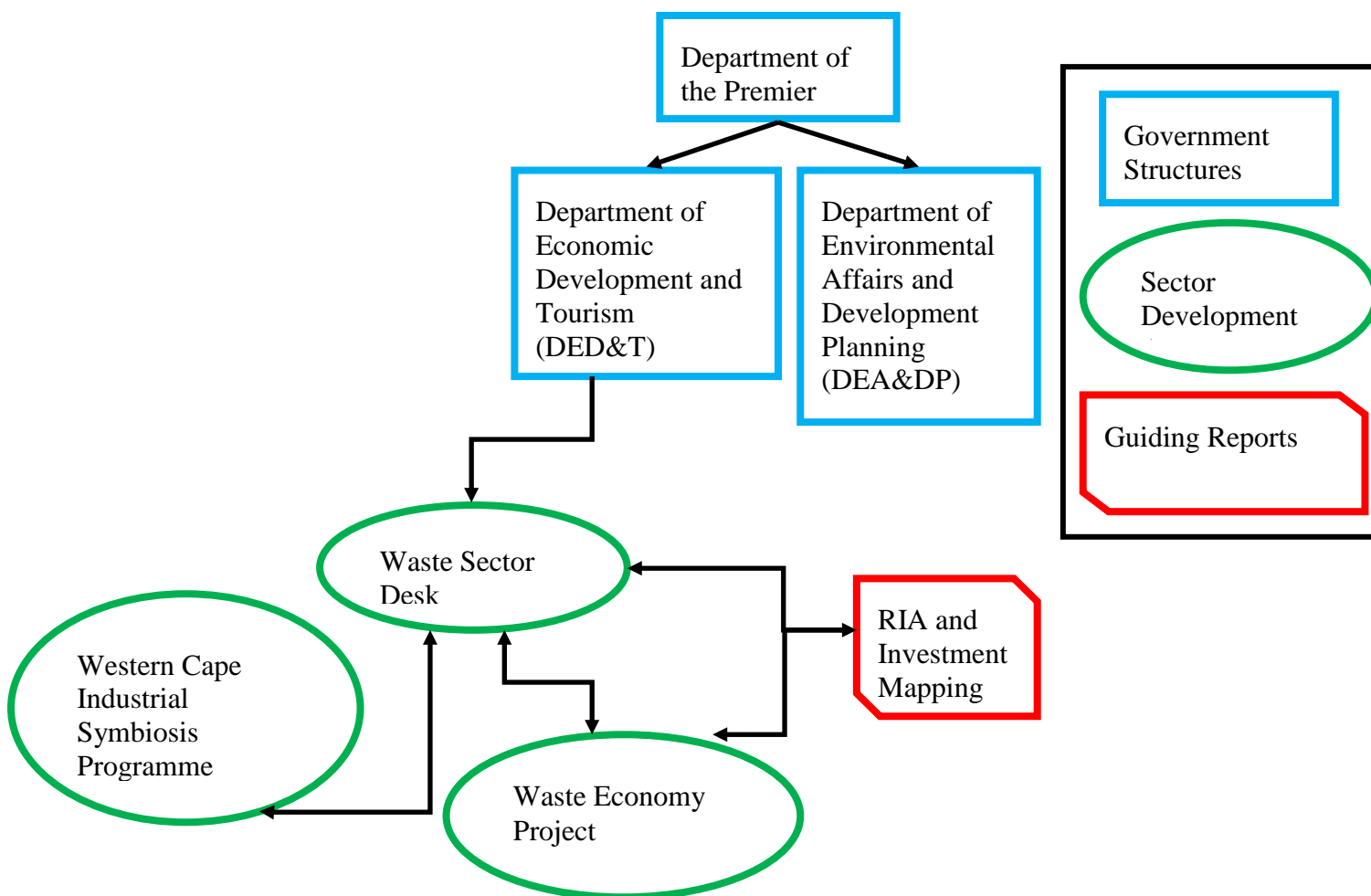


Figure 2: Support structures for the waste economy in the Western Cape.

This paper discusses the current industry challenges, based on the information gathered through the above structures/projects. These challenges, if not addressed, will hamper the potential of the waste economy in the province. A brief overview of programmes to support various parts of the waste industry is also briefly presented.

### 3. OVERVIEW OF THE WASTE ECONOMY IN THE WESTERN CAPE

The waste economy in the context of this paper is understood as any economic activity derived from waste. NEM:WA (Act 59 of 2008) defines waste as “(a) any substance, material or object, that is unwanted, rejected, abandoned, discarded or disposed of, by the holder of that substance, material or object, whether or not such substance, material or object can be re-used, recycled or recovered and includes all wastes as defined in Schedule 3 to this Act; or (b) any other substance, material or object that is not included in Schedule 3 that may be defined as a waste by the Minister by notice in the Gazette, but any waste or portion of waste, referred to in paragraphs (a) and (b), ceases to be a waste – (i) once an application for its re-use, recycling or recovery has been approved or, after such approval, once it is, or has been re-used, recycled or recovered; (ii) where approval is not required, once a waste is, or has been re-used, recycled or recovered; (iii) where the Minister has, in terms of section 74, exempted any waste or portion of waste generated by a particular process from the definition of waste; or (iv) where the Minister has, in the prescribed manner, excluded any waste stream or a portion of a waste stream from the definition of waste.”(‘recovery’ means the controlled extraction or retrieval of any substance, material or object from waste)

The private sector comprises waste management companies offering a range of services such as the collection and transport of waste, the safe disposal of waste, the treatment and/or extraction of products from waste (e.g. recovery, recycling activities) and the distribution or sale of waste-derived products and waste machinery. It also includes, amongst others, producers and suppliers of equipment for this purpose, and consultants to the industry (Department of Economic Development and Tourism-DED&T, 2014).

Consultation with industry over the last two years has highlighted that the waste economy can be grouped into two main categories i.e. (i) waste handled by municipalities (public sector), which is mostly waste collected from the residential sector and is subject to municipal procurement and governance requirements; and (ii) waste handled by the private sector, which is mainly generated from industrial and commercial operations (and includes the largest proportion of waste classified as hazardous). Although the challenges associated with developing waste projects tend to be standard for both types of waste, navigating through the municipal procurement requirements can add an additional burden to secure the feedstock required.

### 3.1 Waste economy in the Western Cape

The City of Cape Town (CoCT) generates about 70% of the waste in the Western Cape and spends between R200 – R250 million on capital expenditure and approximately R2.1 billion on operations per annum. It is estimated that about 25-30% of the operational expenditure goes to private companies as service providers and/or contractors (DED&T, 2014). Based on the above, it is safe to assume that the waste economy is worth at least R2.5 billion in the Western Cape which represents 0.9% of the province’s total GDP (i.e. R243.31 billion based on 2010 figures published by the Western Cape Investment Trade and Promotion Agency-WESGRO, 2010).

The GreenCape database of members comprises 154 private companies (excluding Government officials) registered as active in the waste sector. Amongst these, the waste desk has actively engaged with at least 60 of them through individual meetings, networking functions and/or industry workshops. The GreenCape membership list was used as a basis for the Green Investment Mapping (GIM) study. L2i (the appointed consulting firm) refined the membership list and was required to interview a 30% minimum of the population size. A total of 38 companies were therefore interviewed for the GIM study. The results presented in this section refer to that section of the industry interviewed.

Results of the survey show that recycling companies comprise the largest proportion of waste management companies in the Western Cape (Figure 3), which was expected as the recycling industry has been in existence for over two decades in South Africa. The second biggest group is waste handlers (i.e. collection and disposal), which was also expected as waste management in South Africa is still based on the traditional model of ‘sort, collect and dispose’. The remainder are consultants, composters, waste-to-energy solution providers, equipment manufacturers and sales companies as indicated in Figure 3.

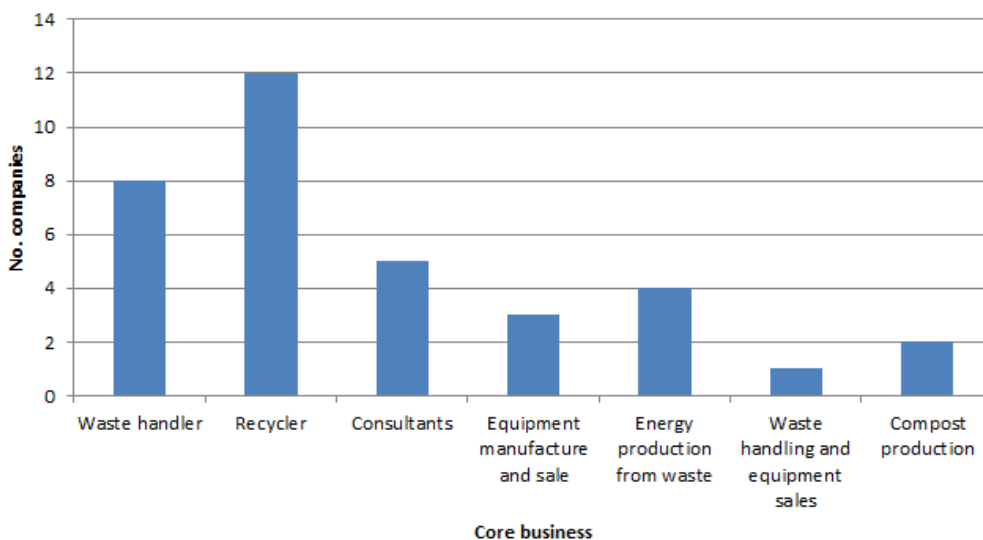


Figure 3: Core business of companies in the waste sector (Adapted from DED&T, 2014)

It is noteworthy, as seen in Figure 4 below, that the waste industry comprises many Small, Medium and Micro-sized Enterprises (SMMEs), with more SMMEs (i.e. with a turnover between R0-20 million) than large companies (i.e. with a turnover of more than R20 million per annum). The above is an indication that any strategy to support growth in the sector will have to be tailored to adequately support SMMEs with the challenges they are facing.

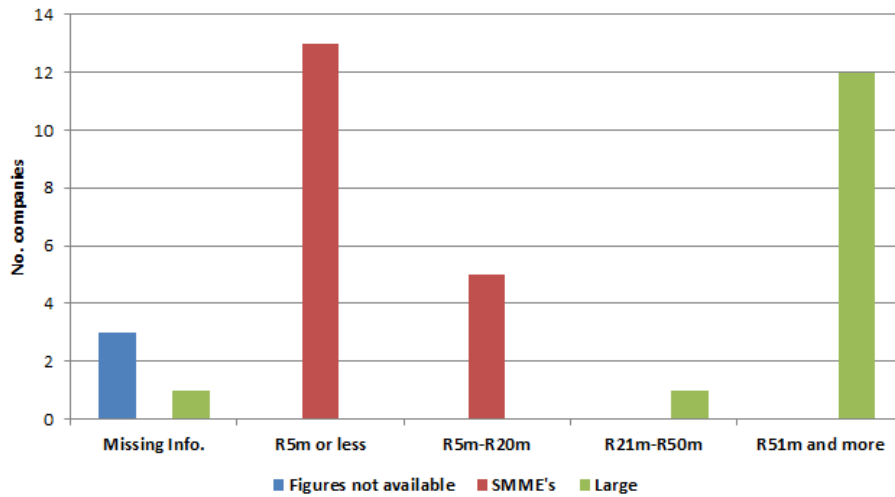


Figure 4: Turnover for 2013 by large companies and SMMEs (Adapted from DED&T, 2014)

Eight of the 12 companies with a turnover of more than R51m in the last financial year (2013), provided details of their turnover which cumulatively came to R2,949,000,000 just short of R3 billion rand. This confirms the fact that the large companies hold the largest market share in the waste sector. The above finding is aligned with results of the Waste Sector Survey conducted in 2012 by the CSIR, on behalf of the Department of Science and Technology (DST,2012).

Six of the companies interviewed were deemed 'large companies' employing more than 121 people, while 29 of the companies in the sample were SMMEs (Figure 5). The larger companies are involved in the more labour intensive waste handling sub-sector, while there are more micro players in the recycling and energy production sub sectors in this sample as illustrated by Figure 5 below.

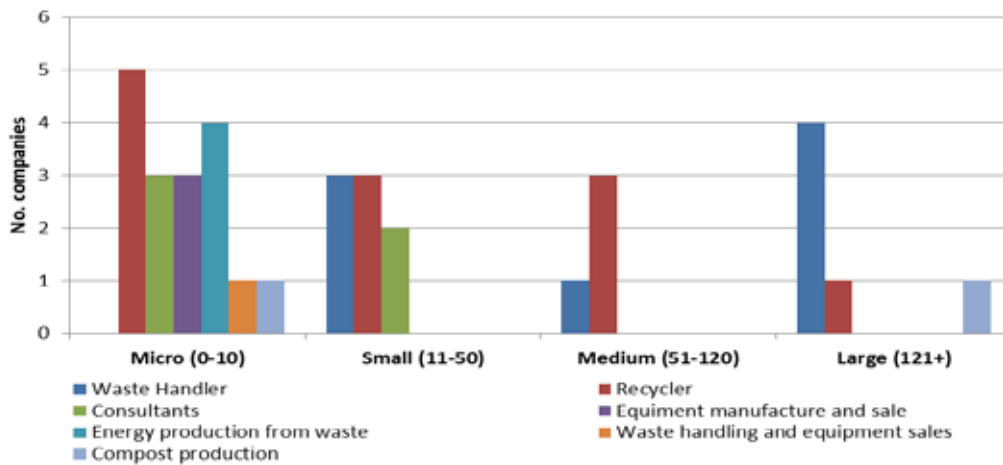


Figure 5: Company size based on number of employees by core business (adapted from DED&T, 2014).

### 3.2 Industry Challenges

This section is organised into two main categories: (i) challenges faced by municipalities, and (ii) challenges faced by industry.

#### 3.2.1 Challenges faced by municipalities

It is estimated that local authorities across the country handle a large proportion of the total waste generated in the country; hence the need to discuss the challenges they face to encourage economic activity regarding these waste streams. Local and District Municipalities in the Western Cape face numerous challenges in waste management, which are similar to those throughout the rest of the country. The key challenges include amongst others:

### 3.2.1.1 External Factors

∅ The rising cost of waste collection: this is primarily due to the rapidly increasing fuel prices. It is estimated that transportation costs between facilities can make up on average 20% of the capital costs (and up to 45% of the operational costs) of municipal solid waste management budgets across the country (National Treasury, 2011).

### 3.2.1.2 National Factors

∅ Limited availability of accurate waste information: this restricting the ability to plan adequately to meet the needs in current waste management, notwithstanding strategies for responding to predicted future challenges. The DEA has attempted to address the data gap through the South African Waste Information System (SAWIS) to which municipalities and private companies registered as waste generators are required to submit information on their waste on a public web-based platform.

∅ Scarcity of land and rising costs of landfills: the increased costs of landfills are due to the new R635 National Norms and Standards for Assessment of Waste for Landfill Disposal are forcing municipal managers to look at alternative treatment methods for waste.

∅ Poor compliance monitoring and enforcement of enabling environmental legislation and authorisations, which limits the ability of municipal officials to control unlawful activities such as illegal dumping.

### 3.2.1.3 Provincial Factors

#### ∅ Infrastructure

Limited landfill airspace and unlicensed landfill facilities: in the Western Cape, Cape Winelands District Municipality, Stellenbosch and Drakenstein have on average three years left on their existing facilities (Haider, 2014; Palm, 2014), which requires rapid intervention to divert waste from landfills and extend the landfill life. Although the planning and development of a new regional landfill site within the Swartland Local Municipality is currently underway, these can typically take 5-10 years between the planning and operational stages.

#### ∅ Finances

Limited financial resources allocated to waste management: this results in inadequate and underfunded waste management infrastructure, such as material recovery and recycling infrastructure. Moreover, the municipal integrated waste management plans (IWMPs) are not aligned with Integrated Development Plans (IDPs) used to project funding requirements over a five year cycle at municipal level. These challenges are most keenly felt in the smaller and more rural local municipalities.

Inadequate tariff settings for rates payers: The current rates are not based on full cost accounting of waste management systems and only depend on cost recovery through waste collection, disposal charges and cross-subsidization from other departments such as in sales of electricity.

#### ∅ Waste Management Practice

Limited waste avoidance and minimization practices: many municipalities are struggling to integrate waste separation at source as part of their waste management systems due to the high costs of transportation, logistics and infrastructure to implement separation at source. Separation at source has only been implemented in sections of some municipalities across the Western Cape. Also, increasing consumption patterns is placing pressure on current waste collection, transportation and disposal as the population, especially the urban population in the Western Cape metros, grows.

The bulk of waste in South Africa is still currently landfilled. These challenges, if addressed well, present themselves as direct opportunities for economic growth and the private sector. The alternative waste treatment technologies needed to reach the landfill diversion targets must therefore be able to handle both mixed waste, and the more sought after source-separated material.

## 3.2.2 Challenges faced by the waste industry

### ∅ National

Limited or no access to feedstock from municipalities: many of the alternative technologies require sizeable quantities of waste to be economically viable. These large quantities are often handled by municipalities in South Africa, and access to municipal solid waste remains a stumbling block for project developers. This is due to limited understanding of the municipal processes, as well as the administrative requirements of the procurement regulations such as the Municipal Systems Act, No 32 of 2000 (MSA) and the Municipal Finance Management Act, No 56 of 2003 (MFMA). Furthermore, if the proposed function overlaps with the municipal functions of waste removal, storage and disposal, there should be an MSA Section 78 process:

The MSA Section 78 is conducted when a municipality decides to undertake a municipal service or review existing mechanisms. In terms of 78(1) it must first assess costs if a service is to be provided internally; the effects on the environment and human health, as well as the capacity and future potential capacity of municipal resources available to perform the service internally, among other factors. Section 78(2): After taking into account S78(1), a municipality may decide on appropriate internal mechanisms to provide services, or explore possibilities of providing the service through external mechanisms. If an external mechanism is decided on, the municipality must then follow the S78(3) process of public notices and assessment of service delivery options. These processes can typically extend over a number of years. For example, the City of Cape Town (CoCT) took two years to complete their Section 78(3) process, and it is expected to take another two years once the transactional advisor (TA) is appointed before the CoCT is ready to advertise calls for proposal and project opportunities for waste management companies.

Moreover, municipalities are not allowed to issue contracts that would require municipal land and/or any other assets exceeding a financial value of R200 000 without going through a public participation process in terms of section 33 of the MFMA. This process also takes a number of years, requiring extensive legal documentation and input. Most alternative treatment and waste management projects have a payback period between 10-15 years, and require security of supply (waste) for that period. The inability to secure supply limits the projects' ability to attract investment and funding. The above scenario usually acts as a disincentive for investors in municipal projects as it is discouraging to wait for 2-3 years for the issuance of a tender (with no security around return for their investments). There needs to be a balance between promoting fair and transparent business practices at local level, and creating a suitable environment to attract investors (e.g. a provision for faster internal processes under set conditions).

If the proposed function is outside of the municipal scope, such as a waste treatment process, the Public Private Partnership (PPP) route would be explored for the project developer to gain access to municipal waste as regulated by section 120 of the MFMA. South African law defines a PPP as a contract between a public sector institution/municipality and a private party, in which the private party assumes substantial financial, technical and operational risk in the design, financing, building and operation of a project. Two types of PPPs are specifically defined: the first one is where the private party performs an institutional/municipal function, and the second one is where the private party acquires the use of state/municipal property for its own commercial purposes. A PPP may also be a hybrid of these types. The payment in any scenario involves one of three mechanisms: (i) the institution/municipality paying the private party for the delivery of the service, or (ii) the private party collecting fees or charges from users of the service, or (iii) a combination of these (National Treasury, 2014).

#### Ø Electricity and gas usage agreements and tariffs

The challenges experienced by project developers are directly linked to the administrative burden of the process to secure a generator's license and power purchase agreements, as well as the lower tariffs currently available to waste-to-energy developers. Electricity generated from waste is currently produced at least at 15-20c/kWh higher than the bulk electricity price from Eskom (Goosen, 2012). For that reason, project developers can therefore not sell directly to municipalities at a premium price for renewable energy unless permission is obtained from the regulator NERSA. Also, every biogas project is now required to register and obtain a gas user license per the Gas Act, No. 48 of 2001, which adds an additional burden to developers regardless of the project scale. The waste-to-energy industry is in its infancy compared to the relatively better established solar and wind sectors, and therefore requires support as well as a streamlined regulatory framework.

#### Ø Provincial and National Government:

The backlog and delays to secure legal authorisations: i.e. a waste license as per NEM:WA with the associated Environmental Impact Assessment (EIA), typically takes a period of 12-24 months to be issued as the waste management license depends on the issuance of the EIA. Some waste projects, using thermal treatment for example, also trigger a suite of other legislation and associated licenses such as a water use license, land use, etc. The Department of Water Affairs (DWA) is currently dealing with a two year backlog on the issuance of water use licenses. In addition, EIAs are required prior to the issuance of a water use license which automatically sets back any waste related projects. All the above can easily extend the project development stage up to five years. The lack of coordination between the different government departments (e.g. DEA, Department of Water, NERSA) as well as the delays experienced during the project development phase can result in additional and significant unplanned costs.

Ø Access to funding

According to the waste survey conducted by the DST (2012), many of the companies interviewed cited funding as the main challenge as compared to red tape and legislation which came in third and fifth place respectively. Many of the existing companies have raised money through private equity to finance themselves. State institutions such as the Industrial Development Corporation (IDC) and the Development Bank of Southern Africa (DBSA) are among the only institutions who have also made funds available for waste economy projects.

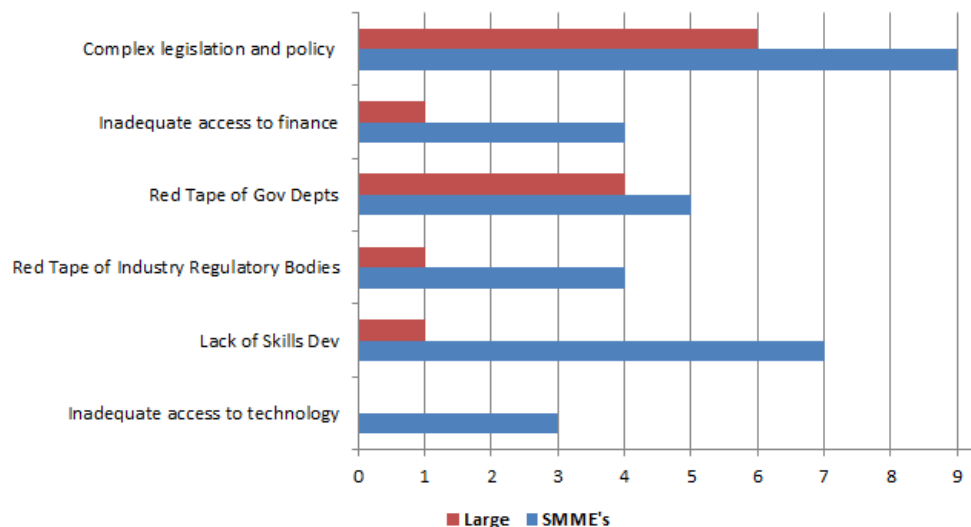


Figure 5: Challenges and constraints experienced by waste management companies (DED&T, 2014).

Access to funding for companies in the Western Cape (see Figure 5), especially early stage funding for project development, remains a significant stumbling block for project developers. The GIM survey for the Western Cape is in agreement with the DST results, indicating that navigating through the complex regulatory framework, as well as the red tape experienced when dealing with Government departments, are also amongst the biggest challenges for the private sector (both SMMEs and large companies, see Figure 5 above).

Ø Skills shortage in the waste sector

The GIM survey shows that 15 of the companies interviewed are experiencing skills shortages in almost all areas (Figure 6). Managerial, skilled and semi-skilled workers are required by 71.4% of companies over the next three years; highlighting the potential of the waste economy to create sustainable jobs. Figure 6 presents the skills requirement broken down by core business and shows that all sectors will require skills in both the management and semi-skilled area. The highest demand for skills within the sample interviewed is for waste handling and recycling, which happen to be the largest subsectors with the highest turnovers. Only three companies indicated that they will not require any skills within the next three years. In addition to hiring more personnel, respondents indicated that they would like to up-skill current staff and consultants.

Again, the above suggests that there is a great need to engage with tertiary institutions as well as learnership programmes to build this capacity in the sector. Learnerships would be the shorter term mechanism to bolster skills at the lower levels in the waste industry, while the shortage in the more technical and professional roles could be addressed over the medium term in tertiary institutions. The waste roadmap undertaken by the DST will address some of the skills shortage in the waste sector.



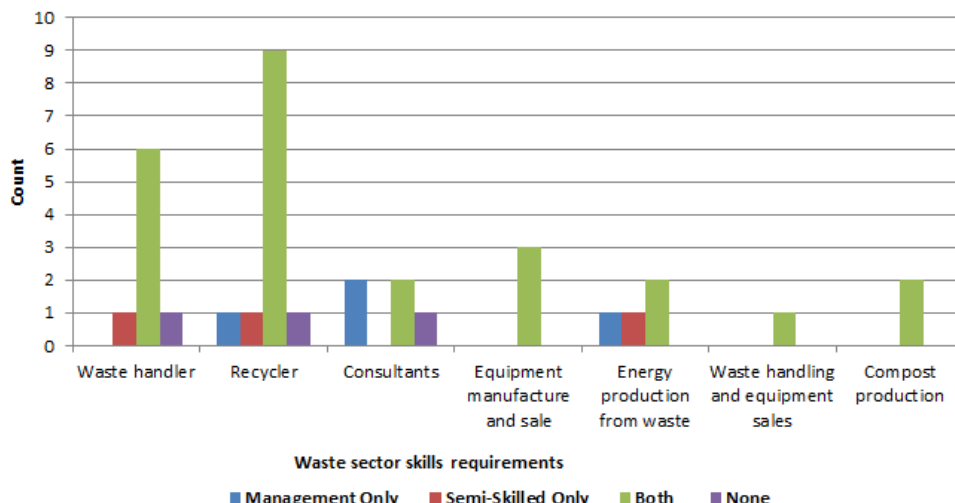


Figure 6: Skills requirement for 2014-2016 in the waste sector based on core business (Adapted from DED&T, 2014)

#### 4. INDUSTRY DEVELOPMENTS

It is evident, based on the sections above, that the waste economy in South Africa is in a transition phase from the traditional waste management approach, which relied heavily on end of pipe solutions such as landfilling, towards integrated waste management, and even beyond to resource management within a circular economy. Such a transition will move South Africa towards the waste diversion and recycling targets, as well as the job creation targets described in the NWMS. A number of positive developments in the industry also point to the fact that both Government and industry are working at addressing the challenges hampering the sector growth. These are:

##### 4.1 Amendments to NEM:WA and supporting regulations

The DEA is being progressive and has amended the regulatory framework over the last two years to streamline and reduce the burden of regulatory compliance. The following amendments have been produced:

- Ø National Environmental Management Waste Amendment Act (2014) which has changed (i) the definitions of waste (updated to now exclude all waste once recovered, reused or recycled) and recovery (now distanced from manufacture of a product, with recovery being simply the act of extracting material or another substance (including energy) from waste), (ii) pricing strategy in support of industry waste management plans to encourage waste minimization and recycling, (iii) these fees will be administered by a Waste Management Bureau housed within the DEA. The Bureau will also be responsible for monitoring industry waste plans, and overseeing waste management planning at municipal level amongst other functions – still to be promulgated.
- Ø National Environmental Management Laws Amendment Act (No. 14 of 2013) to change the definition of waste, part of the early development of the new waste definitions and other aspects encompassed in the NEM:WA Amendment Act of June 2014 described above.
- Ø R634 Waste Classification and Management Regulations, which allows for motivations to be submitted to the Minister applying for exemption of specific waste management activities from requiring a waste license and promotes treatment of hazardous waste before disposal, furthermore co-disposal and dilution of wastes before disposal will no longer be allowed. NEM:WA has also adopted the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).
- Ø R635 National Norms and Standards for Assessment of Waste for Landfill Disposal, which modified the analyses required for assessment of wastes, now including total concentration as well as total leachable concentration. This means that wastes classified as needing disposal at a H: h may be downgraded to a general waste landfill and vice versa. The costs of waste assessment are now much higher. This may have the positive impact of incentivizing landfill diversion, or simply encourage illegal dumping, especially of hazardous wastes.

- Ø R636 National Norms and Standards for Disposal of Waste to Landfill which has changed the classification of landfills, and established stricter landfill containment barriers, as well as providing for the prohibition of certain wastes to landfill within specified timescales.

The DEA's provision for the establishment of a waste management bureau, as mentioned above, will administer any funds collected through industry waste management plans, embodying extender producer responsibility (EPR), and allow for concurrence between the Minister in the Executive Council (MEC) and the DEA Minister regarding the compilation and submission of industry waste management plans amongst its functions. Although there remains much uncertainty regarding how these changes will affect the sector, the suggested amendments have the potential to stimulate and support the growth of South Africa's circular economy.

#### 4.2 Industry associations

Industry associations within the South African waste sector play an important role in recycling and diverting waste from landfill, as well as stimulating the use of secondary materials. These associations promote responsible waste management, preventing valuable materials from being disposed in landfills, by supporting the value chain for their materials to support. The bulk of their activities revolve around supporting their members through raising awareness, lobbying at national level for incentives/interventions for the growth of their respective sector (such as negotiating import duties for virgin material, etc). Industry associations hope to increasingly play an important role in developing industry waste management plans to submit to DEA on behalf of their members, as well as implementing voluntary EPR. The extent of their future activities may well be dictated by the DEA's approach to EPR to be further clarified in an implementation guide to the NEM:W Amendment Act (2014). Among the existing industry associations, the Packaging Council of South Africa (PACSA), an umbrella body encompassing industry associations for both recyclers and manufacturers of packaging materials: plastics, glass, cans and paper. The Packaging Council of South Africa (PACSA) has submitted an industry waste management plan to DEA for approval. The plan is set to promote EPR and increase the recycling targets of the packaging industry as a whole.

The Tyre Industry Waste Management Plan (REDISA) was approved by DEA and came into effect last year to stimulate the recycling of waste tyres through a levy system (i.e. R2.83/kg). The REDISA plan was approved by parliament and therefore applies to all manufacturers and importers of tyres in South Africa. The DEA is currently considering a second tyre industry waste management plan from the SA Tyre Recycling Process (SATRP) Company for approval.

The NWMS also mentions the development of other industry waste management plans from the pesticide industry, the lighting industry (focusing on compact fluorescent lamps), selected electronic waste (e-waste) streams and batteries. However, the place of plans and their rollout has been questioned over the onerous REDISA plan process, as it was challenged several times in court by some industry members. This has delayed approval of other industry waste management plans. Moreover, questions remain from municipalities, as well as provincial government and the private sector over the role of the proposed waste management bureau.

Given the large volume of waste currently being landfill in South Africa, alternative treatment technologies including those generating energy from waste, are gaining popularity in South Africa. The German Agency for International Cooperation (GIZ) established a national platform in December 2013 to support the development of the biogas industry in collaboration with the Southern Africa Biogas Industry Association (SABIA). This came as an outcome of the first National Biogas Conference that took place last year (October 2013), hosted by the Department of Energy (DoE) and SABIA since it became evident that the existing programmes to support renewable energy such as wind and solar have failed to stimulate the biogas industry. The absence of project proposals being submitted under the DoE's Renewable Energy Independent Power Producer Programme (REIPPP) to date is sterling proof of the above statement. There has been however a net increase in medium-to-large scale commercial biogas projects using commercial/industrial waste, especially to treat dairy and abattoir wastes as well as waste from the food processing industry; which indicates an appetite for the technology in South Africa. The platform aims to develop industry specific interventions, and to lobby policy makers for support. It comprises key decision makers such as the DoE, the DBSA and the IDC, DEA and industry members.

## 5. CONCLUSION

Exciting opportunities currently exist in the waste economy; this is supported by the vision of the DEA reflected in the first goal of the NWMS, which aims to enable a waste economy where reuse, reduction and recycling are prioritised. However, these opportunities need to be re-envisioned in the greater context of creating a circular economy in South Africa and can only be exploited with the support of a clear and enabling regulatory environment, as well as innovative partnerships between all three spheres of government and the private sector. Based on the current challenges experienced due to the complex municipal procurement process, it appears small scale and decentralised projects with direct supply of waste from a private party will keep growing as they require shorter project development processes. The growth in the private sector is anticipated to be faster and has already manifested in a number of applications for waste licenses for alternative treatment projects. The role of the waste team at GreenCape going forward is to understand the current dynamics of the waste industry in the Western Cape, in order to (i) identify and execute (where possible) the key interventions required to achieve a thriving waste economy in the province, and (ii) to be well-placed to assess and respond to changes in the national context in terms of legislation changes, as well as in the recyclables and energy market as part of the waste economy.

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- The National Biogas Platform
- The Southern African Biogas Industry Association (SABIA)

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