



NATIONAL PLASTICS RECYCLING SURVEY 2017



Plastics | SA
PUBLISHED JUNE 2018

EXECUTIVE SUMMARY

1.1 PLASTICS RECYCLING IN SOUTH AFRICA IN 2017

Plastics raw materials are becoming scarcer as the population increases. Humankind has to deal responsibly with its resources. Recycling - the re-use of raw materials - is becoming an essential activity.

There has been an increasing number of stories in the media recently about the growing amount of plastics waste. With the right embrace, plastics recycling can be an environmental hero.

This report provides the PlasticsSA survey results for domestic virgin plastics consumption and recovery tonnages for 2017. All materials recycled or reprocessed in South Africa are expressed as a percentage of locally manufactured plastics products.

In 2017, South Africa recycled 334 727 tons of material into raw material. Of these, only 6.3 % was exported to be recycled elsewhere.

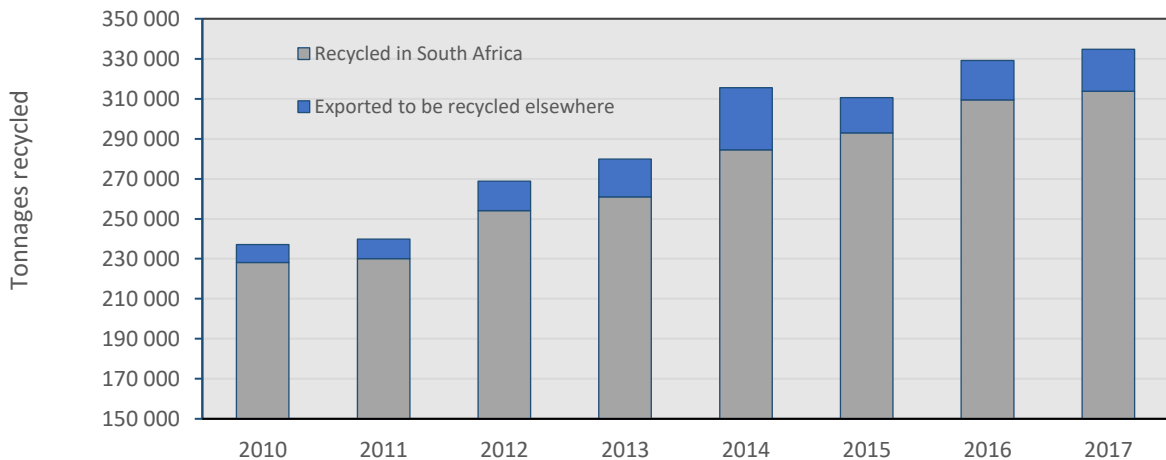


Figure 1: Plastics tonnages recycled into raw material

When compared to the recycling rate of **31.1 %** in Europe, South Africa has an input recycling rate of **43.7 %** for **all plastics**. The South African recycling industry is based on economic principles whereas in Europe, recycling is an environmental principle subscribed to by most citizens and local councils. In South Africa it needs to make money; in Europe it is the right thing to do. Landfill restrictions are in place for recyclable and recoverable waste in some of the EU-28 countries. In South Africa we only have formal waste management for 64 % of all households. According to Stats SA; 12,1 % of Metropolitan households do not have regular refuse removal as recorded in 2015.

1.2 RECYCLABLE MATERIALS

The largest quantity of recyclables, 74%, was obtained from **landfill** and other post-consumer sources. In the European community, local government and the plastics industry are all involved in getting the recyclables out of the waste stream as early as possible. In South Africa, recyclables are sourced from landfill at high cost. Landfill material is of poor quality, contaminated and therefore expensive to recycle. Process related wastage can be as high as 38 % for post-consumer films.

Recycling facilities deal with fairly large quantities on a daily basis but only one or two materials at most. Sixty percent of incoming materials was sourced as baled materials from the formal sector, collectors and waste management companies. Twelve percent originated from the same formal supply chain but consists of the larger components that were not baled. Although very critical to the value chain, only 3 % of recyclables were sourced directly from waste pickers and walk-ins. Waste pickers supply the collectors who then add some value in sorting and compacting the collected waste.

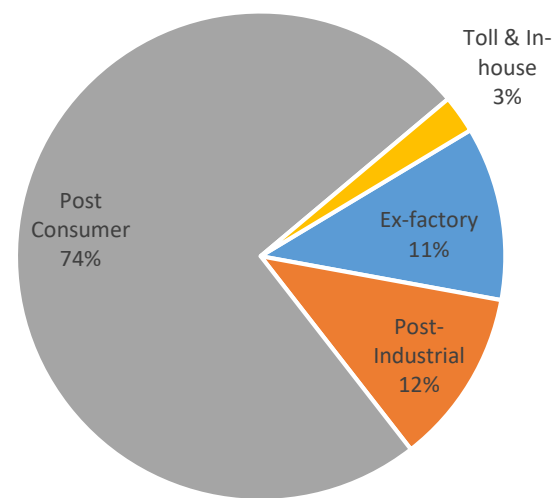


Figure 2: Source of incoming recyclable waste in 2017

Facilities have to be in place for consumers to separate recyclables from wet waste. There needs to be cooperation between local government and the recycling industry to achieve increased recycling rates and reduced tonnages to landfill. Consumers need to be educated and given the means to separate domestic waste. Sorting at a centralised facility may be manual, semi-automatic or fully automatic, as long as it is a cost effective means to deal with the volumes.

Much cleaner, sorted, compacted recyclables will be available to recyclers if separation at source is regulated in at least the major centres.

1.3 JOB CREATION

Plastics recycling sustained 5837 formal jobs in 2017 in the recycling factories. Increased tonnages per employee were achieved and reached 53.8 tons - 7% more than in 2016. It is estimated that 52 300 workers received an income through the supply chain, 700 more than in

2016. These include self-employed waste pickers and employees of smaller entrepreneurial collectors. Through the procurement of recyclables, an estimated R 448 million was injected into the economy at primary sourcing level.

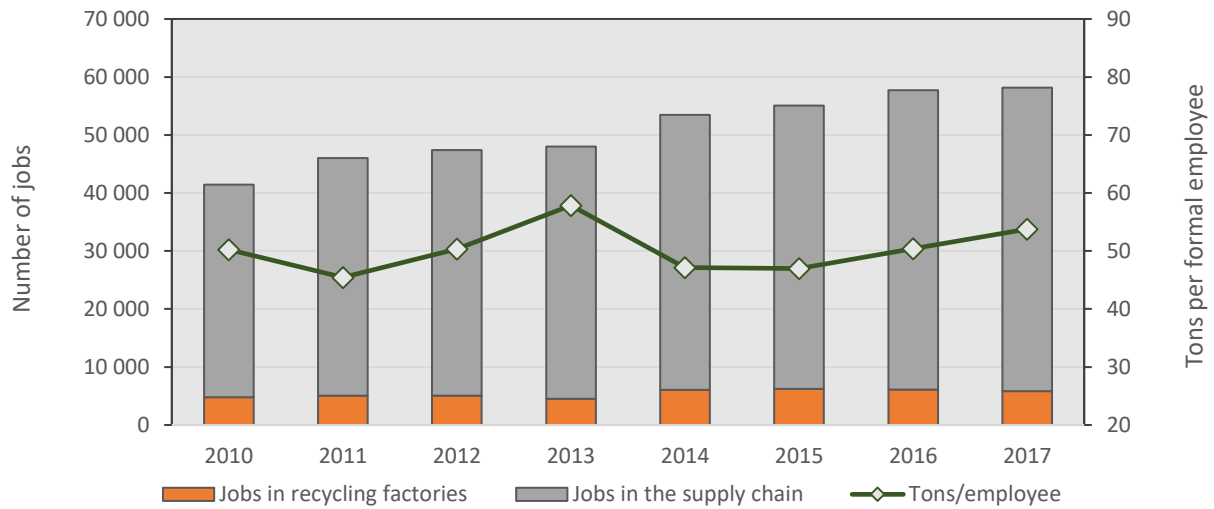


Figure 3: Employment in plastics recycling

1.4 RECYCLED POLYMERS

The most widely recycled material is still PE-LD and PE-LLD packaging films, despite the challenges experienced in the end markets for these materials in 2017. The barrier to entry is very low as most collectors can identify PE-LD films and markets are well established, although not necessarily growing.

PET beverage bottles showed a steady increase over the last 4 years. The drought in the Western Cape caused a spike in the sales of mineral water, which put more PET water bottles in the recycling stream and simultaneously created a growing demand for recycled content PET bottles to relieve the pressure on the limited virgin supply.

PE-HD bottles, drums and crates were the third largest recycled polymer in 2017 and the demand for milk bottles increased. The PP tonnages showed some growth with the recycling of PP film being included with the well-established woven tapes, packaging items and domestic ware.

Flexible PVC gumboots, hoses and cable sheathing remain steady. Redundant water- and plumbing pipes, conduit and gutters add to the rigid PVC recyclables.

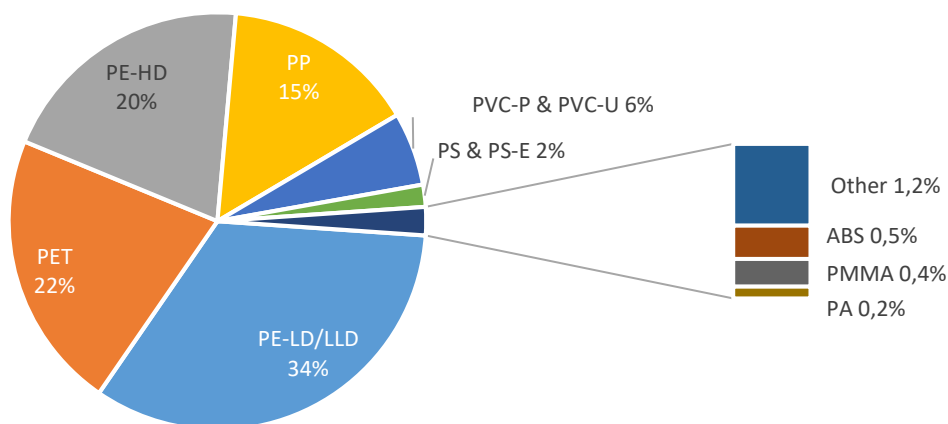


Figure 4: Plastics recycled in South Africa in 2017

1.5 END MARKETS FOR RECYCLATE

End markets for recyclate were taken for granted for many decades as the demand for recyclate exceeded the supply of recyclable incoming materials. With the increasing awareness of the importance of recycling and consumer involvement, more and more materials are made available for recycling. For the second year in a row, the recyclers had more recyclate than required by their immediate and existing customers.

Suitable end-markets are critical for the sustainability of the plastics recycling industry. Only 5.5 % of the recycled raw material was exported as raw material to plastics converters in neighboring countries.

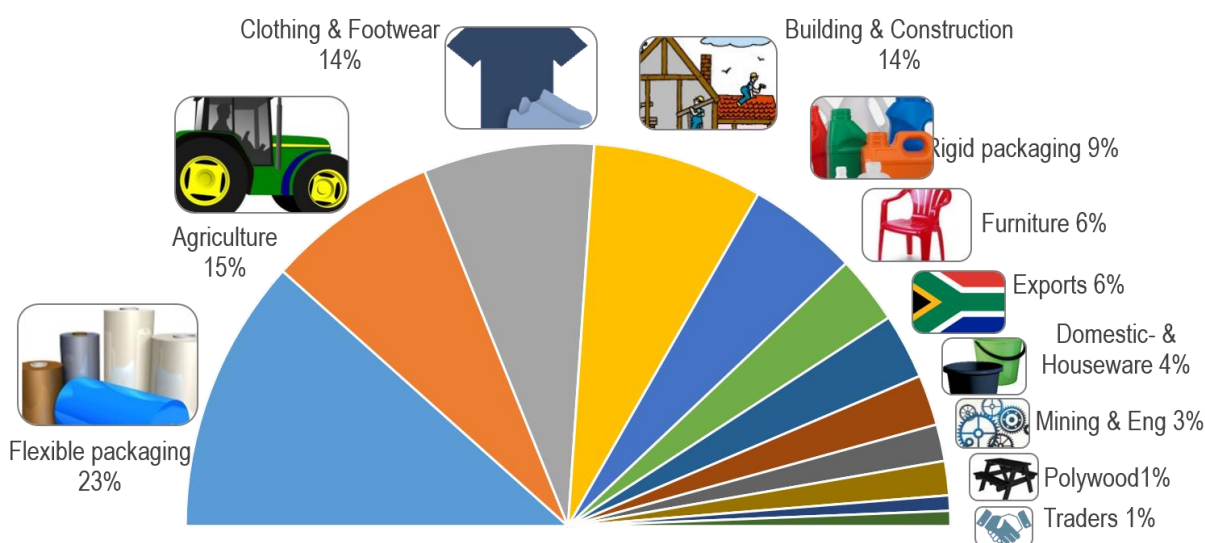


Figure 5: Domestic market applications for recycled materials in 2017

1.6 RECYCLING OPERATIONS

For this survey, more than 210 bona fide recyclers were identified in South Africa; 30 % of the recyclers convert 80 % of the tonnages. The 101 Gauteng recyclers are responsible for 60 % of the tonnages. The annual turnover of recycling operations exceeded 10 % in 2017 with many new operations opening in Gauteng. Thirty four percent of the companies are owner businesses and a further 32 % family-owned. Only 16 % have non-white ownership.

Among the recyclers surveyed in 2017, 50 % were at least granulating, washing and pelletising; 22 % were only granulating.

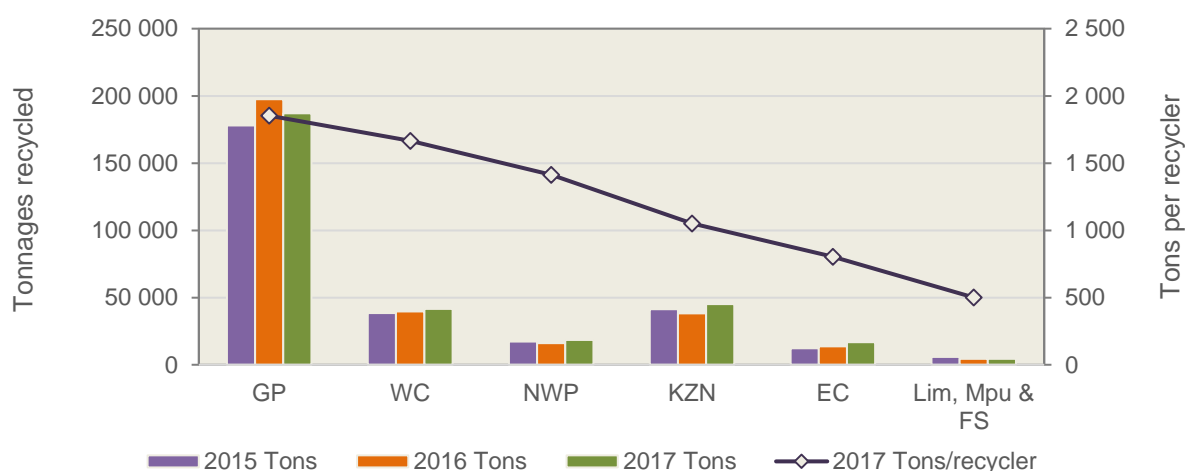


Figure 6: Provincial representation of plastics recyclers in 2017

Input costs and operational costs, increased by 2.4 % over the last 12 months. Salaries and wages make up 21 % of the total input cost of a recycling operation. The actual cost of water and electricity is 15 % of the processing costs. The capital replacement value of plant and equipment for the recyclers that granulate, wash and pelletise post-consumer materials is calculated at R8 639 per ton recycled in 2017. New investments were made to the value of R687 per ton recycled, or 8 % of the replacement value of existing plant and equipment. Using the above figures, an investment of R2 million would deliver a maximum of 230 additional tons of recyclate per annum.

1.7 RECOMMENDATIONS

For many years, plastics recycling sustained itself through strong and growing end-markets. Demand exceeded supply and the value chain sustained itself as a result. These markets are now saturated.

The relevance of recycling is becoming more prominent as the images of plastics, plastics litter in particular, and the importance of a long-term circular economy at all levels ask for end-of-life solutions for plastics packaging and plastics in general.

The momentum lies with four stakeholder groups: Consumers, Brand owners and Retailers, Innovative Solutions and the Plastics Industry. Together with the three levels of Government new end markets need to be developed, technology needs to be sourced so that recycling becomes energy efficient to consistent and reliable quality levels.

Recyclables are a resource and should be removed from the solid waste stream before reaching landfill. All stakeholders have to work together to make plastics the material of choice, to manufacture locally, process it efficiently and to manage the end-of-life products in the most efficient manner that will benefit the consumer, the industry and the planet, utilising all of the excellent characteristics of plastics.