



INDUSTRY STUDY

Plastics

March 2024

TIPS industry studies aim to provide a comprehensive overview of key trends in leading industries in South Africa. For each industry covered, working papers will be published on basic economic trends, including value added, employment, investment and market structure; trade by major product and country; impact on the environment as well as threats and opportunities arising from the climate crisis; and the implications of emerging technologies. The studies aim to provide background for policymakers and researchers, and to strengthen our understanding of current challenges and opportunities in each industry as a basis for a more strategic response.

This note provides an overview of the South African plastics industry.

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ABBREVIATIONS

AfCFTA	African Continental Free Trade Area
DFFE	Department of Forestry and Fisheries and the Environment
DSI	Department of Science and Innovation
dtic (the)	Department of Trade Industry and Competition
ERP	Extended Producer Responsibility
FET	Further Education and Training
GDP	Gross Domestic Product
IPAP	Industrial Policy Action Plan
KPI	Key Performance Indicator
MEIBC	Metal and Engineering Industries Bargaining Council
MerSETA	Manufacturing, Engineering, and Related Services Sector Education and Training Authority
NUMSA	National Union of Metalworkers of South Africa
PVC	Polyvinyl Chloride
R&D	Research and Development
SA	South Africa
SADC	Southern African Development Community
SAPPMA	Southern African Plastic Pipe Manufacturers Association
SAPRO	South African Plastics Recycling Organisation
SAVA	Southern African Vinyls Association
SETA	Sector Education and Skills Authority
SMMEs	Small, Medium and Micro Enterprises
Stats SA	Statistics South Africa
US	United States
WWF	World Wide Fund for Nature

1. INTRODUCTION

The South African plastics industry traces its roots back to the early 20th century. Initially, the industry met local demand, especially for fertilisers and explosives for the mines (Crompton, 2023). In the mid-20th century, the domestic primary plastics industry emerged through the establishment of Sasol, which uses coal as a primary input in various chemical processes, including those involved in the production of petroleum derivatives and plastics. The rapid industrialisation in subsequent decades witnessed the industry's transformation, evolving into a value chain spanning polymer manufacturing, processing, and a wide array of downstream applications from packaging materials to automotive components. In addition to meeting domestic needs, it generates substantial exports, with downstream manufactures such as packaging and piping outstripping primary plastics in recent years.

Despite its strengths, the value chain faces multifaceted challenges. In constant rand terms, growth and exports stagnated from 2010. Employment also remained essentially unchanged in the past 15 years, aside from the COVID-19 pandemic downturn in 2020.

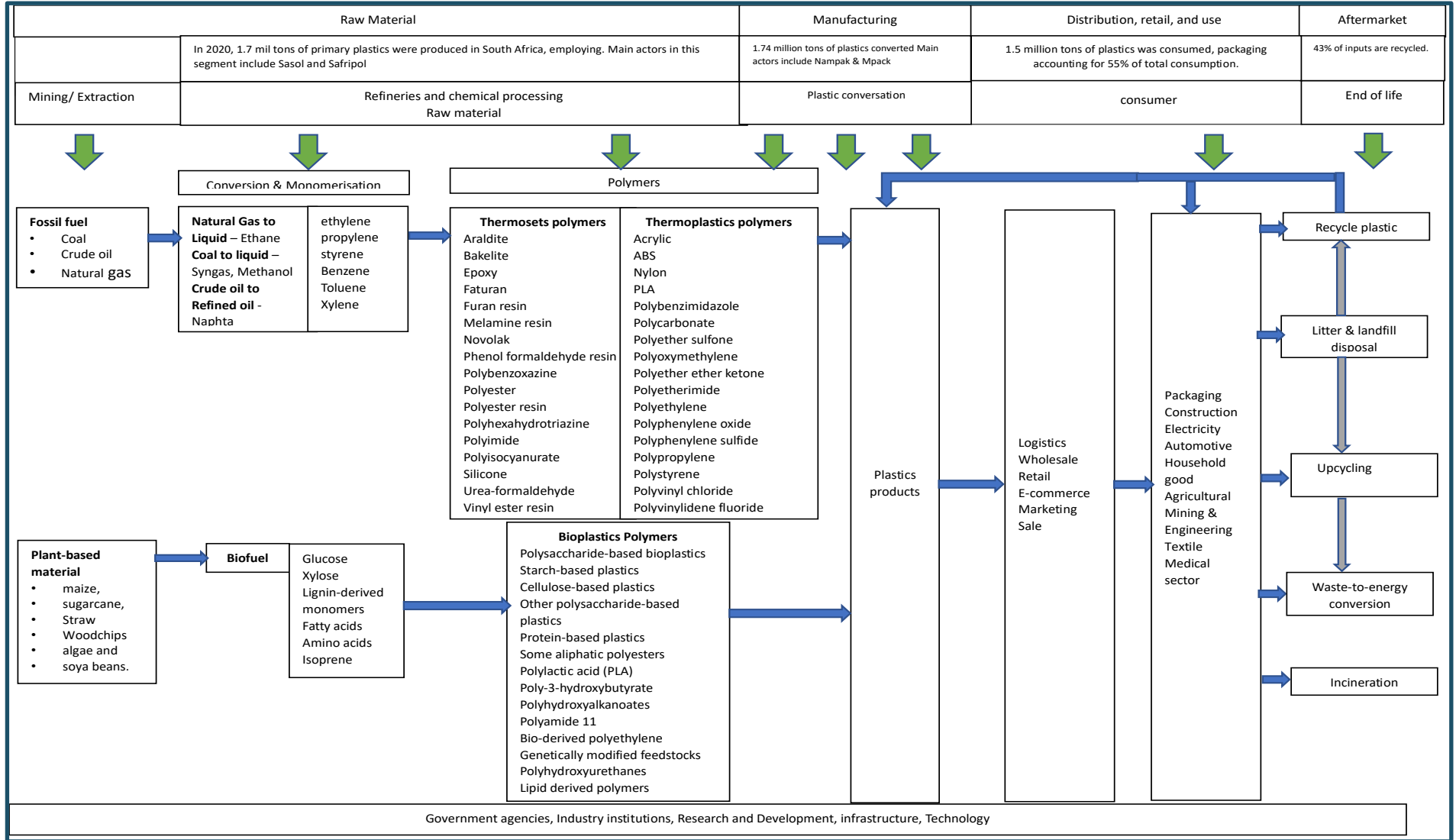
In addition, the value chain has to deal with the environmental consequences of plastic production, the effective management of plastic waste, and the alignment with broader sustainability goals. In effect, it has to balance short-run economic interests, such as the utilisation of cost-effective primary plastics, and the urgency to adopt sustainable methodologies that alleviate the adverse environmental effects of plastics throughout their lifecycle. Coupled with the necessity to adhere to global standards of responsible production, this has forced a re-examination of existing policies and practices within the industry.

This report endeavours to provide a nuanced understanding of the intricate dynamics within the South African plastics industry. By scrutinising existing outcomes, policies and practices in the primary plastics and plastics goods subsectors, the aim is to paint a picture of the domestic industry, locating it in the broader global context, and subsequently identify opportunities and challenges within the industry.

Figure 1 portrays the plastics value chain. At the base of plastic goods production are plastic resins or polymers, dominated by Sasol and Safripol in South Africa. Plastic polymers in South Africa are heavily dependent on fossil fuel feedstocks such as coal, crude oil, and natural gas. In contrast to other countries, South Africa mainly uses coal feedstock in the production of primary plastics. The production of primary plastics is heavily capital-intensive. South Africa produces different types of plastics and plastic raw materials like polyethylene, polypropylene, polyvinyl chloride (PVC), and polystyrene, intended for use in various sectors.

Outside the production of plastic polymers, the industry also entails the conversion of plastic polymers into plastic goods. Manufacturing plastic goods involves transforming plastic resins into finished products using injection moulding, extrusion, blow moulding, and thermoforming to shape plastics into packaging materials, consumer goods, automotive components, electronics, and numerous other products. This segment predominantly comprises small, medium and micro enterprises (SMMEs) and is heavily labour-intensive.

Figure 1: Plastics value chain



Source: Adapted from Maimele, 2023; and Mofo, 2020.

The South African plastics industry directly contributes R68 billion, equivalent to 2.35% of the national gross domestic product (GDP) or 20% of the manufacturing sector. The industry is home to an estimated 1800 companies, of which there are 52 prominent companies as of 2020, with the industry employing an estimated 55 000 workers as of the last quarter of 2022. Many of the businesses in the industry operate as SMMEs, specialising in plastic product manufacturing and waste plastics upcycling. Despite their significant contribution to plastic goods production, the production of primary plastics remains limited, with only two main players, including the pivotal role played by Sasol.

Sasol, a key player in the South African petrochemical industry, assumes a critical role by providing over 80% of the country's primary plastics. However, the company faced scrutiny in 2013 when South African competition authorities investigated it for "excessive pricing" of key polymers essential for everyday plastic product manufacturing. This investigation sheds light on the influence of elevated prices of primary plastics, which significantly impact overall manufacturing costs within the South African plastics industry.

South Africa's plastics industry grapples with multifaceted challenges including near-stagnation from around 2010 and a mounting trade deficit, reaching R50 billion in 2022, because of a shift towards importing primary plastics post-2012. This is further exacerbated by limited polymerisation capacity and low export of plastic goods. The industry must also deal with the environmental consequences of plastic production, the effective management of plastic waste, and the alignment with broader sustainability goals.

In the context of this background, the subsequent sections of this report are organised as follows. Section two explores the value chain's contribution to the GDP, providing insights into the economic impact. In Section three, the focus shifts to international trade, examining the industry's global interactions. The fourth section navigates through the plastics market structure. The labour market takes focus in Section five, with an in-depth analysis that sheds light on employment dynamics. The next three sections discuss the main locations, key government departments, and platforms for stakeholder engagement, respectively. Each of these sections offers a perspective on the industry's operational landscape and collaborative endeavours. Section nine explores major policy and infrastructure initiatives, highlighting key developments shaping the value chain's trajectory.

Section 10 reviews critical discussions, unpacking the major policy debates that influence the industry's direction. Section 11 contains a SWOT Analysis, offering a comprehensive evaluation of the value chain's strengths, weaknesses, opportunities, and threats.

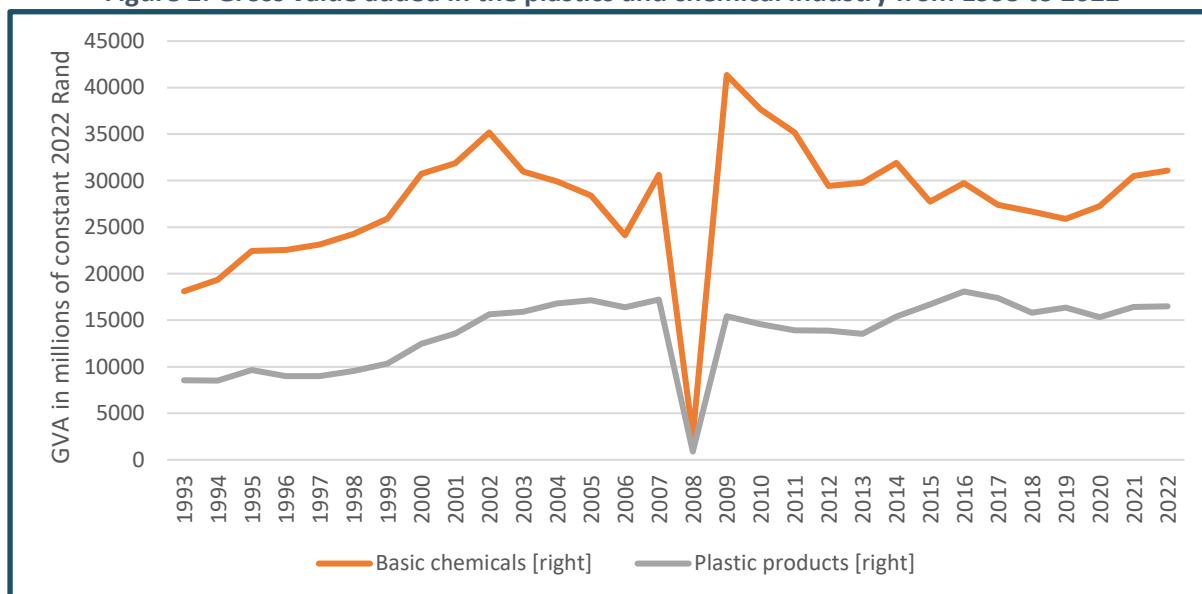
2. CONTRIBUTION TO GDP

In 2020, the plastics industry directly contributed R68 billion to the South African economy – 20% of the manufacturing GDP, with the informal sector contributing R2 billion. According to the Department of Trade Industry and Competition (the dtic), a rise of R1 billion in the GDP within the plastics supply chain translates to between R2.5 million and R3.5 million in the broader national economy.¹

As Figure 2 shows, value added climbed in both basic chemicals and plastic products in the late 1990s. Basic chemicals, however, dropped sharply in the 2000s, even before the 2008/9 Global Financial Crisis. After a strong recovery in 2009, value added in basic chemicals fell again through to 2019, then recovered somewhat. Still, in constant rand, value added in the industry was lower than in 2002. In contrast, value added in plastic products was essentially stagnant through the 2010s.

¹ Department of Trade, Industry, and Competition. Key Plastic industry data. Unpublished.

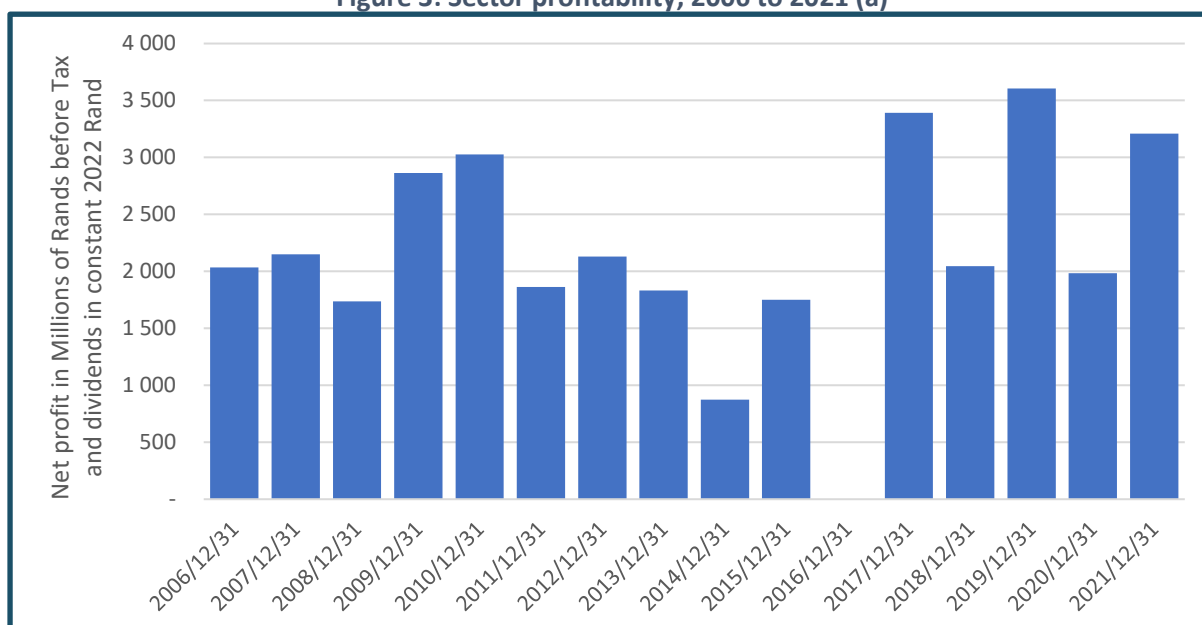
Figure 2: Gross value added in the plastics and chemical industry from 1993 to 2022



Source: Calculated from Quantec. EasyData. Standardised Industry Service. Interactive dataset. Available from www.easydata.co.za. Prices are rebased to 2022 using Stats SA’s CPI data, 1993 to 2022.

The industry’s net profits also showed an upward trend from 2006 to 2010, with a drop in 2008. They grew from R2 billion in 2006 to R3 billion by 2010. However, this upward trajectory was interrupted by a significant downturn, starting in 2011, correlating to the end of the global commodity boom, to reach its period low of R874 million in 2014. Following the decline, the industry has been characterised by notable fluctuations in net profits. According to Quantec data, by 2021, the industry’s net profit before tax and dividends amounted to R3.2 billion.

Figure 3: Sector profitability, 2006 to 2021 (a)



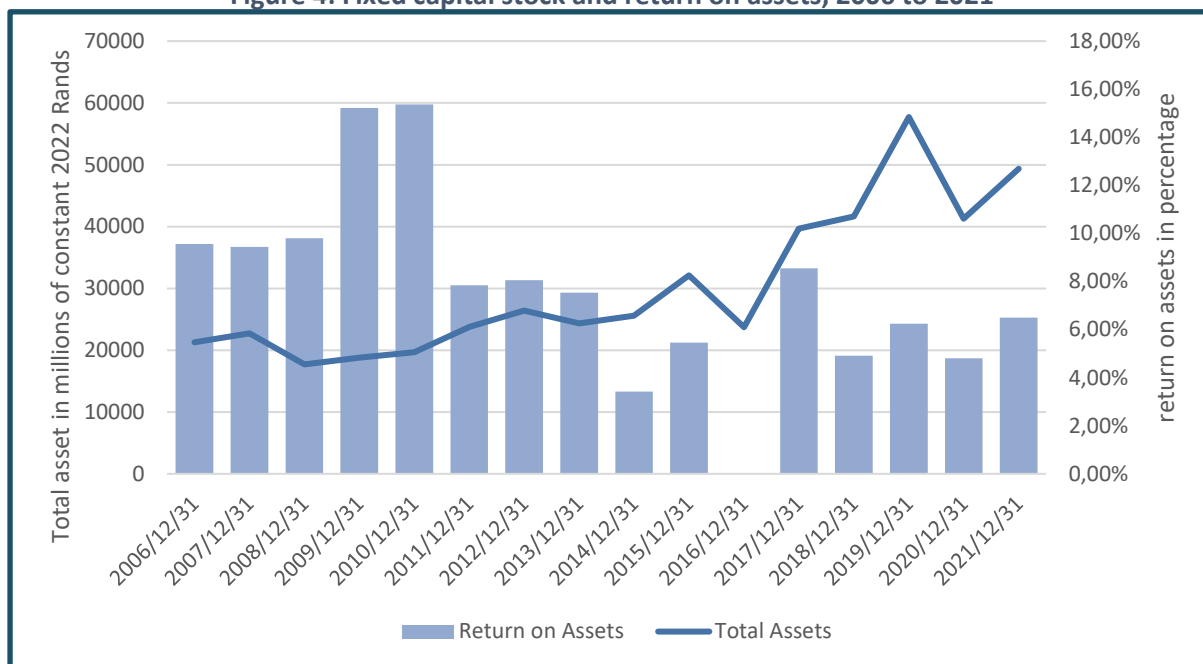
Source: Calculated from Quantec. EasyData. Standardised Industry Service. Interactive dataset. Note: (a) Data for 2016 was an unusually large anomaly and was not included in the analysis. Prices are rebased to 2022 using Stats SA’s CPI data, 1993 to 2022.

Over the observed period (2006 to 2021), the plastic industry in South Africa has witnessed growth in its total fixed assets, doubling from R23 billion in 2016 to R49 billion in 2021. The industry’s fixed assets

peaked at R57 billion in 2019, from a period low of R17 billion in constant 2008 prices. Since then, the industry has experienced only a slight fall in total fixed assets, coinciding with the global outbreak of the COVID-19 pandemic in 2020.

The overall growth in assets has been the result of growing investment in the industry, particularly in the plastics product segment driven by SMMEs. However, the industry’s return on assets after 2010 experienced a phased downward trend in the observed period. The first noticeable decline was in 2011, which coincided with the end of the commodity boom, and the second in 2014. During the commodity price boom, the return on assets was on a steady increase, reaching its peak of 15.37% in 2010. However, since then, the return on assets gradually declined to 6.5% in 2021.

Figure 4: Fixed capital stock and return on assets, 2006 to 2021



Source: Calculated from Quantec. EasyData. Standardised Industry Service. Interactive dataset. Available from www.easydata.co.za. Prices are rebased to 2022 using Stats SA’s CPI data, 1993 to 2022.

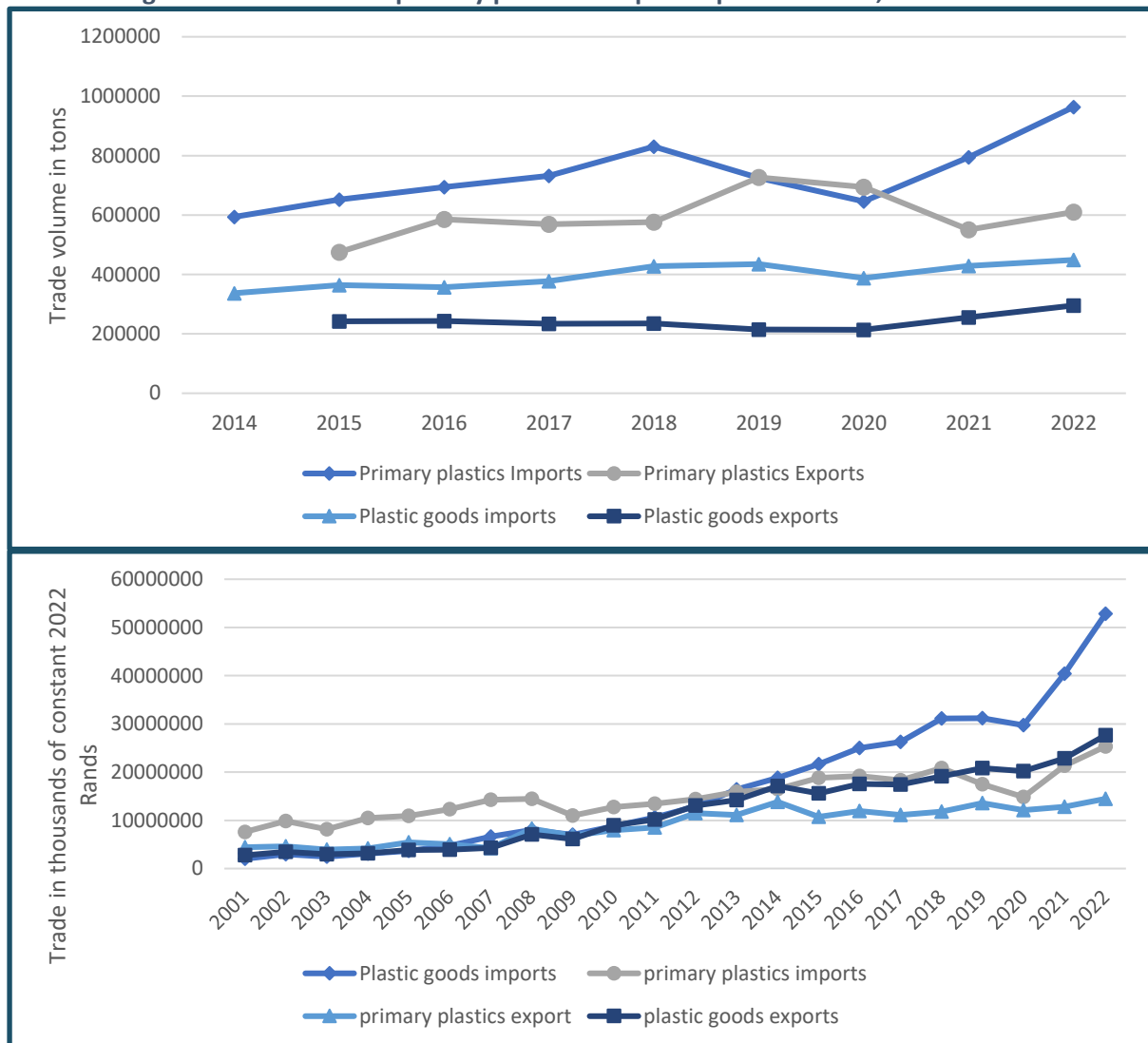
3. INTERNATIONAL TRADE

Since 2012, South Africa has witnessed a mounting trade deficit in the plastics value chain, reaching R50 billion in 2022. Before 2012, the country maintained a relatively balanced trade for plastics, with comparable growth rates for imports and exports. However, a significant shift occurred post-2012, marked by the surge in the importing of primary plastics, causing a divergence in the trade balance for these products. Compounding this issue is South Africa’s scarcity of polymers, exacerbated by the limited polymerisation capacity of Sasol. Sasol’s dated plants, coupled with an inability to keep up with growing domestic demand (Plastics SA, 2020), may be influenced by Sasol’s earlier plans to concentrate operations in the United States (US). Consequently, there has been a substantial surge in the importation of primary plastics, contributing to an expanding trade deficit.

According to Trade Map data, the import of primary plastics surged from R7.59 billion (290 000 tons) in 2001 to R25 billion (960 000 tons) in 2022. In 2022, Saudi Arabia (18.6%), China (12.8%) – surpassing the US in 2011 – and the US (10.1%) stood as the largest exporters of plastics to South Africa in the share of total plastic imports by volume. In value, the top exporters are slightly different, with China (R11 billion), Germany (R5 billion), Saudi Arabia (R4.9 billion), and the US (R 3.7 billion) dominate exports.

The composition of imports has changed substantially. Between 2001 and 2013, primary plastics imports exceeded imports of other plastics products. At the end of 2013, the imports of other plastics products became the largest import item of this product group. This period was marked by increasing domestic input cost of local primary plastics and increasing competition from China. The result was a rise of plastic products imports from R15.9 million in 2013 to 52.8 million in 2022, the largest growth rate for all plastics and plastic-related products. Imports of plastic products jumped 110% between Q2 and Q3 of 2021 and then a further 430% between Q1 and Q2 of 2022, in part due to an increase in international plastic prices.

Figure 5: South Africa's primary plastics and plastic product trade, 2001 to 2022

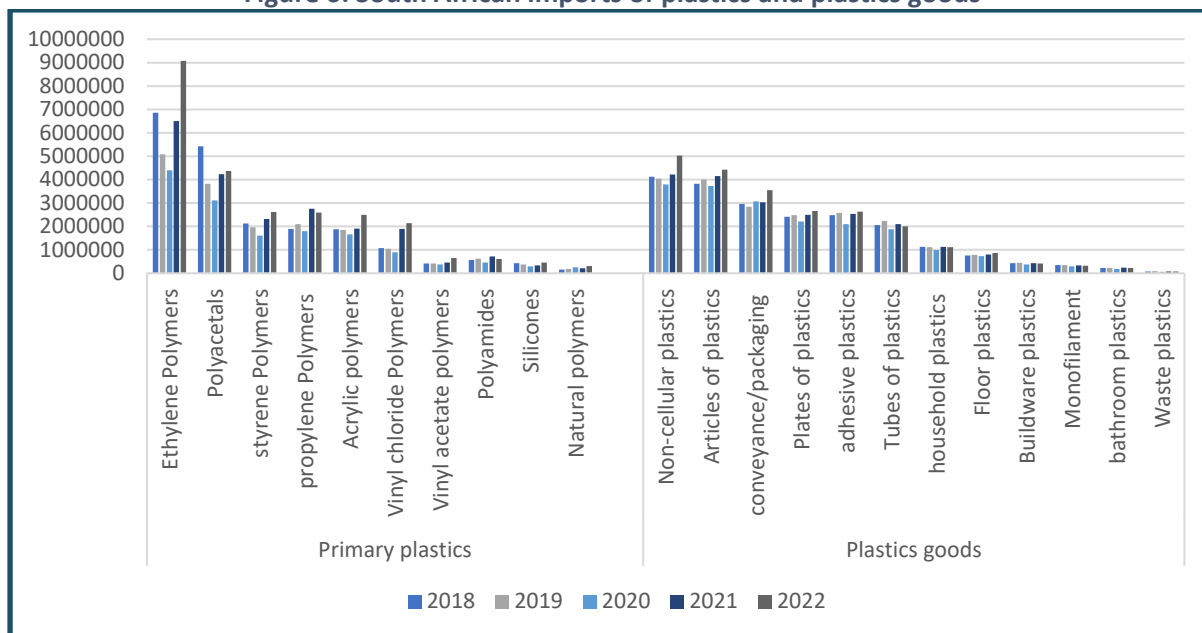


Source: ITC Trade Map data. Downloaded from <https://www.trademap.org>. Prices are rebased to 2022 using Stats SA's CPI data, 1993 to 2022.

Regarding the nature of imports, polymers of propylene or other olefins, in primary forms, particularly ethylene and polyacetals, have been the largest import of primary plastic or plastic products. South Africa's imports of ethylene fell during the COVID-19 pandemic but have recovered, and have now exceeded the pre-COVID level, reaching R9 billion in 2022. Polyacetal and epoxide resins, in contrast, while having recovered from the fall during the pandemic, have not been able to reach their pre-pandemic level. Plastic products, plates and sheets of plastic are the largest plastic product imports.

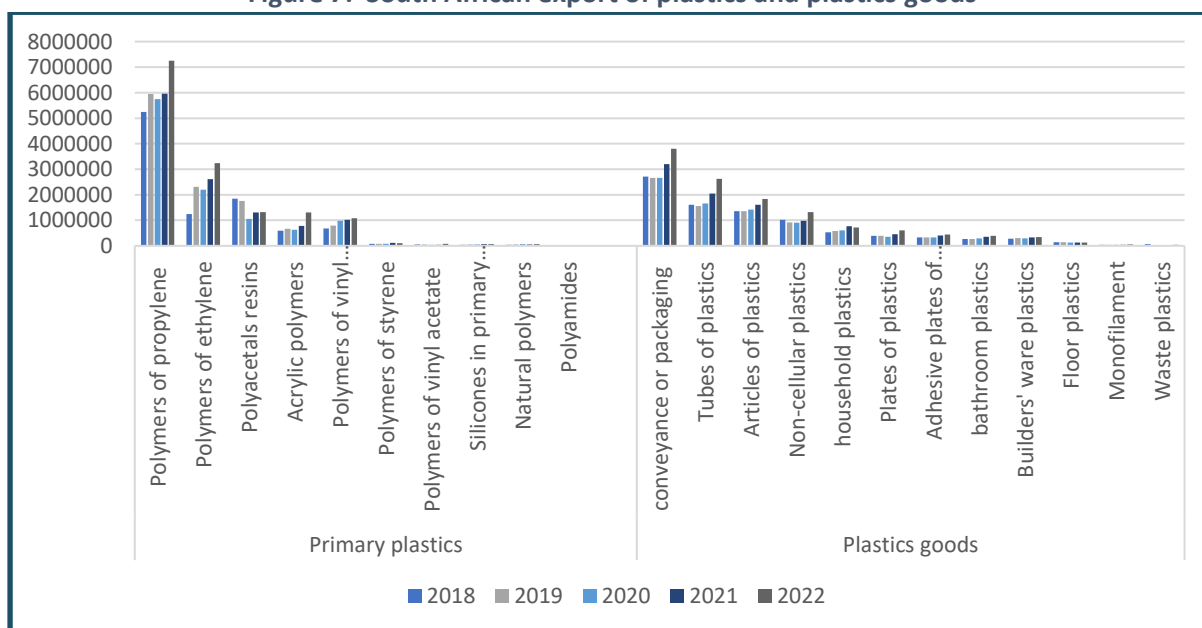
Together with artefacts of plastics, plastics imports have experienced growth exceeding pre-pandemic levels, reaching a five-year high in 2022.

Figure 6: South African imports of plastics and plastics goods



Source: ITC Trade Map data. Downloaded from <https://www.trademap.org>. Prices are rebased to 2022 using Stats SA's CPI data, 1993 to 2022.

Figure 7: South African export of plastics and plastics goods



Source: ITC Trade Map data. Downloaded from <https://www.trademap.org>. Prices are rebased to 2022 using Stats SA's CPI data, 1993 to 2022.

Polymers of propylene have since 2018 been the largest exports of South African plastics products. More than 250 000 tons (representing R27 billion) of this product group has been exported to various markets worldwide but mainly to the Southern African Development Community (SADC) and other countries within the continent. Seven of the top 10 export markets for South African plastics are African countries (including Zambia, Zimbabwe, Nigeria, Botswana, Malawi, and Namibia) while the remaining three are Portugal, Spain, and China.

4. PLASTICS MARKET STRUCTURE

The South African plastics industry exhibits a diverse market structure, comprising various players ranging from large firms to small formal and informal businesses. As of 2020, the country had 52 notable companies operating in the production of plastics, plastics products, and recycling. However, many were small and medium-sized enterprises operating in the plastic product segment of the value chain and the upcycling of waste plastics – as many as 1800 (Mofo, 2020). Of the 52 notable companies in the plastics industry, an estimated 17% are foreign owned, 10% are publicly listed companies or a subsidiary of publicly listed companies, and the rest are privately held. Most activities in the value chain are in plastic product production; only nine of the 52 companies operate in the primary plastics and plastic product segment, while the rest operate in the plastics product and the upstream segments of the value chain.

A large share of plastics companies in South Africa converts primary and recycled plastics into plastic products. According to Statistics South Africa's (Stats SA's) 2021 manufacturing financial survey, the industry generated R62 billion (13%) while the top five companies in the industry contributed R8 billion of the total industry revenue. The key players in the value chain include Nampak, Transpaco, Mpact and Polyoak Packaging.

Production of primary plastics, which is far more capital intensive than plastic products, remains limited, with only two main companies. In South Africa, Sasol is the main producer of primary plastic, producing ethylene, propylene, and other petroleum derivatives such as ethane, kerosene ethylene, kerosene, wax, and others. The other key player in the production or import of raw materials is Safripoil. Companies such as Plastomark (Pty) Ltd. and Brenntag are key importers and suppliers of primary plastics.

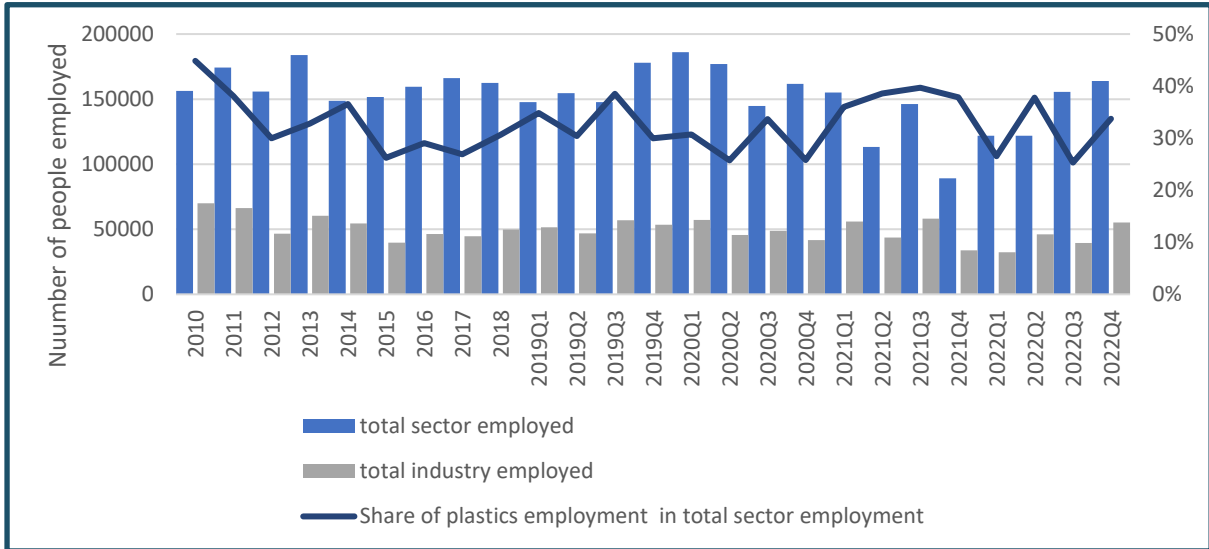
Sasol alone provides more than 80% of the country's primary plastics, making it crucial in the domestic production of primary plastics. Its involvement in the production of a variety of plastic feedstocks, such as ethylene and propylene, is essential for manufacturing various types of plastics. In 2013, the South African competition authorities investigated Sasol for “excessive pricing” of key polymers used to manufacture everyday plastic products.

5. LABOUR MARKET ANALYSIS

According to Stats SA 2022 employment data, the South African chemicals (including polymers), plastics products, and rubber manufacturing subsector employed 164 000 workers in the last quarter of 2022. Plastic products accounted for 34% of this employment, representing 55 000 workers. The 2022 Stats SA data reported that approximately 45 000 workers were directly employed in the industry in 2021. This employment figure does not include the informal circular economy, such as waste plastic pickers, who have become essential for recycling waste plastics across the country. Around 40 000 people work primarily as waste pickers, according to Makgetla (2022).

Figure 8 illustrates the plastics industry's employment data reported by Stats SA for 2010-2022. Employment in the South African plastic industry has been downward since 2010, falling from approximately 70 000 workers in 2010 to approximately 55 000 in the last quarter of 2022. The share of employment in the sector also fell from 38% to an average of 30%. While the industry has gradually rebounded, it has not been able to reach 2010 employment levels. A quarterly analysis illustrates that between the first quarter of 2019 and the third quarter of 2021, employment in the industry averaged 50 000 jobs. However, employment took a sharp downturn in the fourth quarter of 2021 and reached its lowest level in the first quarter of 2022.

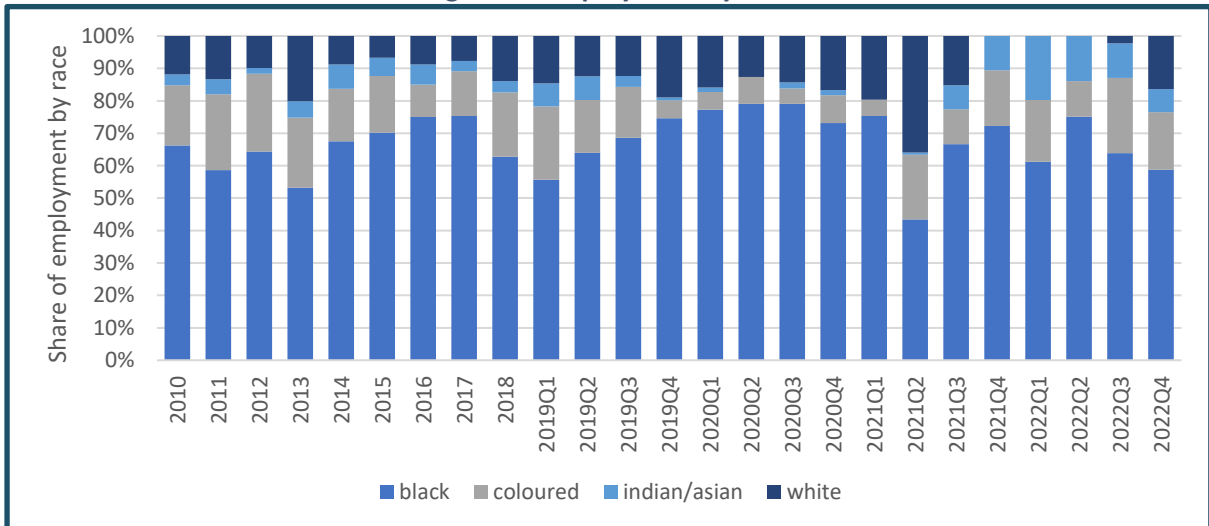
Figure 8: Employment in the plastics value chain in South Africa, 2010 to 2022



Source: Calculated from Statistics South Africa. Labour Market Dynamics. 2010 to 2022. Series on employment by industry. Electronic databases. Downloaded from www.statssa.gov.za Nesstar facility in April 2023, and Quarterly Labour Force Survey. Q1 2019 to Q4 2022. Series on employment by industry. Electronic databases. Prices are rebased to 2022 using StatsSA’s CPI data, 1993 to 2022.

Employment in the plastics and plastic product industry has, over time, been mainly representative of the national population. Much of the workforce in the industry is comprised of Black workers. Although data on White workers was not reported from the last quarter of 2021 to the second quarter of 2022, it can be inferred that they constitute a representative share of the workforce based on historical data. Lastly, there is a smaller representation of Indian and Asian workers in the industry. It is worth noting that the small sampling size of employment in the industry has resulted in the fluctuations reported for race representation in the industry's labour force.

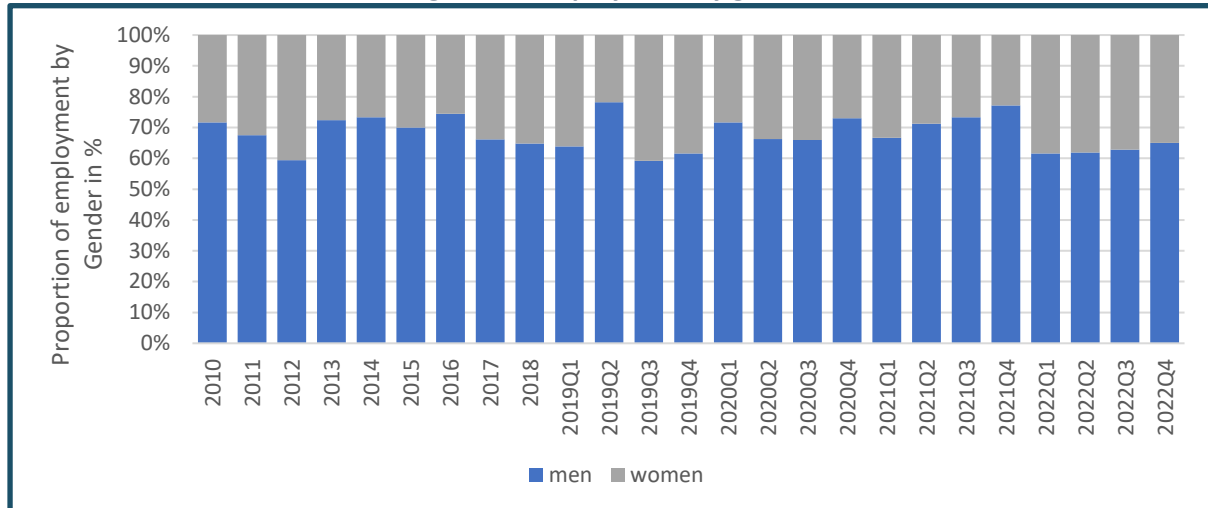
Figure 9: Employment by race



Source: Calculated from Stats SA. Labour Market Dynamics. 2010 to 2022. Series on employment by industry. Electronic databases. Downloaded www.statssa.gov.za Nesstar facility. and Quarterly Labour Force Survey. Q1 2019 to Q4 2022. Series on employment by industry. Electronic databases. Downloaded www.statssa.gov.za Nesstar facility. Note: the fluctuations in representations are largely owing to a small sample size. Where there is no representation of a specific race, there is no reported data in the recorded workforce, or it has been integrated into another race, making some races overrepresented. Also, the last two quarters of 2021 had extremely low response rates.

The South African plastic industry is male dominated, with men comprising over 64% of the industry's workforce. Similar to the employment trends in the manufacturing sector, in the last quarter of 2022, women accounted for 36% of the workforce in the plastic industry in South Africa, a slight increase from 28% in the fourth quarter of 2021. Women comprise 51% of the national population.

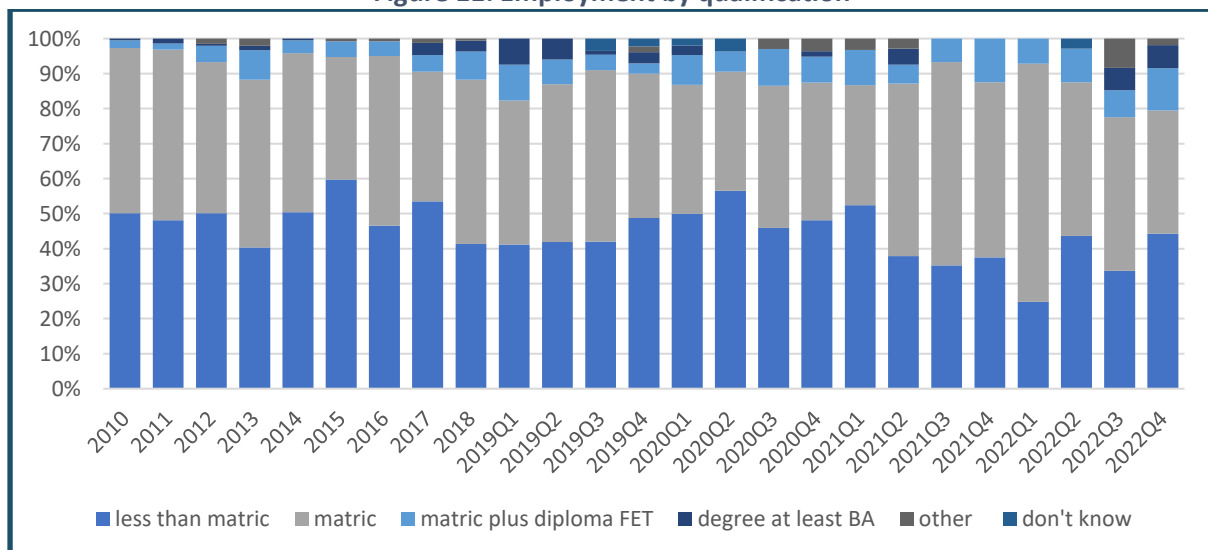
Figure 10: Employment by gender



Source: Calculated from Statistics South Africa. Labour Market Dynamics. 2010 to 2022. Series on employment by industry. Electronic databases. Downloaded from www.statssa.gov.za Nesstar facility, and Quarterly Labour Force Survey. Q1 2019 to Q4 2022. Series on employment by industry. Electronic databases. Downloaded from www.statssa.gov.za Nesstar facility.

The plastic industry's workforce mainly consists of individuals with either less than a matric certificate or a matric certificate. In 2010, workers without a matric certificate and those with a matric certificate constituted over 95% of the industry's workforce. However, there has been a gradual shift in the industry's labour requirements, with an increasing demand for skilled workers. This shift is reflected in the steady rise of workers with higher qualifications, such as a diploma from a Further Education and Training (FET) institution or a bachelor's degree. As of the fourth quarter of 2022, this segment of the workforce accounted for 20% of the total workforce in the industry. This trend has been more noticeable from the second quarter of 2021. This is in line with the general trend for employers to shift towards hiring more qualified people rather than simply replacing less qualified workers.

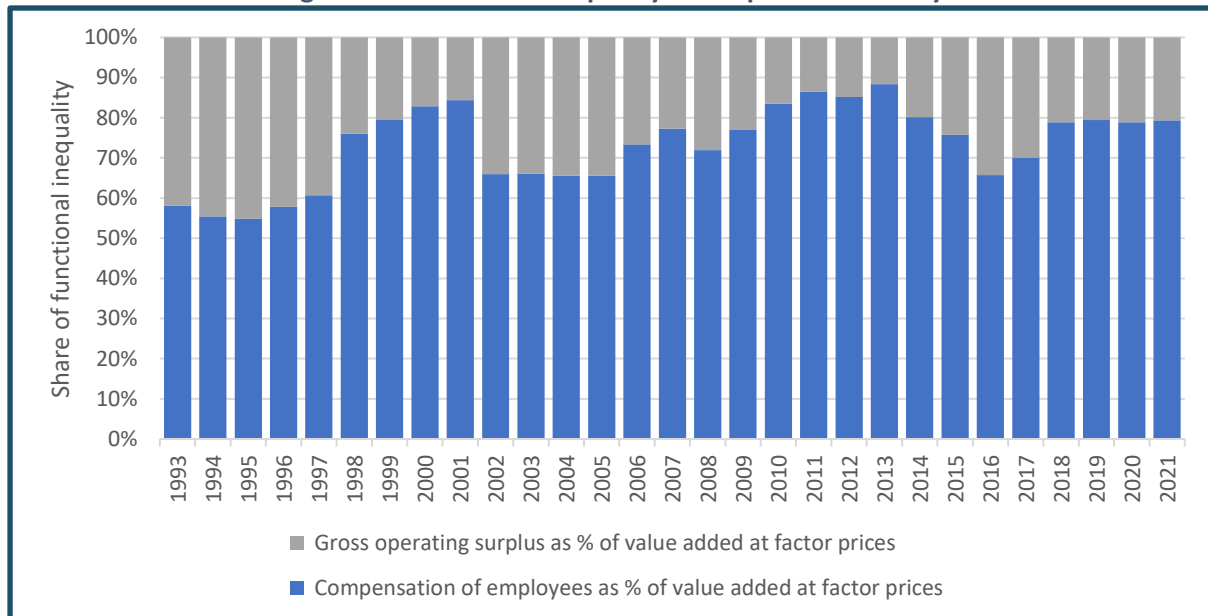
Figure 11: Employment by qualification



Source: Data was downloaded from Stats SA. Available from www.statssa.gov.za.

Figure 12 illustrates an increase in compensation for employees as a percentage of value added in the late 1990s, followed by fluctuations around 70%. That compares with a national average of around 50%. The graph indicates that share of gross operating surplus fell from over 40%² in 1993 to 20% in the early 2020s, although the figure was unstable.

Figure 12: Functional inequality in the plastics industry



Source: Calculated from Quantec. EasyData. Interactive dataset. Standardised industrial series. Accessed at www.easydata.co.za.

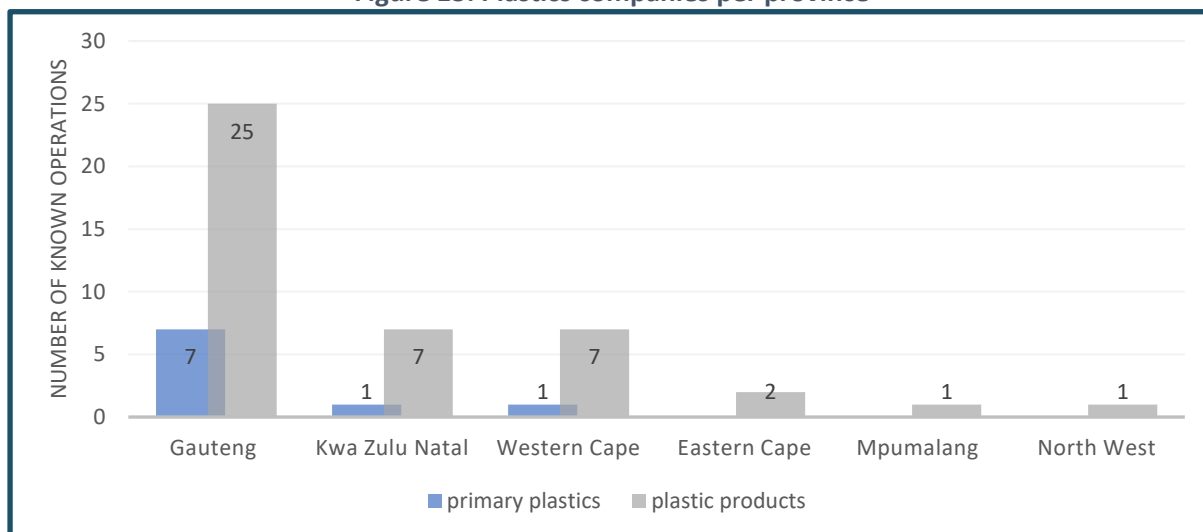
6. MAIN LOCATIONS

Plastic production in South Africa is predominantly centred in the major metropolitan areas of the country. The key regions driving the production of plastics and plastic products are Gauteng, KwaZulu-Natal, and the Western Cape (Plastics SA, 2021). Gauteng, in particular, stands out as the leading hub for headquarters and manufacturing activities of plastic and plastic goods manufacturing companies. These provinces collectively form the epicentre of South Africa’s industrial activities, hosting a diverse array of manufacturing entities.

While these provinces often accommodate the regional or corporate offices of numerous companies, it is noteworthy that the production facilities of some of these companies may not always be co-located. A prime example is Sasol, headquartered in Johannesburg, which operates plastic plants in Secunda in Mpumalanga, and Sasolburg in the Free State. Despite this geographical dispersion, Sasol is officially registered in Gauteng. This strategic separation allows companies to position themselves in proximity to raw material sources, while also maintaining close access to the offices of customers and suppliers. This dual advantage facilitates efficient supply chain management and enhances overall operational effectiveness. However, beyond these central provinces, the landscape shifts, with no noteworthy producers of primary plastics and limited manufacturing of plastic products.

² While the figure shows high gross operating surplus in the 1990s, this may be because of poor data during the time, as experience would suggest that commodity price was high and operating surplus were generally low with slow growth.

Figure 13: Plastics companies per province



Source: Data downloaded from Who Owns Whom sector reports available www.whoownswhom.co.za. Note: location may refer to head offices and/or operating plants; where there are disparities, this is highlighted.

7. KEY GOVERNMENT DEPARTMENTS

Various departments and organisations in South Africa oversee and regulate the plastic industry. These include the dtic, the Department of Forestry and Fisheries and the Environment (DFFE) and the Department of Science and Innovation (DSI). The departments are tasked with developing and implementing policies, regulations, and initiatives to address industrial capacity and environmental challenges related to plastics. The primary focus is growing the industry while promoting sustainable plastic production, consumption, and waste management practices and supporting the use of more advanced technologies.

Table 1: Key government departments and their key performance indicator

GOVERNMENT DEPARTMENT	MANDATE	WORK AREAS	KPI
Department of Trade, Industry and Competition	The dtic focuses on promoting economic growth, industrial development, and international trade. Its mandate includes supporting, regulating, and maintaining the competitiveness of local industries, including the plastic manufacturing subsector.	The dtic's Key Performance Indicators (KPIs) relevant to the plastics value chain include measures related to international trade, inward and outward investments, industrial financing, consumer and corporate regulations, industrial competitiveness, and co-ordinated economic research of the plastic industry. This is in conjunction with a joint mandate of the African Continental Free Trade Area (AfCFTA). It is important to note that these general areas of activity relate to plastics – see section 9.1. Industrial Policy Action Plans (IPAPs) for more information.	Growing domestic markets including implementation and expansion of localisation strategies in government procurement; cultivating export markets, within the AfCFTA, the European Union/US market and China; implementation of supply and demand reforms and support (i.e. assist firms to roll out investment, improve competitiveness and infrastructure as well as responsiveness to trade policies); and the greening the economy (a).

Department of Environment, Forestry, and Fisheries	DEFF is responsible for environmental protection, including waste management and pollution control. It is mandated to promote sustainable development, ensure conservation, and secure ecological sustainability.	The DEFF KPIs related to plastic waste management include increasing recycling rates, reducing plastic pollution, promoting environmentally friendly alternatives to single-use plastics, and enforcing plastic manufacturing and disposal regulations.	Climate change mitigation interventions; climate change (including environmental and sustainable development) regulation and compliance; Area of cleaned coastline; percentage of waste diverted from landfill site; waste/ circular economy masterplan development and implementation (b)
Department of Science and Innovation	Responsible for scientific research, development, and innovation; promoting sustainable solutions, technological advancements, and research.	The DSI's KPIs focus on the development of innovative plastic materials, technologies, and processes that reduce environmental impact, as well as supporting research initiatives related to plastic waste management.	Output of knowledge related to economic advancement involves rejuvenating established industries and catalysing research and development-driven industrial progress.

Source: Adapted using the dtic's Annual Performance Plan 2021/2022 Available at: <http://www.thedtic.gov.za/media-room/strategic-and-annual-performance-plans>. Department of Environmental Fisheries and Forestry's Annual Performance Plan 2021/2022, Available at: <https://www.dffe.gov.za/sites/default/files/reports/2021.2022annualperformanceplan.pdf>. Department of Science and Innovation Annual Performance Plan, Available at <https://www.dffe.gov.za/sites/default/files/reports/2021.2022annualperformanceplan.pdf>.

Note: Many of the KPIs are not specific but may generally relate to the plastics industry. (a) The dtic has 80 KPIs and joint KPIs. Those listed attempt to capture the overarching KPIs and Joint KPIs and are not specific to the plastics industry. (b) The DEFF has nine key programmes each with a set of KPIS, this list provided here draws on KPI specific to the plastics industry, particularly the chemical waste and legislative programmes.

7.1. Key industry associations

The business associations shown in Table 4 vary in influence and position, but collectively contribute to shaping the plastic industry's policies, practices, and public perception. These associations serve as essential platforms for stakeholders to address challenges, share expertise, and collectively work towards a resilient and environmentally conscious future for the South African plastics industry.

Table 2: Key business associations

ORGANISATION	INFLUENCE	MAIN CLAIMS
Plastics SA/ Plastic Convertors Association of South Africa	Plastics SA is the umbrella organisation representing the South African plastics industry. It serves as a collective voice for various roleplayers within the industry. It also fosters collaboration and knowledge sharing among industry stakeholders, driving research and innovation efforts in the plastics value chain.	Plastics SA opposes calls for reduced plastic consumption, emphasising the ongoing importance of plastics, and advocating for responsible use and production. It also challenges the perceived environmental friendliness of alternative plastics, noting their limited biodegradability. Plastics SA calls for a comprehensive reassessment of the environmental impact of alternative plastics and urges a more nuanced understanding of their ecological implications.

ORGANISATION	INFLUENCE	MAIN CLAIMS
South African Plastics Recycling Organisation (SAPRO)	SAPRO is an industry body that promotes and supports recycling plastics in South Africa. It collaborates with stakeholders across the value chain, including manufacturers, recyclers, and government entities.	SAPRO believes that some retailers use plastic alternatives such as polyethylene terephthalate (PET) bags, and have gained popularity by not lending to the local recycle streams, nor are they manufactured locally, thus missing the opportunity to create local jobs. SAPRO is in favour of 100% recyclable products.
Southern African Plastic Pipe Manufacturers Association (SAPPMA)	Representing at least 13 plastics and plastic product manufacturing companies, SAPPMA is an industry association.	
Southern African Vinyls Association (SAVA)	SAVA is the voluntary industry association representing the entire value chain of the local PVC industry. It represents some of the country's largest plastics and plastic pipe producers, including Sasol, Mpack, and SAPPMA.	While SAVA supports the reduction of plastic waste in the country, it argues that there is no need to abolish or stop the use of some plastics as they can be recycled without losing their core properties.
GreenCape and the SA Plastic Pact	The SA Plastic Pact is part of a worldwide network of 12 Pacts. The organisation involves various other organisations that represent crucial stakeholders throughout the plastic value chain. Members of the organisation are at the forefront of creating a circular economy of plastics within the economy, preventing plastic waste from ending up in landfills and the environment and generating new employment opportunities.	The organisation's position is centred around its goals to reduce "unnecessary" plastic packaging by eliminating unnecessary plastics and packaging, including PVC, redesigning packaging, and innovating and promoting alternative delivery models, with all plastic packaging recyclable, reusable or decomposable.
Packaging Council of South Africa and the Institute of Packaging of South Africa	Represents packaging manufacturers and suppliers, including those in the plastic packaging value chain. Working towards promoting responsible packaging practices and engaging with regulatory bodies.	

Source: Adapted from Conradie, 2021.

There are several key unions and union federations, each with unique strengths and focus areas, contributing to shaping the trajectory of the industry. Historically, the main union has been the Chemical, Energy, Paper, Printing, Wood and Allied Workers Union, with 48 000 members in 2022, down from 65 000 in the 2000s. The National Union of Metalworkers of South Africa (NUMSA) claims a total membership of 360 000. Within NUMSA's ranks, it has 10 000 members in the plastics industry. Other unions in the industry include the General Industries Workers Union of South Africa and the Chemical, Wood, and Allied Workers Union.

8. PLATFORMS FOR STAKEHOLDER ENGAGEMENT

This section investigates the pivotal platforms that serve as conduits for meaningful interactions within the plastics value chain. The aim is to uncover the diverse perspectives, initiatives, and partnerships that collectively shape the trajectory of the South African plastics value chain. From industry forums to regulatory bodies, this sets the stage for an examination of the platforms that drive dialogue (and lobbying) in the industry.

8.1. Metal and Engineering Industries Bargaining Council (MEIBC)

The Metal and Engineering Industries Bargaining Council is an organisation that serves as a collective bargaining platform for the metal and engineering industries in South Africa. While the MEIBC primarily focuses on these subsectors, its activities also extend and impact the plastics industry. In addition, the MEIBC provides dispute resolution mechanisms to address conflicts and grievances between employers and employees in the metal and engineering industries. These mechanisms can also be used by employees in the plastics industry covered by the MEIBC agreements, ensuring fair resolution of disputes, and fostering harmonious industrial relations.

8.2. Manufacturing, Engineering, and Related Services Sector Education and Training Authority (merSETA)

MerSETA is the statutory Sector Education and Skills Authority (SETA) for the manufacturing, engineering, and related services sectors. Its primary role is to co-ordinate and finance skills development initiatives and qualifications systems in these industries. The MerSETA includes six subsectors comprising about 40 000 companies (including the metal and engineering sub-sector, manufacturing of tyres and plastics, auto and component manufacturing, and motor rail industry). Like other SETAs, the MerSETA's funding comes from a levy on producers (mostly excluding micro enterprises) in its industries.

Together with its mandate to promote skills development, merSETA encourages collaboration with stakeholders in the plastic value chain, including industry associations, trade unions, and businesses, to align training initiatives with the industry's evolving needs and ensure the programme's relevance. The collaborative efforts between stakeholders allow merSETA to identify the skills gaps and shortages within the plastic value chain and design training programmes to address these, with the aim of improving the skills and competencies of the workforce in areas such as plastic processing, mould making, quality control, and polymer technology. This also includes facilitating leadership and apprenticeship programmes in the plastic value chain, providing opportunities for individuals to gain practical experience while undergoing formal training. This helps to bridge the gap between theoretical knowledge and practical application.

9. MAJOR POLICY AND INFRASTRUCTURE INITIATIVES

This section explores the major policy and infrastructure initiatives that wield transformative influence, shaping the industry's regulatory framework and underpinning its infrastructural developments. It includes pivotal policies and infrastructure initiatives that are essential for the subsector's growth, resilience, and alignment with global sustainability goals.

9.1. Plastics in the IPAP

The South African government has consistently prioritised the plastics sub-sector in its industrial policy, as evidenced by successive versions of the Industrial Policy Action Plan (IPAP). Initially, the 2007 IPAP (IPAP 1) acknowledged the significance of the downstream plastics industry in terms of job creation and value-added. However, it also recognised the challenges faced by the industry, including the need for more competitive pricing of polymer inputs, skill development, and support for technical capabilities such as research and development (R&D) and tooling.

To address these issues, IPAP 1 outlined specific actions, including a review of import duties on upstream products, introducing a national tooling initiative, and initiating a project focused on enhancing the production of value-added polypropylene products for the automotive and packaging sectors. The review of tariffs on selected basic chemicals, including primary plastics, subsequently reduced duties on surface-active agents and primary plastics and other reforms in the following years,

such as the rebates on tapes of polymers of ethylene; reduction in the rate of customs duties on certain of the low density of polyethylene; and the reduction in the rate of customs duty on Ethylene Alpha Olefin Copolymers³. In the subsequent IPAPs, the plastics value chain was a priority for intensified and expanded interventions by the dtic.

While the reduction of import tariffs on polymers was expected to enhance competitiveness, the IPAPs acknowledged persistent challenges faced by plastics converters, such as the pricing of raw materials; limited local and regional market size; lack of advanced manufacturing practices; inadequate focus on downstream R&D; and logistical costs associated with South Africa's geographic location. Key opportunities were identified in automotive interiors, packaging, medical, construction, and electrical/electronic value chains. The IPAPs identified further constraints affecting the plastics value chain, including electricity pricing, intense competition from imports, limited enterprise scale, and significant skills shortages, particularly in plastics engineering and experienced artisans. These findings aligned with the perspectives shared by companies interviewed during the study.

Subsequent IPAPs also introduced additional focus areas, such as green industries with a specific mention of turbine blades, facilitating investment and beneficiation of polypropylene by converters, combating illegal imports, and promoting local manufacturing. While the IPAPs adjusted their stance regarding plastics according to the changes and progress in the industry, the overall strategy remains constant across the industrial development action plans.

The key milestones involved in the plastic value chain's cluster development promote collaboration in testing, R&D, and skill development, enabling economies of scale through shared infrastructure, equipment, and knowledge. Thus, it enhances the industry's competitiveness by improving support mechanisms for local manufacturers. This further involves conducting an awareness campaign among plastic manufacturers to ensure they are well informed about available support measures by the dtic and the import duty structure related to intermediate and finished products.

9.2. Plastics Master Plan

The Master Plan, which has stalled in the draft process, aims to address critical challenges, promote sustainable growth, and leverage opportunities within the value chain. The Master Plan is intended to be a strategic roadmap for the development and transformation of the industry, considering both economic and environmental aspects. While acknowledging the importance of the plastics industry as a significant contributor to job creation, value-added production, and export earnings. The current draft of the Master Plan also recognises the need to address pressing issues, including the sustainable use of resources, waste management, pollution reduction, and growth of the local plastic industry (Plastics SA, 2023).

Balancing economic growth with environmental sustainability is a central theme within the policy discourse. The policy roadmap of the plastics industry within the Master Plan framework mainly continues the goals articulated throughout the IPAP, but aligns with broader sustainability goals while also aiming to reduce the plastic trade deficit to less than 10% of the industry's total value by 2035. In so doing, the policy emphasises the following key areas:

- Value chain localisation
- End-of-life solution
- Polypropylene beneficiation

³ Ethylene alpha-olefin copolymers are types of materials made by combining ethylene (a gas that is a basic building block of many plastics) with other similar molecules called alpha-olefins. These materials are often used to create flexible and tough plastics for packaging, pipes, and even parts for cars.

- Testing research and development
- Optimising local growth potential

By addressing challenges and leveraging opportunities, the policy roadmap seeks to ensure the industry's long-term viability while minimising its environmental footprint. The Master Plan further emphasises the importance of collaboration between government, industry stakeholders, and civil society in shaping the future of the plastics value chain. It encourages a multi-stakeholder approach that involves engagement with manufacturers, researchers, environmental groups, and consumers to develop holistic and effective policies.

A crucial aspect of the policy roadmap is the promotion of circular economy principles within the plastics industry. This involves transitioning from a linear “take-make-dispose” model to a more sustainable approach that prioritises recycling, re-use, and resource efficiency. Policies are designed to encourage the development of innovative recycling technologies, establish recycling infrastructure, and implement extended producer responsibility schemes to hold manufacturers accountable for their products throughout their lifecycle.

The Master Plan also emphasises the importance of R&D to drive innovation within the plastics industry. R&D initiatives focus on developing sustainable materials, exploring alternative feedstocks, and advancing manufacturing processes that minimise environmental impacts. Collaboration between industry players and research institutions is encouraged to foster knowledge-sharing, technology transfer, and the development of cutting-edge solutions.

Another key aspect is the support for skills development and capacity building within the plastics industry. Recognising the need for a skilled workforce, the policies aim to address skills shortages and promote training programmes that equip workers with the necessary knowledge and expertise to meet industry demands. This includes initiatives to enhance technical skills, encourage entrepreneurship, and foster a culture of innovation and continuous learning.

9.3. National Environmental Management: Waste Act No. 59 of 2008 Extended Producer Responsibility (EPR) Regulations

In May 2021, the Minister for Environment Forestry and Fisheries brought into effect the National Environmental Management Waste Act's Extended Producer Responsibility. The EPR is a policy that aims to hold producers accountable for their products' environmental impacts throughout their lifecycle, including after they become waste. It is based on the principle that producers should take responsibility for managing and properly disposing of the products they introduce into the market.

Under the EPR policy, producers are obligated to manage the collection, recycling, and safe disposal of their products and packaging materials at the end of their useful life. This places the financial and operational burden on producers, encouraging them to design more environmentally friendly products, promote recycling and reuse, and minimise waste generation. The main objectives are:

- Environmental impact reduction by ensuring their proper management at the end of life. This includes promoting recycling, reducing landfilling, and preventing pollution.
- Encouraging resource conservation and circular economy by producers by designing easily recyclable products, using recycled materials, and promoting a shift towards a circular economy. Producers are incentivised to use resources more efficiently, reduce waste, and take responsibility for their products' entire lifecycle.
- Internalising the costs associated with waste management, recycling, and disposal into the product's price. This helps incentivise producers to adopt more sustainable practices and promotes fair distribution of costs among stakeholders.

- Promoting collaboration among producers, recyclers, government agencies, and other stakeholders involved in waste management. It encourages partnerships, information sharing, and the development of efficient collection and recycling systems.

EPR policies have been implemented in various countries around the world to address waste management challenges, promote sustainability, and encourage producers to take greater responsibility for their products by shifting the burden of waste management from governments and taxpayers to producers. Furthermore, the establishment of the ERP prompted the plastic industry to consider the creation of the Producer Responsibility Organisation that integrates the plastics substrate.

9.4. Initiative to End Plastic Litter in the Environment and SA Plastics Pact

The Initiative to End Plastics Litter in the Environment is a collaborative endeavour spearheaded by the Consumer Goods Council of South Africa and Plastics SA. It involves participation from various stakeholders throughout the value chain. This initiative has outlined four action groups to tackle the issue of plastic litter comprehensively. These action groups are dedicated to the following objectives:

- Establishing an effective infrastructure for the collection of plastic litter.
- Developing innovative technologies and solutions for recycling problematic plastics.
- Promoting education and awareness to instigate a positive shift in public behaviour towards plastic usage.
- Exploring the use of bioplastics to mitigate the unintended consequences of bio-based, biodegradable, and compostable materials in the recycling process.

The South African (SA) Plastics Pact is a product of collaborative efforts involving the World Wide Fund for Nature (WWF), the Waste and Resources Action Programme, SAPRO, and support from the Ellen MacArthur Foundation's Plastics Pact network. Retailers and brand owners have united under this pact to reconsider and redesign their product plastic packaging, with the shared objective of achieving active participation in the plastic circular economy by 2025 (Plastics SA, n.d.). To realise the targets set for 2025, the SA Plastics Pact has devised a high-level roadmap in the form of an action plan. This plan emphasises the following four key areas:

- Redesigning or innovating to eliminate problematic or unnecessary plastic packaging while exploring alternative delivery models like reuse systems.
- Ensuring that all plastic packaging is made reusable, recyclable, or compostable.
- Achieving an effective recycling rate of 70% for plastic packaging.
- Aiming for an average of 30% recycled content across all plastic packaging.

By focusing on these crucial aspects, the initiative and the SA Plastics Pact aim to make significant strides towards ending plastic litter and fostering a more sustainable and responsible approach to plastic usage within the country.

10. MAIN POLICY DEBATES

10.1. Sasol, import markets and tariffs

The elevated prices of primary plastics, mostly produced by Sasol, exert a notable influence on the South African plastics industry, constituting a substantial portion of the overall manufacturing costs of plastic goods. This surge in prices ripples through the broader manufacturing sector, impacting its economic vitality and impeding employment creation. However, proponents of Sasol and local primary plastic manufacturers contend that prioritizing domestic production is crucial for bolstering the local economy and preserving domestic capabilities. Championing the cause of domestic production,

especially for essential plastic materials, has served as a strategic approach to fortify supply security. Proponents argue that in reducing the reliance on imports, which are vulnerable to disruptions in global supply chains, local production emerges as a resilient solution. Advocates further argue that such a strategy not only mitigates the industry from external shocks but also contributes to fostering a self-sufficient and robust manufacturing ecosystem within South Africa.

Nonetheless, the relatively high price of South African primary plastics has contributed to increased imports of primary plastics from other markets, such as China. These imported plastics have been subject to global market trends, currency exchange rates, and tariffs. As a result, prices of imported plastics have been subject to fluctuations.

In addition, the issue of Sasol's feedstock has been topical in recent years. The debates revolve around the company's reliance on coal in the production of fuels and chemicals. Sasol, which supplies its own coal from six subsidiary mines, has historically been a major player in the synthesis of liquid fuels and chemicals using coal-to-liquids and gas-to-liquids technologies.

Coal is a carbon-intensive resource, and Sasol's operations have been criticised for its extensive use of coal and thereby contributing to greenhouse gas emissions, a major factor in climate change. In South Africa, Eskom and Sasol contribute to more than 50% of national greenhouse emissions (see Makgetla and Patel, 2021). In response, Sasol has explored ways to transition towards cleaner and more sustainable feedstocks to align with global efforts to reduce carbon emissions. It initially looked at gas from Mozambique, but the cost of transport and geopolitical issues proved prohibitive. Subsequently, it has turned to green hydrogen. The hope is that green hydrogen, produced through electrolysis using renewable energy sources that are abundant in South Africa, will provide a viable green alternative to coal. Sasol has also invested significantly in technologies to reduce its environmental footprint, including carbon capture and storage initiatives.

10.2. Use of alternative input and litter

An ongoing debate within the plastics industry revolves around contrasting perspectives on the root causes and environmental consequences of plastic use. The first approach, often championed by proponents focused on litter and its origins, challenges the notion that the use of fossil fuel-based plastics is inherently detrimental. Advocates of this viewpoint contend that human behaviours, rather than the material itself, are the primary contributors to litter. They advocate for improving plastic recyclability and encouraging responsible disposal practices as strategies to mitigate environmental impact. Recognising the economic appeal of fossil fuels in plastic production, these advocates propose enhancing the efficiency of existing facilities and supply chains to alleviate concerns related to litter and waste, exemplified by policy actions such as the thickening of plastic bags.

Even with litter, numerous critics contend that recycling, in its current form, falls short of being a viable solution, characterising it as a somewhat deceptive practice. They argue that recycling systems are incapable of effectively managing most plastic waste and, regrettably, a significant portion of materials deposited for recycling ends up being diverted to landfills. This scepticism raises concerns about the efficacy and transparency of recycling processes, highlighting the need for comprehensive improvements in waste management strategies to address the substantial challenges of plastic waste.

A second viewpoint shifts the focus to emissions and broader environmental impacts. Advocates of this perspective highlight the significant role played by fossil fuels as feedstock in the plastics industry, resulting in the release of greenhouse gases and contributing to climate change. They draw attention to the far-reaching consequences of fossil fuel-based plastics, such as ocean pollution and harm to wildlife, even in the absence of litter. This faction points to advancements in technology and materials science, particularly the emergence of bioplastics, as promising solutions to reduce the environmental

footprint of the plastics value chain. This proposal involves a shift away from traditional plastics to alternative materials, emphasising the potential of innovation to diminish reliance on fossil fuels and address the broader environmental challenges associated with plastic production.

10.3. The challenges to implementing the Extended Producer Responsibility

The ERP programme, legislated in 2021, phases in mandatory standards for collection and recycling and requires importers and producers to pay a levy per tonne to assist in clean up. There has been considerable debate among stakeholders on the allocation of costs and responsibilities within the ERP programme. Some producers argue that the burden falls disproportionately on certain producers or value chains, while others advocate for a more equitable distribution of responsibilities.

Another contentious issue is the effectiveness of the current ERP initiatives in achieving meaningful reductions in plastic waste and pollution. Critics question whether current strategies are sufficient and adequately address the root causes of plastic pollution. The role and involvement of informal waste pickers and recycling cooperatives in the programme are also points of contention. Some observers argue that they should gain more recognition as valuable contributors to waste management.

11. BINDING FACTORS

11.1. Rising input costs

Rising input costs, including electricity, water, transport, and raw materials (i.e., fossil fuel for plastics manufacturers and primary plastics for plastics products), pose a challenge for manufacturers of plastics and plastic products. Rising fuel prices, geopolitical facts, exchange rate volatilities and the recent commodity boom have driven increasing prices in the past few years, negatively impacting the production of plastics and plastic goods. More frequent and longer-lasting loadshedding from late 2021 added to the burdens. Rising input costs are reflected in the Producer Price Index annual inflation rates, with electricity at 15.5% and water at 14.4% in May 2023 (Stats SA, 2023). Taken together, cost increases significantly reduce operating margins and directly impacts the plastics industry's growth.

11.2. COVID-19 pandemic

COVID-19 caused disruptions across global value chains, affecting the availability and transportation of raw materials and components essential to the plastics industry. Lockdown measures, border closures, and reduced manufacturing capacities led to delays, shortages, and increased costs in procuring raw materials, affecting production capabilities. The pandemic further resulted in economic slowdowns and supplier and consumer behaviour changes. The COVID-related lockdowns impacted the plastic demand, leading to several key producers, such as Sasol and Nampak, operating below capacity (Conradie, 2021). Industries that heavily rely on plastics, such as construction and hospitality, experienced a decline in demand due to temporary closures, reduced consumer spending, and disrupted project timelines. This, together with labour shortages, operational challenges, regulatory delays, and policy uncertainty, meant that the COVID-19 pandemic impacted production planning, efficiency, and output, ultimately hampering the growth of the industry.

11.3. Environmental pressures

The plastics value chain faces growing pressure to reduce its environmental impacts, mostly from high levels of emissions from coal-based polymer production and plastics disposal. Internalising the costs of emissions through new technologies requires both substantial investment and innovation and will likely require the write-off of some assets. A successful transition should, however, lay the basis for long-term growth. For plastic products, new responsibilities to reduce litter also add to costs, effectively making producers internalise the environmental impacts of their products.

12. SWOT ANALYSIS

STRENGTHS	WEAKNESS
<ul style="list-style-type: none"> • Well-established manufacturing capabilities, including advanced technology, infrastructure, and skilled labour. This allows for efficient production processes and the ability to meet diverse customer demands. • The wide range of plastic products across various sectors • The South African plastics industry has a strong focus on research and development in the plastics industry. The industry benefits from research institutions, universities, and industry bodies dedicated to advancing materials, processes, and applications. • The industry is energy intensive, but has historically benefited from low-cost coal, and has the potential to draw on South Africa’s abundant renewable energy in the future. • South Africa has a high rate of recycling relative to other middle-income economies. • The industry benefits from preferential trade agreements, strategic geographic location, and a reputation for quality and reliability. 	<ul style="list-style-type: none"> • Production of polymers has fallen significantly in the past 15 years. • Sasol’s reliance on coal is not sustainable in the long run, and the transition requires both technological innovation and considerable new investment. • The South African plastics industry has few producers of primary plastics, and imports have risen in recent years. • South African producers of plastic products have to compete with imports from larger scale producers. • The recycling infrastructure in South Africa still faces limitations and reaches only just over a quarter of recyclable material. • Skills shortage due to limited availability of skilled key personnel. • International competition using petroleum rather than coal may be cheaper as well as somewhat cleaner. • Small local and regional markets.
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Transition to a cleaner feedstock for plastics, based on South Africa’s substantial solar and wind resources. • The automotive industry in South Africa increasingly offering opportunities for plastics manufacturers to supply components such as interior parts, exterior trim, engine parts, and electrical components. • Increasing bioplastics production and improving consumer awareness about bioplastics. • Shift to renewable feedstock (i.e., green hydrogen and biomass). • Scale up recycling and build capacity to recycle bioplastics. 	<ul style="list-style-type: none"> • The global shift towards environmental sustainability and increased awareness of plastic pollution. • Continued pressure from imports. • Sasol has difficulties in moving away from coal. • Bottleneck in primary plastics production.

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