Sustainability in the Plastic Sector

Research Findings

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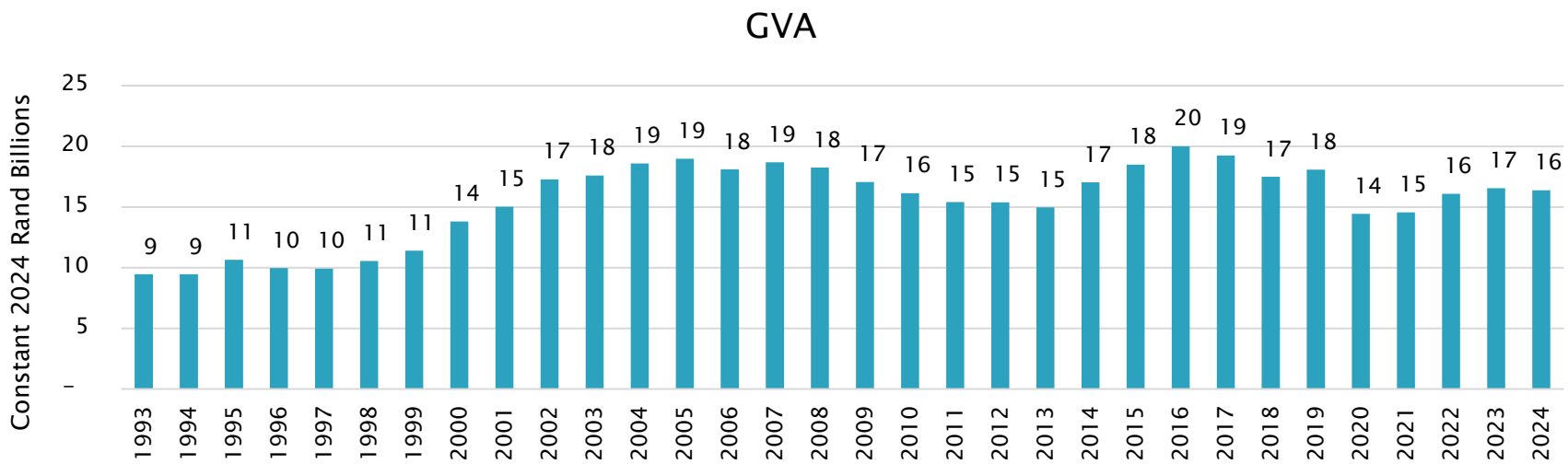
Contents

- Industry overview
- Carbon intensity of the industry
- Policy landscape
  - Global policy shaping the industry
  - Local policy shaping the industry
- Conclusions

Industry overview

- The SA chemicals, plastics products, and rubber manufacturing subsector employed 164 000 workers in Q4 2022.
- The import of primary plastics surged from R7.59 billion (290 000 tons) in 2001 to R25 billion (960 000 tons) in 2022.
  - Saudi Arabia (18.6%), China (12.8%), and the US (10.1%)
- GVA increased from R9 billion in 1993 to R16 billion in 2024, which is 78% over the 31 years.



Source: Calculated from Quantec. EasyData. Standardised Industry Service

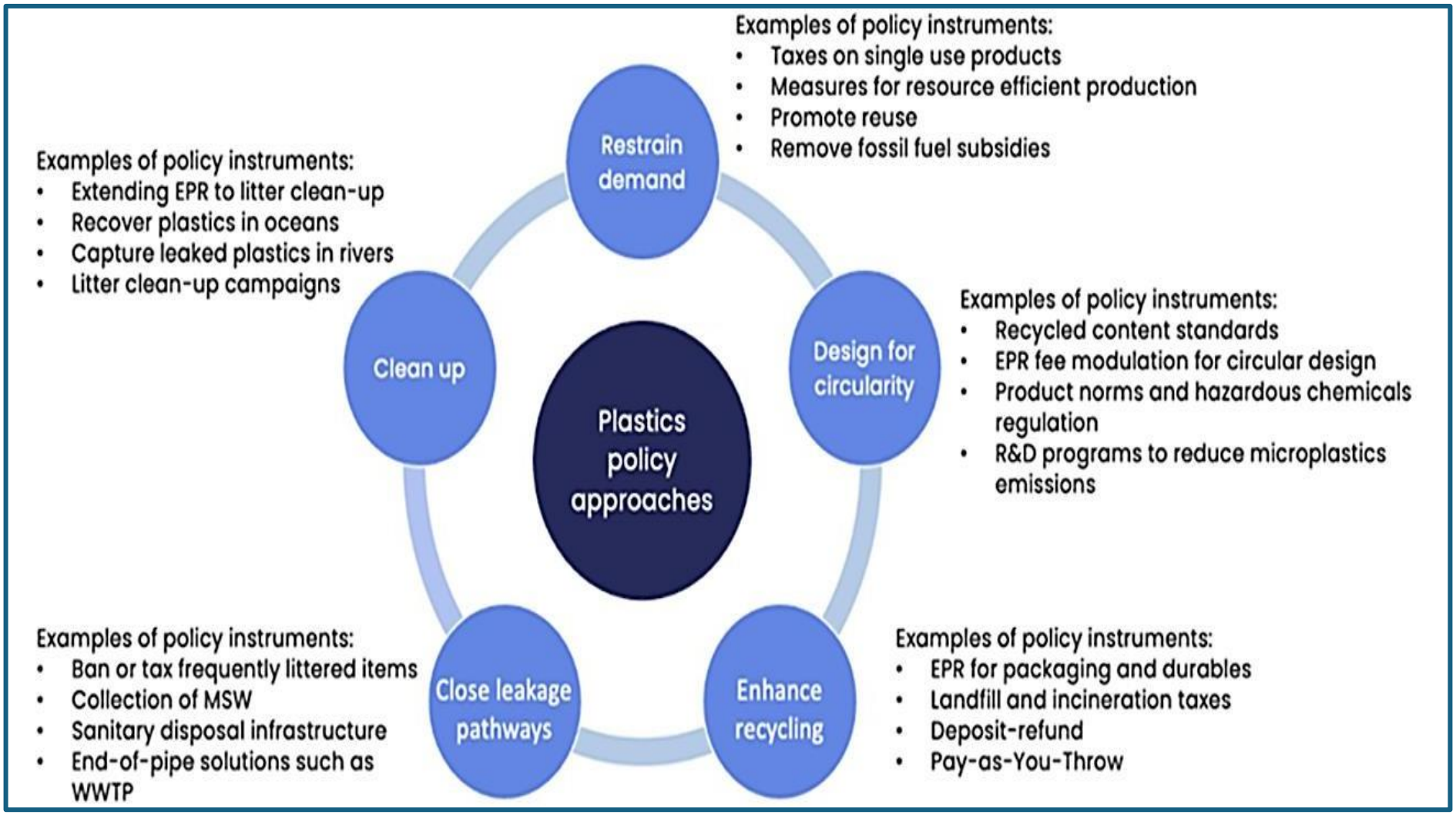
Carbon intensity: Fossil fuel-based vs Bio-based polymers

Plastics GHG emission comparison		
	Fossil Fuel based Polymer (Kg CO2/Kg)	Bio-Based Polymer (Kg Co2 EQ/KG)
High-density polyethylene (HDPE)	1.9 to 2	-0.55 to -0.88
Polyethylene terephthalate (PET)	2.2 to 3	1 to 2.4
Polypropylene (PP)	1.8 to 2	-0.2 to -0.3

Source: OECD, 2022. Global plastics Outlook

- GHG from the plastics are expected to more than double
  - 1.8 Gt CO2 e (2019) to 4.3 Gt CO2 e (2060).
- PET, HDPE, and PP account for over 60% of global plastic use.
  - PP has the lowest emissions among the fossil-based options
- Bio-based plastics offer lower-emission alternative to fossil-based plastics
  - Made from renewable feedstocks like corn, wheat, and sugarcane residues.
  - Some are biodegradable or compostable, depending on their polymer composition and breakdown conditions.
- As of 2023, they represent only 1% of global plastic production
  - Projected to reach 5.7 million tonnes by 2029.
- Scaling production poses challenges due to high land and water requirements.

Global policy shaping the industry



Source: OECD, 2022. Global plastics outlook.

Local policy landscape in the industry

- **Plastics in South Africa's Industrial Policy:**
- Plastics sector prioritised since 2007 under the Industrial Policy Action Plan (IPAP) due to its:
  - High job creation potential
  - Linkages to key sectors (automotive, packaging, construction)
  - Role in local beneficiation
- Key IPAP interventions:
  - Tariff reviews on primary plastics
  - National Tooling Initiative
  - Support for downstream manufacturing and clusters
- Industrial upgrading supports energy-efficient production, lower emissions, and sustainable materials use.

- **Plastics Masterplan (draft):**
- A draft Plastics Master Plan builds on IPAP to promote:
  - Sustainable growth and reduced plastic trade deficit
  - Investment in recycling, alternative feedstocks, and end-of-life solutions
- Key focus areas with climate relevance:
  - Circular economy: Reducing virgin plastic production and emissions
  - R&D and innovation: Supporting low-carbon alternatives
  - Localisation and beneficiation: Reducing transport-related emissions
- By aligning plastics strategy with resource efficiency and waste reduction, the Plan supports national and global climate goals.

Local policy landscape in the industry

Waste Act & National Waste Strategy:

- National Environmental Management: Waste Act (2008) underpins environmental and climate action via:
  - Norms and standards for responsible waste management
  - Rights-based approach to a healthy environment
- NWMS 2020 elevates plastic waste as a key climate issue:
  - Targets to divert 40% of waste from landfills in 5 years
  - Focus on single-use plastics, marine pollution, and extended value chains
- Climate relevance:
  - Landfills are major GHG emitters; diversion mitigates methane
  - Waste minimisation supports resource efficiency and carbon reduction

Extended Producer Responsibility (EPR):

- Introduced under the Waste Act in 2021, EPR shifts waste responsibility to producers.
- Climate-aligned goals:
  - Reduce emissions through recycling and reuse
  - Internalise environmental costs
  - Support eco-innovation and green product design
- Challenges:
  - High compliance burdens for SMEs
  - Infrastructure gaps
  - Limited consumer awareness
- EPR aligns South Africa's plastics approach with circular economy principles and global climate policy trends.

Conclusion

- The OECD advocates for a broad and integrated policy approach to address the environmental impacts of plastics.
- Different policy instruments serve different purposes, some specifically target plastics, while others address general waste.
- Targeted measures, such as bans and taxes on single-use plastics, aim to reduce the consumption of specific items.
- Broader tools, like landfill taxes, apply to all solid waste and encourage recycling and energy recovery over disposal.
- The OECD emphasises that no single policy is effective in isolation.
- An effective strategy must involve a mix of complementary policies that work together and reinforce one another.

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