



South Africa Waste-to-Energy Industry Analysis

Executive summary

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Executive summary

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Study aim and objectives



Key points

- Our study explores South Africa's Waste to Energy industry, particularly the feasibility, future growth prospects and business models that can be leveraged to progress the market.
 - South Africa's energy crisis where demand exceeds supply started in 2008 driven by:
 - Population growth
 - Aging power stations
 - Inadequate investment in new generation capacity.
 - South Africa also has a waste crisis exacerbated by increasing urbanisation and economic development that led to more municipal solid waste production.
 - Approximately, 93% of waste is diverted to landfills which resulted in a rapid reduction in available airspace on as these landfills.
- The exploration of solving both the energy and waste crisis has led to a growing interest in Waste to Energy as a viable alternative, particularly from a self-generation (residential and commercial) and rural electrification standpoint.

Geographic scope



- South Africa

Product scope

- Waste to Energy

Study scope

- Value chain
- Market participants
- Market dynamics
- Market forecasts

Birguid has gathered insights to inform stakeholders on the current and future opportunities presented in the Waste to Energy industry

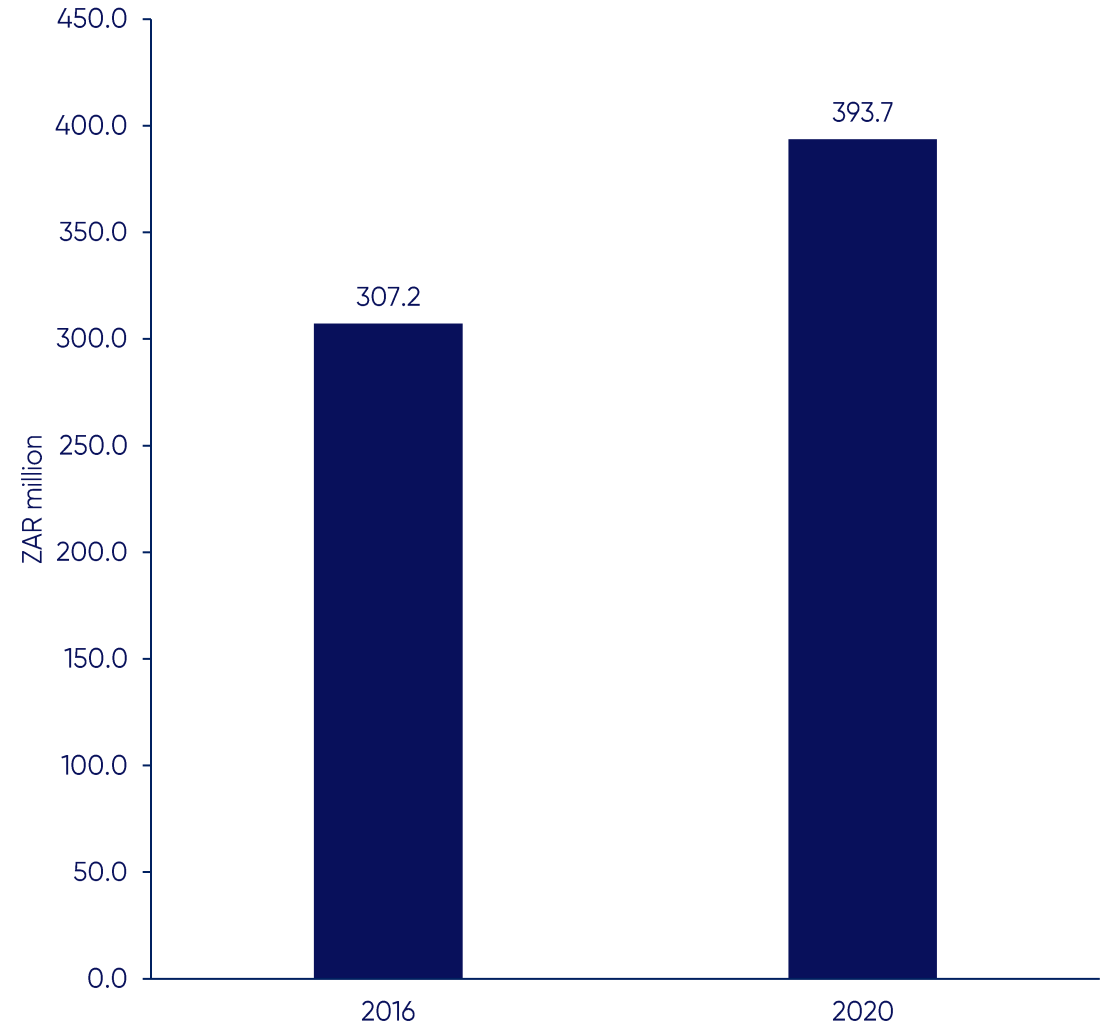
Industry overview



Key points

- Despite South Africa's Waste to Energy accounting for only 3% of the renewable energy mix, revenues increased 28.1% from ZAR307.2 million to ZAR393.7 million between 2016 and 2020.
 - Going forward, municipalities will be the main drivers of waste to energy industry growth in a bid to resolve the issue of diminishing landfill air space and the electricity supply crisis.
 - For example, municipalities in the Western Cape are in the process of implementing Public Private Partnerships that will potentially attract ZAR1.3 billion in investment for WtE.
- Waste to Energy revenues are likely to further increase as a result of legislation changes around the utilisation of landfill airspace and encouragement of renewable power production.
 - As an example, in 2021 Q2, the government increased electricity generation capacity to 100MW for independent power producers. This change includes WtE players looking to contribute to the country's power grid..

South Africa Waste to Energy industry revenues (2016 - 2020)



The electricity and waste crises in South Africa can be averted through the conversion of waste to energy thus addressing two issues with one solution

Industry dynamics overview



South Africa's Waste to Energy industry drivers (2020 - 2025)

- 1 Diminishing Landfill airspace
- 2 Electricity supply-demand gap
- 3 Electricity price reduction
- 4 Alignment with global green agenda
- 5 Employment creation

South Africa's Waste to Energy industry restraints (2020 - 2025)

- 1 High market entry costs
- 2 Limited financing solutions
- 3 Poor waste quality
- 4 Limited space for plant location
- 5 Lack of enabling policies

Overview of market drivers and restraints of South Africa's Waste to Energy industry for the years 2020-2025.

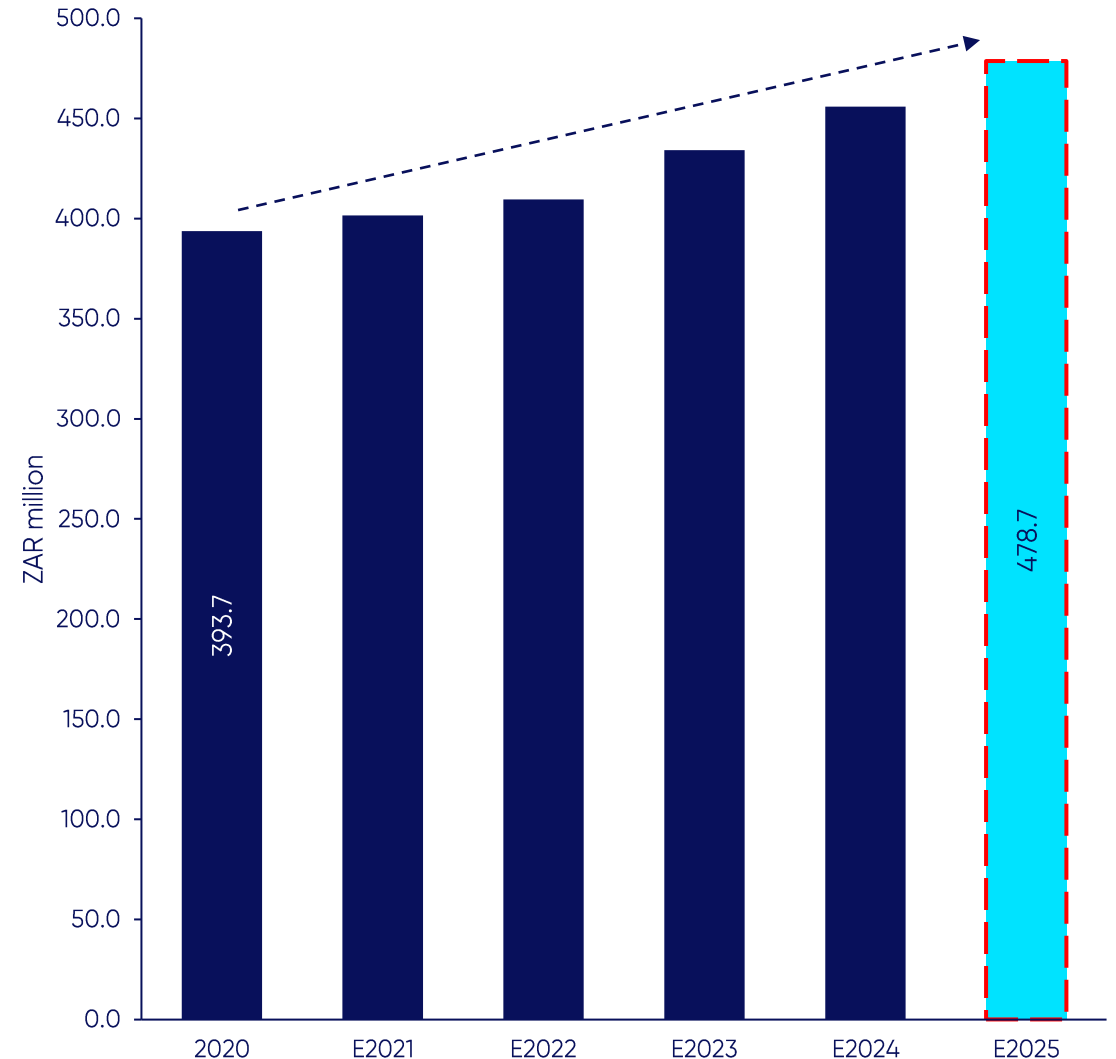
Total market: Forecasts



Key points

- Between 2020 and 2025, South Africa's waste to energy revenue is forecast to grow at a CAGR of 3.3% totaling an estimates ZAR478.7 million by 2025.
 - Industry growth will largely be driven by enabling government policy for example the new legislation on recycling.
 - Decline in available landfill airspace due to increased urbanization and interprovincial migration
 - Continued power outages despite Medupi coming online
 - Increased investment from both the public and private sector as an example municipalities in the Western Cape are in the process of implementing Public Private Partnerships that will potentially attract ZAR1.3 billion in investment and create 1,600 jobs.
- The municipalities in their need for waste management treatment solutions will assist in the growth of waste to energy in South Africa.
 - As more municipalities switch to WtE as a means to divert waste from landfills, revenue in the industry is expected to grow at a minimum of 5% from 2024.

South Africa's Waste to Energy Revenue, 2020 - 2025



Waste to Energy industry is expected to grow at a CAGR of 3.3% to ZAR478.7 million in 2025 driven by electricity demand and shortage of landfill airspace

South Africa Waste to Energy industry strategic conclusions (2021-2025)

Item	Rationale
Rate of growth of South Africa's waste to energy industry (2020-2025)?	<ul style="list-style-type: none">• South Africa's Waste to energy industry will grow at a CAGR of 3.3% between 2020 and 2025.
Driven by (What are the key opportunities for investors)?	<ul style="list-style-type: none">• Thermal incineration in urban areas• Anaerobic digestion (biogas) for rural population, farms and restaurants to produce biogas for heating and cooking, fertilisers and compost
How should industry participants take full advantage of market opportunities?	<ul style="list-style-type: none">• Develop supportive regulation and policy for waste to energy, have offtake agreements for the gas, fertilizer, compost or electricity.• Prioritise learning from more developed regions on large-scale thermal incineration, community level mini grids and portable domestic biogas technology.• Prioritise customer education initiatives.• Introduce subsidies for alternative energy in order to reduce electricity reliance on national grid.
What to look out for?	<ul style="list-style-type: none">• Infrastructure to facilitate waste to energy• Investment in affordable and more efficient waste to energy systems
Go or No go?	<ul style="list-style-type: none">• Go with the right business models as industry is in its infancy with potential for stable Return on Investment (ROI).



Thank you.

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